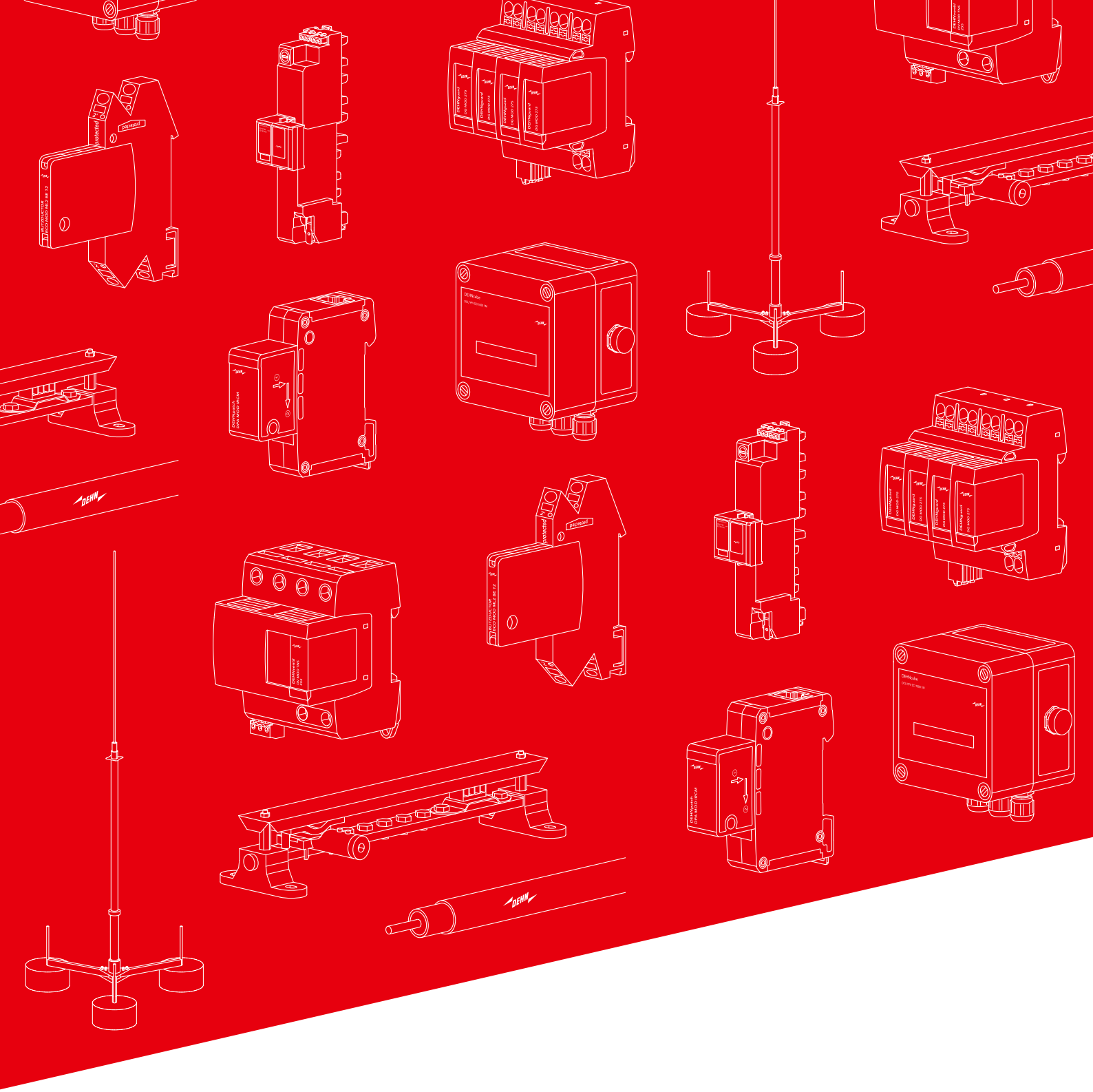


Lightning Protection / Earthing Surge Protection

Catalogue

Valid from April 2025

DEHN protects.

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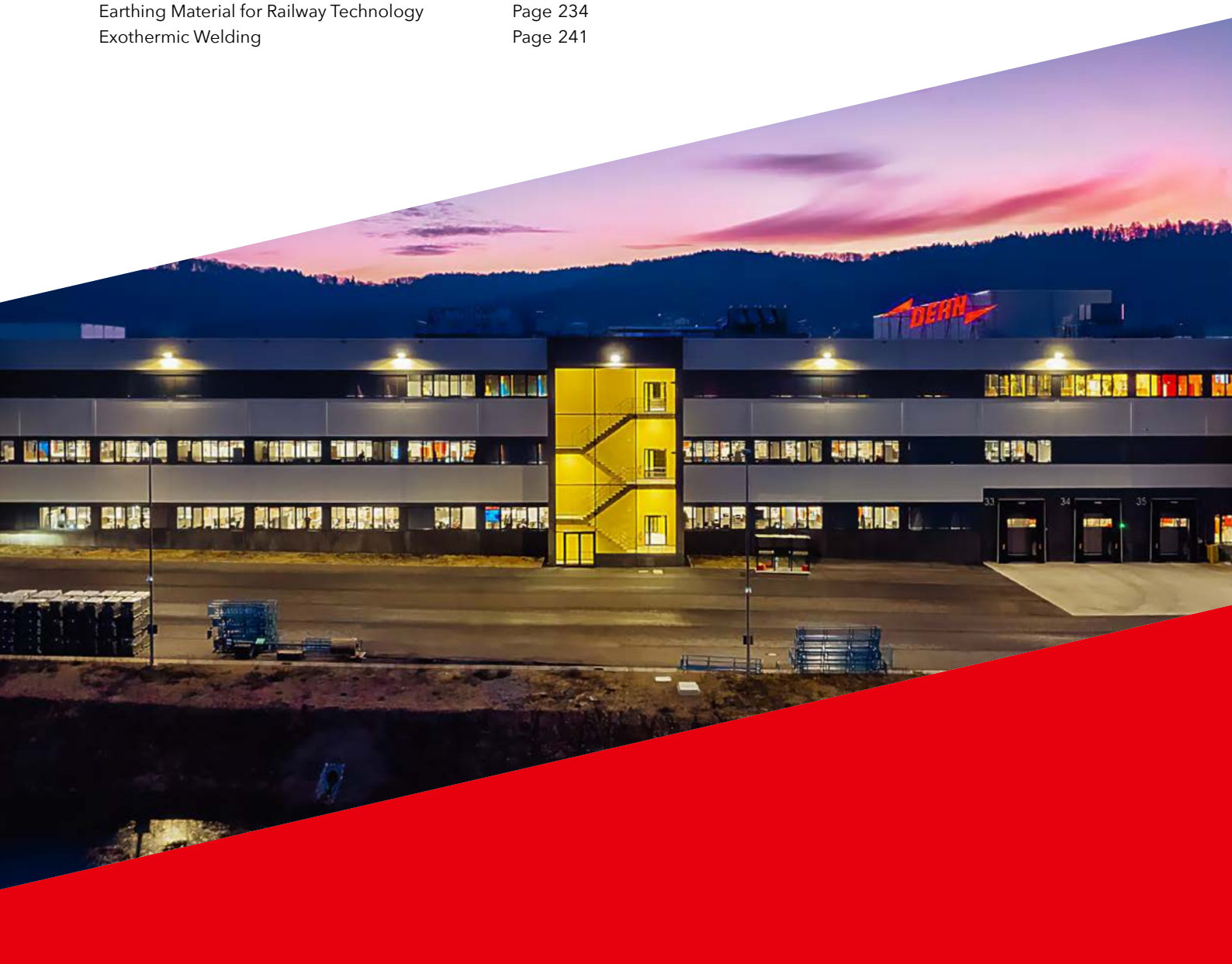
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Services

Quickly find the right service product:
https://de.hn/bKgsn

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Knowledge – DEHNacademy

DEHN E-learning

You would like to know more about lightning and surge protection?

Whenever and wherever is convenient for you: take advantage of our constantly growing range of digital learning resources.

Our constantly growing range of e-learning resources supports you:

- whenever
- wherever
- convenient

benefitTake advantage of this free service, select a course and get started.

DEHN E-learning:
https://de.hn/2J62Z

Events attended online and in person

Would you like to expand your knowledge in a group? You need expert knowledge for a specific branch?

Then the DEHNacademy seminars attended online or in-person are just the right thing for you.

Choose from a large selection of seminars and workshops on the topics: surge protection – lightning protection – safety equipment.

With the perfect balance of theory and practice. Each seminar ends with a certificate confirming your participation.

DEHNacademy:
https://de.hn/3AQPe

Tools – Planning support

DEHNplan

With the BIM-compatible, Web-based planning software, you can easily plan the standard-compliant external lightning protection and earthing system for your project. The efficient use of DEHNplan does not require any special prior knowledge and your specialised knowledge of lightning protection and earthing, as well as CAD skills, are sufficient.

Advantages for you at a glance:

- **3D lightning protection planning**
  Transparent, efficient and fast preparation and documentation in high planning quality
- **Standard-compliant**
  With just one tool, it's easy to achieve standard-compliant external lightning protection according to DIN EN 62305 (VDE 0185-305)
- **Future-proof**
  Equipped for future requirements with BIM-enabled software
- **Easy**
  Intuitive user interface and visual representation of protective space and separation distances for greater comprehensibility
- **Quick overview**
  Live incorporated bill of materials for cost transparency and all tender specifications in just a few steps
- **Cloud-based and up to date**
  Use not restricted to any particular work area with regular updates

DEHNplan:
https://de.hn/9mgP1

DEHNconcept

Save yourself time, money and resources:
The DEHNconcept planning service creates a complete lightning protection concept for your project from a single source.
You will receive the optimum solution and project design for lightning protection and the earthing system for your object, quite simply as a complete module, including all planning documents in an open data format for your documentation. In addition, we discuss industry and country specifics with you in project meetings and on-site appointments.

Examples from the services catalogue:

- **Protection concepts and calculations for external and internal lightning protection**
  Budget planning, risk analysis, lightning protection concept, surge protection concept, separation distance calculation, checking the protected volume, 3D laser scanning, creating drawings and models
- **Protection concepts earthing of lightning protection**
  Earthing concept for lightning protection systems, earthing simulation of step voltage
- **Concepts and calculations specially for transformer stations**
  Calculation of earthing conductor cross-sections, earthing simulation of step and touch voltage in case of short-circuit current and/or lightning interference

DEHNconcept:
https://de.hn/4oV2p







Expert knowledge from DEHN

Inspection tour

Planning a new system or changes to existing systems? Get expert knowledge and personal advice. To do so, simply get in touch with a DEHN employee. Always near to you.

The highly trained lightning protection specialists in our field sales team will be happy to assist you. Providing expert knowledge on all aspects of earthing and lightning and surge protection.

Are you an end user or potential buyer from the private sector?

Please contact a specialist contractor in your area. To be found, for example, at **www.e-check.de** or **www.vdb.blitzschutz.com**.

Inspection tour:
https://de.hn/vnGia

DEHN Test Centre

The ISO/IEC 17025 accredited DEHN Test Centre is one of the most powerful test laboratories for lightning impulse currents in the world.
Products, installations and systems are tested with test impulses of up to 400 kA (10/350 µs) in a facility spanning 800 m². Tests are conducted on the basis of the relevant test standards. Where necessary, they are accompanied by simulations.

In the DEHN Test Centre tests are carried out on

- lightning protection components,
- surge protective devices,
- and complete systems.

The tests and their results are documented in internationally recognised test reports. The accreditation symbol stands for maximum confidentiality and independence.
Are you interested in our services? Simply submit an enquiry and we will draw up a service offer tailored to your requirements.

DEHN Test Centre:
https://de.hn/7LURR

Expert advice from DEHN

Technischer Support

You plan or install lightning protection / earthing systems and have questions about the correct design?
You need some sort of surge protection and don't know exactly what to install or how to connect it?
You are occupied with the protection of people and systems and need help choosing the right voltage detector?

Our technical support provides expert advice and assistance. Whether you have questions about products or applications, planning or risk analyses, or standards: Our experts are happy to assist you. By phone, email or even on site upon agreement – **individual, competent, fast, reliable, free of charge.**

How to reach us:

Your query about earthing and equipotential bonding:
+49 9181 906 1750

Your query about lightning and surge protection:
+49 9181 906 1750

Your query about safety equipment:
+49 9181 906 1510

Technical Support:
https://de.hn/9J8VP





Lightning Protection Van

Consultation on site

DEHN lightning protection comes to you and your team. Our DEHN Lightning Protection Van is more than just a vehicle – it is a mobile experience and training venue in one. And all directly at your location.

The focus here is on our HVI lightning protection system, whether that be product innovations, installation tips or compact training courses on installation or measurement. Let our experts inform and train you personally.

Request a visit from the Lightning Protection Van. We look forward to hearing from you.

DEHN Lightning Protection Van:
https://de.hn/bfnEF

Cable material and Accessories

Discover our cable material and accessories:
https://de.hn/7Q32a

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Cable material and Accessories



Round Wires

According to EN 62561-2, for use in lightning protection and earth-termination systems.



Conductor materials can only be supplied in the original coil weights.
Further conductor materials as specified in the standard series EN 62561-2 are available on request.

DEHNalu wire



General technical data:	
Length tolerance	+/- 5%

Type RD ...	8 ALMGSI HH R148M	8 ALMGSI HH R21M
Part No.	**840 008**	**840 108**
Diameter Ø conductor	8 mm	8 mm
Cross-section	50 mm²	50 mm²
Material	AlMgSi	AlMgSi
Characteristics	semi-rigid	semi-rigid
Standard	EN 62561-2	EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	6.4 kA	6.4 kA
Coil weight	approx. 20 kg	approx. 3 kg
PU	148 m	21 m

Type RD ...	8 ALMGSI WEI R148M	8 ALMGSI WEI R21M
Part No.	**840 018**	**840 028**
Diameter Ø conductor	8 mm	8 mm
Cross-section	50 mm²	50 mm²
Material	AlMgSi	AlMgSi
Characteristics	soft, twistable	soft, twistable
Standard	based on EN 62561-2	based on EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	6.4 kA	6.4 kA
Coil weight	approx. 20 kg	approx. 3 kg
PU	148 m	21 m

Type RD ...	10 Al WEI R100M
Part No.	**840 010**
Diameter Ø conductor	10 mm
Cross-section	78 mm²
Material	Al
Characteristics	soft, twistable
Standard	EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	10 kA
Coil weight	approx. 21 kg
PU	100 m

Note: Al and AlMgSi may not be installed directly (without a gap) on, in, or under plaster, mortar or concrete, and also not in soil.

DEHNalu wire with plastic sheath



Wire with plastic sheath (halogen-free, frost-resistant and UV-stabilised) as additional mechanical / corrosion protection, e.g. when installed behind facades. Not suitable for underground installation.

Type RD ...	8 ALMGSI WE KM R100M	8 AL WE KM R100M
Part No.	**840 118**	**840 128**
Diameter Ø conductor	8 mm	8 mm
Cross-section	50 mm²	50 mm²
Material	AlMgSi	Al
Characteristics	soft	soft
Standard	based on EN 62561-2	EN 62561-2
Outside diameter Ø	11 mm	11 mm
Material of sheath	**plastic**	**plastic**
Sheath thickness	1.5 mm	1.5 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	6.4 kA	6.4 kA
Coil weight	approx. 20 kg	approx. 20 kg
Length tolerance	+/- 5%	+/- 5%
PU	100 m	100 m

DEHNcupal wire



Composite material with low weight in comparison to copper.
For use above ground as an air-termination and down conductor, or for equipotential bonding.

Type RD ...	8 AL CU WEI R110M
Part No.	**833 008**
Diameter Ø conductor	8 mm
Cross-section	50 mm²
Material	Al / Cu
Characteristics	soft, twistable
Standard	based on EN 62561-2
Cu sheath	min. 0.26 mm
Coil weight	approx. 20 kg
Length tolerance	+/- 5%
PU	110 m

Note: DEHNcupal wire can be twisted or straightened using a wire straightening device.

Copper wire



General technical data:	
Diameter Ø conductor	8 mm
Cross-section	50 mm²
Material	Cu
Standard	EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	9.7 kA
Length tolerance	+/- 5%

Type RD ...	8 CU F20 WEI R100M	8 CU F20 WEI R20M
Part No.	830 008	830 108
Characteristics	soft F20	soft F20
Coil weight	approx. 45 kg	approx. 9 kg
PU	100 m	20 m

Type RD ...	8 CU F25 HH R100M
Part No.	830 038
Characteristics	semi-rigid F25
Coil weight	approx. 45 kg
PU	100 m

Stainless steel wire



Stainless steel wires (Rd 10 mm) for use in soil have to be made of StSt (V4A) with a molybdenum content > 2 %, e.g. 1.4571 or 1.4404, in accordance with EN 62561-2, IEC/EN 62305-3, DIN 18014 and DIN VDE 0151.

General technical data:	
Standard	based on EN 62561-2
Length tolerance	+/- 5%

Type RD ...	8 V2A R125M	10 V2A R20M
Part No.	860 908	860 920
Diameter Ø conductor	8 mm	10 mm
Cross-section	50 mm²	78 mm²
Material	StSt	StSt
Material No.	1.4301 / 1.4303	1.4301 / 1.4303
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	1.9 kA	2.9 kA
Coil weight	approx. 50 kg	approx. 12 kg
PU	125 m	20 m

Type RD ...	10 V2A R50M	10 V2A R80M
Part No.	860 950	860 910
Diameter Ø conductor	10 mm	10 mm
Cross-section	78 mm²	78 mm²
Material	StSt	StSt
Material No.	1.4301 / 1.4303	1.4301 / 1.4303
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	2.9 kA	2.9 kA
Coil weight	approx. 31 kg	approx. 50 kg
PU	50 m	80 m

Type RD ...	8 V4A R125M	10 V4A R80M
Part No.	860 008	860 010
Diameter Ø conductor	8 mm	10 mm
Cross-section	50 mm²	78 mm²
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	1.9 kA	2.9 kA
Coil weight	approx. 50 kg	approx. 50 kg
PU	125 m	80 m

Type RD ...	10 V4A R20M	10 V4A R50M
Part No.	860 020	860 050
Diameter Ø conductor	10 mm	10 mm
Cross-section	78 mm²	78 mm²
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	2.9 kA	2.9 kA
Coil weight	approx. 12 kg	approx. 31 kg
PU	20 m	50 m

Copper-bonded steel wire



Copper-bonded steel round wires offer better conductivity than steel. With copper coating ≥ 250 µm on average. For use as an air-termination and down conductor, or for horizontal earth electrode.

General technical data:	
Material	St / Cu
Characteristics	torsion-soft
Standard	IEC 62561-2-2012, DL/T 131 2-2013
Cu sheath	≥ 0.25 mm
Length tolerance	+/- 5%

Type RD ...	8 STCU R100M	10 STCU R100M
Part No.	870 008	870 010
Diameter Ø conductor	8 mm	10 mm
Cross-section	50 mm²	78 mm²
Coil weight	approx. 40 kg	approx. 62 kg
PU	100 m	100 m

Type RD ...	13 ST CU R100M	14 ST CU R100M
Part No.	870 013	870 014
Diameter Ø conductor	13 mm	14 mm
Cross-section	133 mm²	150 mm²
Coil weight	approx. 106 kg	approx. 122 kg
PU	100 m	100 m

Type	16 ST CU R100M
Part No.	870 016
Diameter Ø conductor	16 mm
Cross-section	200 mm²
Coil weight	approx. 158 kg
PU	100 m

Note: DEHN copper coated round steel wire can be twisted or straightened with the wire straightening devices.

Steel wire with plastic sheath



With plastic sheath as additional mechanical / corrosion protection, e.g. when connected to the lightning protection system. Suitable for installation in soil, on, in and under plaster, mortar or concrete.

Type RD ...	8 KM STTZN R75M	10 KM STTZN R50M
Part No.	800 108	800 110
Diameter Ø conductor	8 mm	10 mm
Cross-section	50 mm²	78 mm²
Material	St/tZn	St/tZn
Standard	based on EN 62561-2	based on EN 62561-2
Outside diameter Ø	11 mm	13 mm
Material of sheath	plastic	plastic
Sheath thickness	1.5 mm	1.5 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.5 kA	5.5 kA
Coil weight	approx. 33 kg	approx. 34 kg
Length tolerance	+/- 5%	+/- 5%
PU	75 m	50 m

Cable material and Accessories

Steel wire

With zinc coating ≥ 50 µm on average (approx. 350 g/m²).



General technical data:	
Material	**St/tZn**
Standard	based on EN 62561-2
Length tolerance	+/- 5%

Type RD ...	8 STTZN R127M	8 STTZN R50M
Part No.	**800 008**	**800 028**
Diameter Ø conductor	8 mm	8 mm
Cross-section	50 mm²	50 mm²
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.5 kA	3.5 kA
Coil weight	approx. 50 kg	approx. 20 kg
PU	127 m	50 m

Type RD ...	10 STTZN R81M	10 STTZN R30M
Part No.	**800 010**	**800 310**
Diameter Ø conductor	10 mm	10 mm
Cross-section	78 mm²	78 mm²
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	5.5 kA	5.5 kA
Coil weight	approx. 50 kg	approx. 18.5 kg
PU	81 m	30 m

Steel wire, straightened, cut into bars

With zinc coating ≥ 50 µm on average (about 350 g/m²). Suitable for installation in reinforcements (e.g. concrete supports or concrete foundations).



General technical data:	
Diameter Ø conductor	10 mm
Cross-section	78 mm²
Material	**St/tZn**
Standard	based on EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	5.5 kA
Length tolerance	+/- 5%

Type RD ...	10 STTZN L1000	10 STTZN L2000
Part No.	**800 906**	**800 908**
Length	1 m	2 m
PU	10 pc(s)	10 pc(s)

Type RD ...	10 STTZN L3000	10 STTZN L6000
Part No.	**800 910**	**800 911**
Length	3 m	6 m
PU	10 pc(s)	1 pc(s)

Various Wire Straighteners can be found on page 225.



Marker for Connection Lugs

Attached to round wires or strips to make them conspicuous (as required by DIN 18014) during the construction work.



Type	SK RD10 FL30X3.5 GRGE PVC
Part No.	**478 099**
Material	**PVC**
Diameter Ø	70 mm
Fits on Fl	30 x 3.5 mm
Fits on Rd	10 mm
Colour	green ● / yellow ●
PU	20 pc(s)

Dripping Water Protective Collars

Prevents rain water from running down the round wire and soiling of the facade.



Type MS 37 4.7 B7.5 K ...	GR	BR
Part No.	**276 056**	**276 057**
Material	**plastic**	**plastic**
Conductor Rd	8 mm	8 mm
Colour	grey ●	brown ●
Diameter Ø	37 mm	37 mm
PU	100 pc(s)	1 pc(s)

Strips

According to EN 62561-2, for use in earth-termination and lightning protection systems as well as for ring equipotential bonding.



Strips in different dimensions and materials are available upon request.

Bare steel strip



Type	BA 50X4 ST R30M
Part No.	**810 503** NEW
Width	50 mm
Thickness	4 mm
Cross-section	200 mm²
Material	**St/bare (S235 JR)**
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	DIN EN 62561-2 (VDE 0185-561-2)
Guideline	Ril 997.0205A01
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	14 kA
Coil weight	approx. 50 kg
Length tolerance	+/- 5%
PU	30 m

HDG steel strip

Zinc coating ≥ 70 µm on average (approx. 500 g/m²).



General technical data:		
Material		St/tZn
Length tolerance		+/- 5%

Type BA ...	20X2.5 STTZN R100M	30X3.5 STTZN R50M
Part No.	810 225	810 335
Width	20 mm	30 mm
Thickness	2.5 mm	3.5 mm
Cross-section	50 mm²	105 mm²
Standard	based on EN 62561-2	EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.5 kA	7.4 kA
Coil weight	approx. 40 kg	approx. 42 kg
PU	100 m	50 m

Type BA ...	30X3.5 STTZN R25M	30X3.5 STTZN EASY R25M
Part No.	852 335	854 335
Width	30 mm	30 mm
Thickness	3.5 mm	3.5 mm
Cross-section	105 mm²	105 mm²
Standard	EN 62561-2	based on DIN EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	7.4 kA	7.4 kA
Coil weight	approx. 21 kg	approx. 21 kg
PU	25 m	25 m

Type BA ...	BA 30X3.5 STTZN EASY R50M	BA 30X4 STTZN R52M
Part No.	814 335	810 304
Width	30 mm	30 mm
Thickness	3.5 mm	4 mm
Cross-section	105 mm²	120 mm²
Standard	based on DIN EN 62561-2	EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	7.4 kA	8.4 kA
Coil weight	approx. 42 kg	approx. 50 kg
PU	50 m	52 m

Type BA ...	BA 40X4 STTZN R40M	BA 40X5 STTZN R30M
Part No.	810 404	810 405
Width	40 mm	40 mm
Thickness	4 mm	5 mm
Cross-section	160 mm²	200 mm²
Standard	EN 62561-2	EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	11.2 kA	14 kA
Coil weight	approx. 50 kg	approx. 50 kg
PU	40 m	30 m

Type BA ...	50X4 STTZN R30M
Part No.	810 504
Width	50 mm
Thickness	4 mm
Cross-section	200 mm²
Standard	EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	14 kA
Coil weight	approx. 50 kg
PU	30 m

Copper strip

Manufactured from high conductivity annealed copper (EN / BS EN 13601) for use in lightning protection and earthing systems.



General technical data:	
Material	Cu
Length tolerance	+/- 5%

Type	BA 20X2.5 CU R100M	TAPE 25X3 CU R50M
Part No.	831 225	128 010
Width	20 mm	25 mm
Thickness	2.5 mm	3 mm
Cross-section	50 mm²	75 mm²
Standard	EN 62561-2	IEC / EN IEC / BS EN IEC 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	9.7 kA	–
Coil weight	approx. 45 kg	approx. 33.5 kg
PU	100 m	50 m

Type	TAPE 25X4 CU R40M	TAPE 25X6 CU R40M
Part No.	128 011	128 012
Width	25 mm	25 mm
Thickness	4 mm	6 mm
Cross-section	100 mm²	150 mm²
Standard	IEC / EN IEC / BS EN IEC 62561-2	IEC / EN IEC / BS EN IEC 62561-2
PU	40 m	40 m

Type	TAPE 30X2 CU R40M	TAPE 30X2.5 CU R40M
Part No.	128 018	128 019
Width	30 mm	30 mm
Thickness	2 mm	2.5 mm
Cross-section	60 mm²	75 mm²
Standard	IEC / EN IEC / BS EN IEC 62561-2	IEC / EN IEC / BS EN IEC 62561-2
PU	40 m	40 m

Type	TAPE 30X5 CU R30M	TAPE 31X6 CU R30M
Part No.	128 021	128 013
Width	30 mm	31 mm
Thickness	5 mm	6 mm
Cross-section	150 mm²	186 mm²
Standard	IEC / EN IEC / BS EN IEC 62561-2	IEC / EN IEC / BS EN IEC 62561-2
PU	30 m	30 m

Type	TAPE 40X3 CU R20M	TAPE 40X5 CU R20M
Part No.	128 022	128 023
Width	40 mm	40 mm
Thickness	3 mm	5 mm
Cross-section	120 mm²	200 mm²
Standard	IEC / EN IEC / BS EN IEC 62561-2	IEC / EN IEC / BS EN IEC 62561-2
PU	20 m	20 m

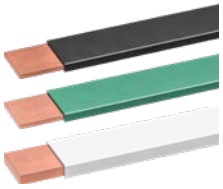
Type	TAPE 40X6 CU R20M	TAPE 50X3 CU R20M
Part No.	128 024	128 016
Width	40 mm	50 mm
Thickness	6 mm	3 mm
Cross-section	240 mm²	150 mm²
Standard	IEC / EN IEC / BS EN IEC 62561-2	IEC / EN IEC / BS EN IEC 62561-2
PU	20 m	20 m

Type	TAPE 50X4 CU R20M	TAPE 50X6 CU R20M
Part No.	128 230	128 235
Width	50 mm	50 mm
Thickness	4 mm	6 mm
Cross-section	200 mm²	300 mm²
Standard	IEC / EN IEC / BS EN IEC 62561-2	IEC / EN IEC / BS EN IEC 62561-2
PU	20 m	20 m

Cable material and Accessories

PVC covered copper strip

PVC covered copper tapes. Manufactured from high conductivity annealed copper (EN / BS EN 13601), for use in lightning protection and earthing systems.



General technical data:	
Material	Cu
Standard	IEC / EN IEC / BS EN IEC 62561-2
Covering thickness	1 mm
Length tolerance	+/- 5%

Type	TAPE 25X3 CU PVC WHITE R50M	TAPE 25X3 CU PVC BROWN R50M
Part No.	128 036	128 031
Width	25 mm	25 mm
Thickness	3 mm	3 mm
Cross-section	75 mm²	75 mm²
Type	White	Brown
PU	50 m	50 m

Type	TAPE 25X3 CU PVC STONE R50M	TAPE 25X3 CU PVC GREEN R50M
Part No.	128 035	128 032
Width	25 mm	25 mm
Thickness	3 mm	3 mm
Cross-section	75 mm²	75 mm²
Type	Stone	Green
PU	50 m	50 m

Type	TAPE 25X3 CU PVC BLACK R50M	TAPE 25X3 CU PVC GREY R50M
Part No.	128 030	128 034
Width	25 mm	25 mm
Thickness	3 mm	3 mm
Cross-section	75 mm²	75 mm²
Type	Black	Grey
PU	50 m	50 m

Type	TAPE 25X6 CU PVC WHITE R40M	TAPE 25X6 CU PVC GREY R40M
Part No.	128 080	128 081
Width	25 mm	25 mm
Thickness	6 mm	6 mm
Cross-section	150 mm²	150 mm²
Type	White	Grey
PU	40 m	40 m

Type	TAPE 25X6 CU PVC GREEN R40M	TAPE 31X6 CU PVC WHITE R30M
Part No.	128 085	128 090
Width	25 mm	31 mm
Thickness	6 mm	6 mm
Cross-section	150 mm²	186 mm²
Type	Green	White
PU	40 m	30 m

Type	TAPE 31X6 CU PVC GREEN R30M	TAPE 31X6 CU PVC STONE R30M
Part No.	128 095	128 094
Width	31 mm	31 mm
Thickness	6 mm	6 mm
Cross-section	186 mm²	186 mm²
Type	Green	Stone
PU	30 m	30 m

Type	TAPE 50X3 CU PVC GREEN R20M	TAPE 50X6 CU PVC GREEN R20M
Part No.	128 105	128 115
Width	50 mm	50 mm
Thickness	3 mm	6 mm
Cross-section	150 mm²	300 mm²
Type	Green	Green
PU	20 m	20 m

Tinned copper strip

Manufactured from high conductivity annealed copper (EN / BS EN 13601) with a Tin coating, for use in lightning protection and earth termination systems.



General technical data:	
Material	Cu / gal Sn
Standard	IEC / EN IEC / BS EN IEC 62561-2
Length tolerance	+/- 5%

Type TAPE ...	25X3 SNCU R50M	25X4 SNCU R50M
Part No.	128 250	128 251
Width	25 mm	25 mm
Thickness	3 mm	4 mm
Cross-section	75 mm²	100 mm²
PU	50 m	50 m

Type TAPE ...	25X6 SNCU R40M	40X6 SNCU R20M
Part No.	128 252	128 253
Width	25 mm	40 mm
Thickness	6 mm	6 mm
Cross-section	150 mm²	240 mm²
PU	40 m	20 m

Type TAPE ...	50X3 SNCU R20M	50X4 SNCU R20M	50X6 SNCU R20M
Part No.	128 254	128 255	128 256
Width	50 mm	50 mm	50 mm
Thickness	3 mm	4 mm	6 mm
Cross-section	150 mm²	200 mm²	300 mm²
PU	20 m	20 m	20 m

Stainless steel strip



General technical data:	
Standard	EN 62561-2
Length tolerance	+/- 5%

Type	BA 30X3.5 V2A R25M	BA 30X3.5 V2A R60M
Part No.	860 925	860 900
Width	30 mm	30 mm
Thickness	3.5 mm	3.5 mm
Cross-section	105 mm²	105 mm²
Material	StSt	StSt
Material No.	1.4301 / 1.4303	1.4301 / 1.4303
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.9 kA	3.9 kA
Coil weight	approx. 21 kg	approx. 49 kg
PU	25 m	60 m

Type	BA 30X3.5 V4A R25M	BA 30X3.5 V4A R60M
Part No.	860 325	860 335
Width	30 mm	30 mm
Thickness	3.5 mm	3.5 mm
Cross-section	105 mm²	105 mm²
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.9 kA	3.9 kA
Coil weight	approx. 21 kg	approx. 49 kg
PU	25 m	60 m

Type	BA 40X4 V4A R40M	BA 40X5 V4A R30M
Part No.	860 404	860 405
Width	40 mm	40 mm
Thickness	4 mm	5 mm
Cross-section	160 mm²	200 mm²
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	6 kA	7.4 kA
Coil weight	approx. 50 kg	approx. 50 kg
PU	40 m	30 m

Cables

For use in lightning protection and earth-termination systems.

Aluminium cable

e.g. for isolated air-termination systems (DEHNiso Combi).



Type SEIL ...	9 50Ω AL R100M
Part No.	**840 050**
Cross-section	50 mm²
Cable structure qty x Ø wire	19 x 1.8 mm
Material	Al
Standard	EN 62561-2
Outside diameter Ø	9 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	6.4 kA
Coil weight	approx. 13.5 kg
Length tolerance	+/- 5%
PU	100 m

Note: Al must not be installed directly (without distance) on, in or under plaster, mortar or concrete, and not in soil.

Stainless steel cable

e.g. for equipotential bonding.



Type SEIL ...	8 V4A R100M	10 V4A R100M
Part No.	**850 008**	**850 010**
Cross-section	27 mm²	42 mm²
Cable structure qty x Ø wire	[7x] 19 x ca. 0.59 mm	[7x] 19 x ca. 0.68 mm
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
Outside diameter Ø	8 mm	10 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	1 kA	1.5 kA
Coil weight	approx. 23.5 kg	approx. 39.5 kg
Length tolerance	+/- 5%	+/- 5%
PU	100 m	100 m

Steel cable



Type SEIL ...	10 STGALZN R100M
Part No.	**801 050**
Cross-section	42 mm²
Cable structure qty x Ø wire	[6x] 19 x 0.65 mm
Material	St/gal Zn
Outside diameter Ø	10 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	3 kA
Coil weight	approx. 33 kg
Length tolerance	+/- 5%
PU	100 m

Cables in different dimensions and materials are available upon request.

Copper cable



General technical data:	
Material	Cu
Standard	EN 62561-2
Length tolerance	+/- 5%

Type SEIL ...	9 50Ω CU R50M	9 50Ω CU R100M
Part No.	**832 739**	**832 740**
Cross-section	50 mm²	50 mm²
Cable structure qty x Ø wire	19 x 1.8 mm	19 x 1.8 mm
Outside diameter Ø	9 mm	9 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	9.7 kA	9.7 kA
Coil weight	approx. 22 kg	approx. 44 kg
PU	50 m	100 m

Type SEIL ...	10.5 70Ω CU R50M	12.5 95Ω CU R50M
Part No.	**832 192**	**832 095**
Cross-section	70 mm²	95 mm²
Cable structure qty x Ø wire	19 x 2.1 mm	19 x 2.5 mm
Outside diameter Ø	10.5 mm	12.5 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	13.6 kA	18.5 kA
Coil weight	approx. 30 kg	approx. 42 kg
PU	50 m	50 m

Type SEIL ...	14.5 120Ω CU R25M
Part No.	**832 120**
Cross-section	120 mm²
Cable structure qty x Ø wire	19 x 2.8 mm
Outside diameter Ø	14.5 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	23.4 kA
Coil weight	approx. 53 kg
PU	25 m

Tinned copper cable



General technical data:	
Material	Cu/gal Sn
Length tolerance	+/- 5%

Type SEIL ...	7.5 CUGALSN 35Ω R100M	9 50Ω CUGALSN R100M
Part No.	**832 838**	**832 839**
Cross-section	35 mm²	50 mm²
Cable structure qty x Ø wire	7 x 2.5 mm	19 x 1.8 mm
Standard	–	EN 62561-2
Outside diameter Ø	7.5 mm	9 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 150 °C)	5 kA	7.2 kA
Coil weight	approx. 33 kg	approx. 44 kg
PU	100 m	100 m

Type SEIL ...	10.5 70Ω CUGALSN R50M	12.5 95Ω CUGALSN R50M
Part No.	**832 202**	**832 295**
Cross-section	70 mm²	95 mm²
Cable structure qty x Ø wire	19 x 2.1 mm	19 x 2.5 mm
Standard	EN 62561-2	EN 62561-2
Outside diameter Ø	10.5 mm	12.5 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 150 °C)	10.1 kA	13.7 kA
Coil weight	approx. 30 kg	approx. 42 kg
PU	50 m	50 m

Type SEIL ...	14.5 120Ω CUGALSN R25M
Part No.	**832 320**
Cross-section	120 mm²
Cable structure qty x Ø wire	19 x 2.8 mm
Standard	EN 62561-2
Outside diameter Ø	14.5 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 150 °C)	17.4 kA
Coil weight	approx. 53 kg
PU	25 m

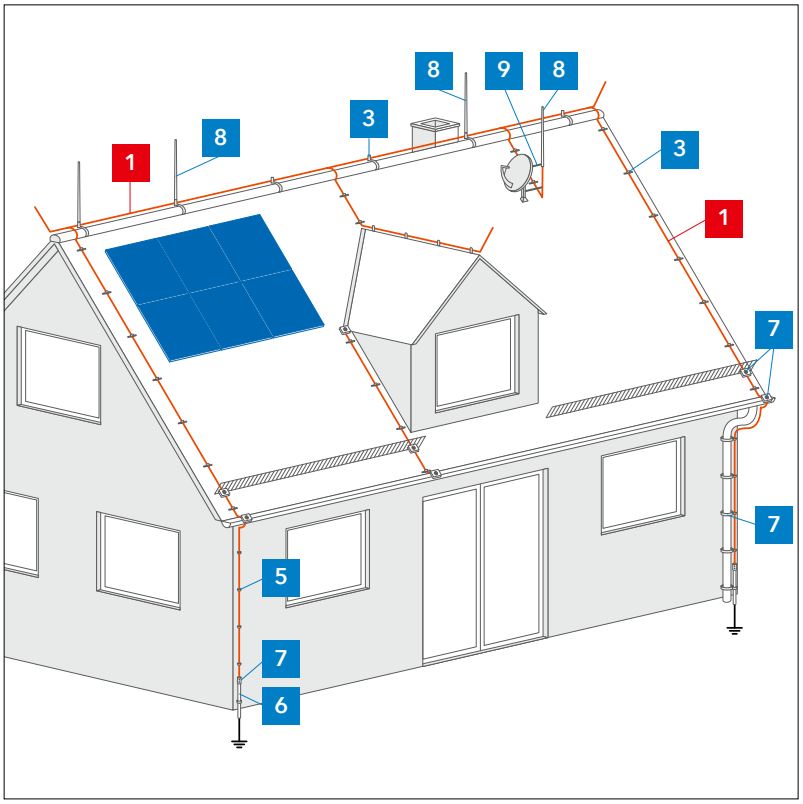


External Lightning Protection

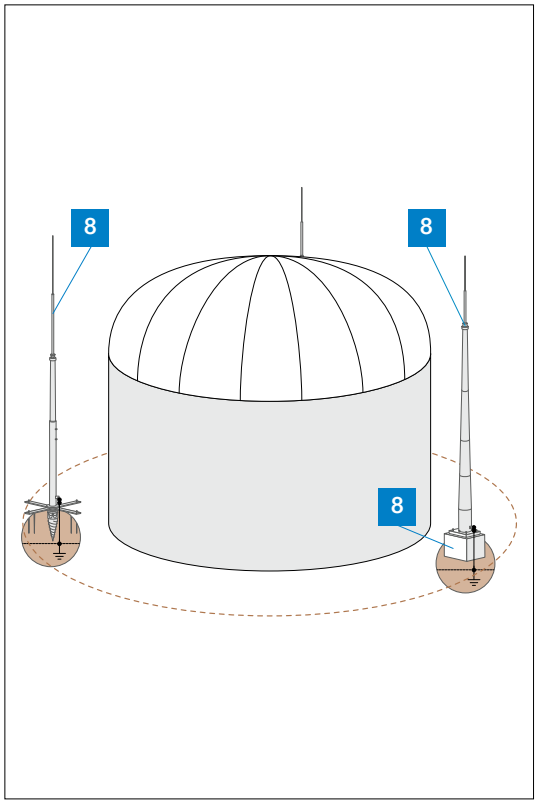
Discover our portfolio
External lightning protection:
https://de.hn/5iet3

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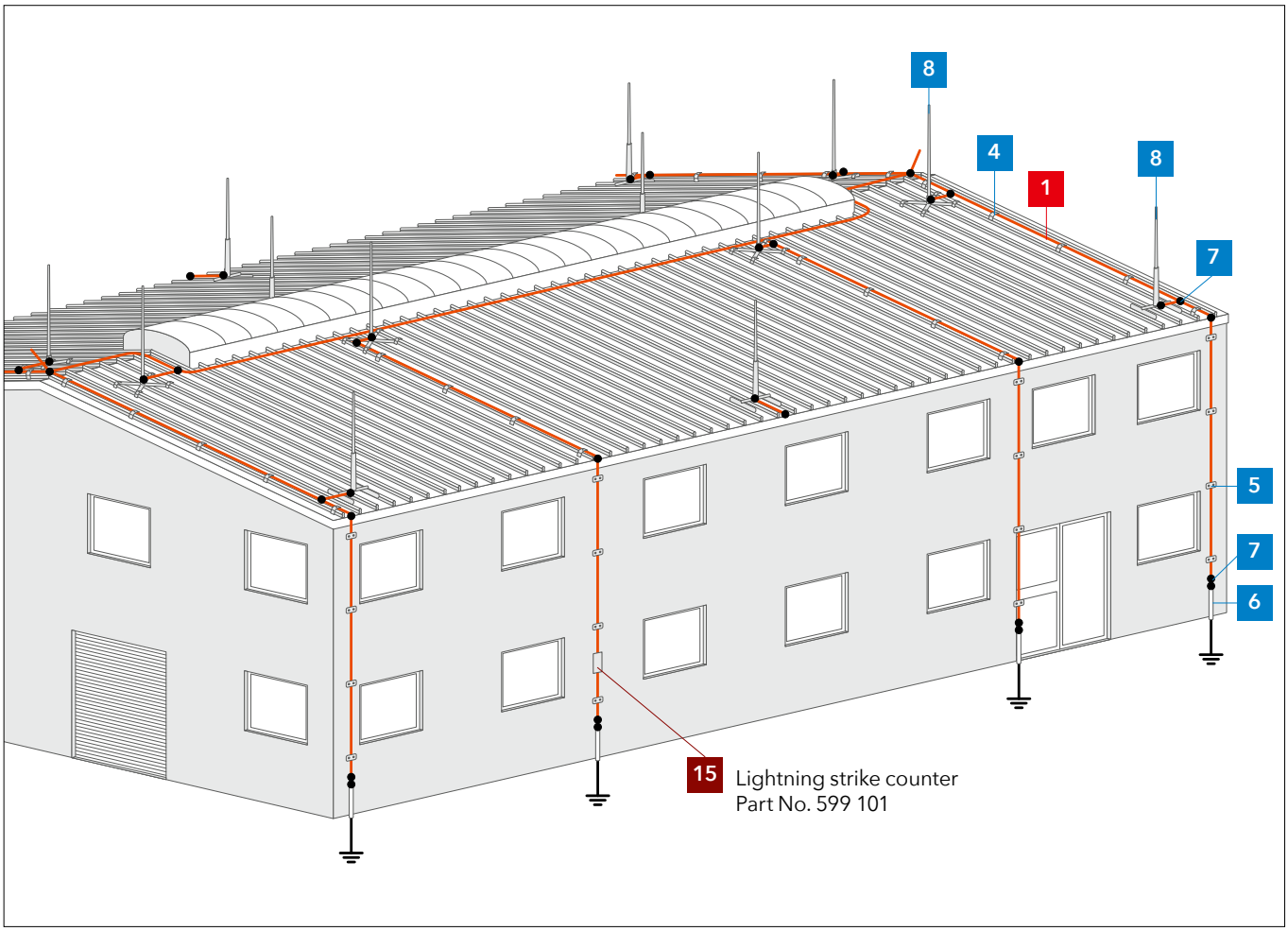
External lightning protection of a residential building



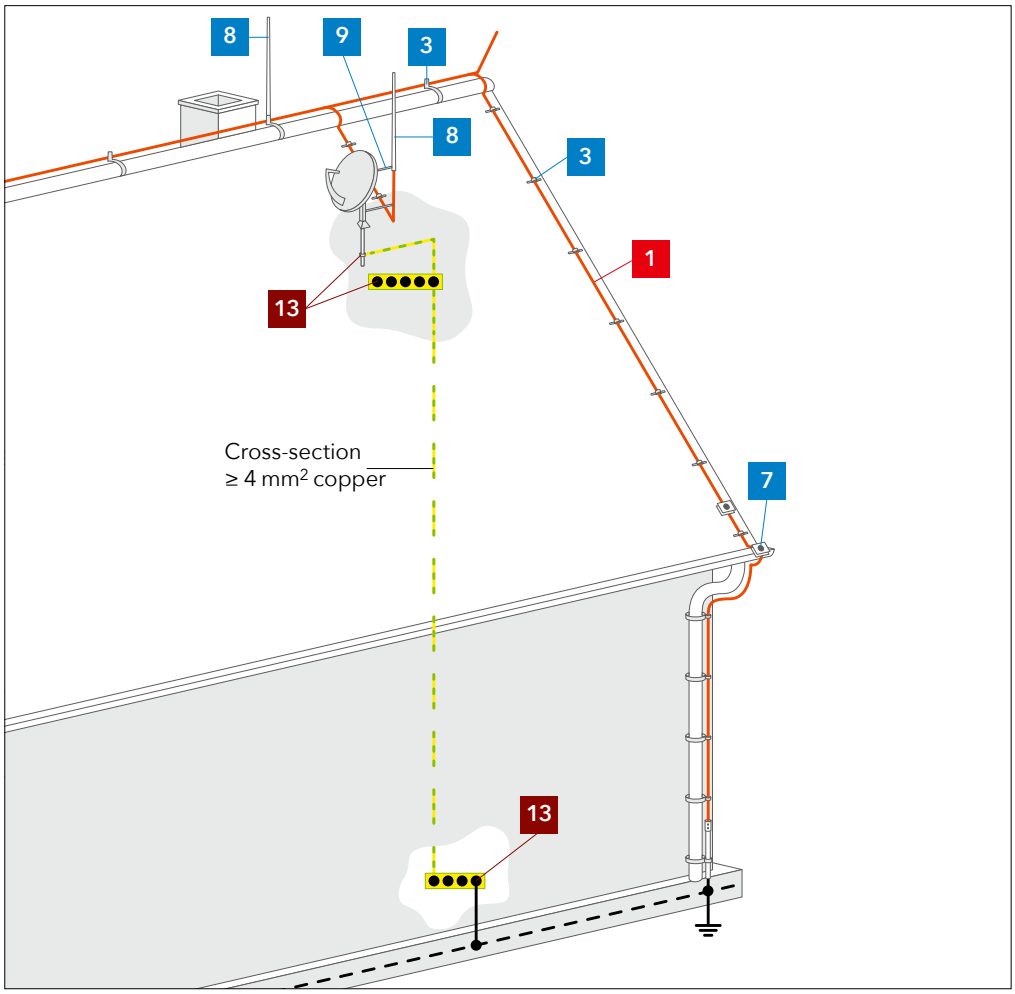
... of a gas container



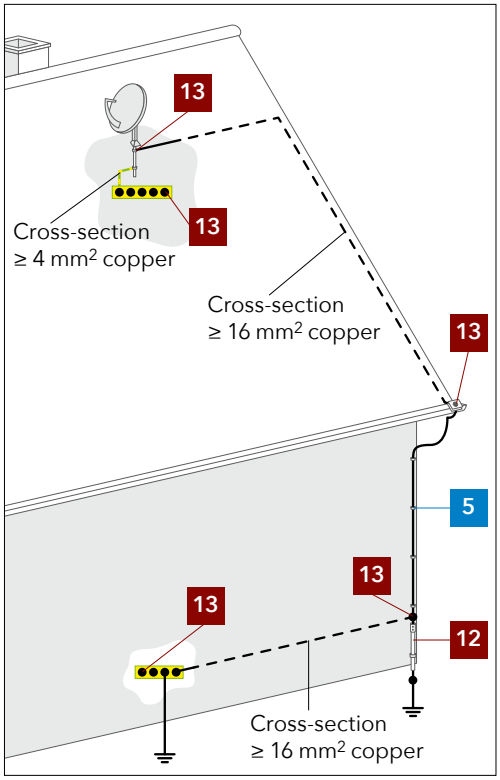
External lightning protection of an industrial building with a metal roof



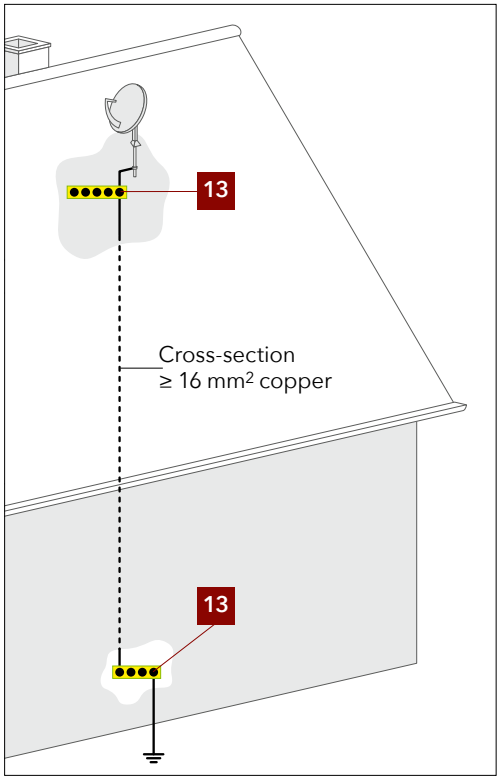
Protection of an antenna system in case of an existing lightning protection system in accordance with IEC 60728-11



Equipotential bonding under the roofing without a lightning protection system



Equipotential bonding inside a building without a lightning protection system



Product

1


2


3


4


5


6


7


8


9




Roof Conductor Holders for Flat Roofs

Roof conductor holders for attaching round conductors and strips (with adapter) to flat roofs.

- Conductor holder with weather-resistant plastic support plate, UV-stabilised and halogen-free
- Frost-resistant concrete block in accordance with EN 1338 for paving stones, frost resistance tested according to EN 1340 (frost/dew test)
- Concrete block and base part are recycled separately

Type FB2, with two conductor supports



Type DLH ...	FB2 8 LO 141X86X70	FB2 8 FE 141X86X70
Part No.	**253 050**	**253 060**
Conductor routing	loose	fixed
Material of conductor holder	**plastic**	**plastic**
Colour of conductor holder	black ●	black ●
Conductor support Rd	8 mm	8 mm
Weight	1 kg	1 kg
Block	**concrete (C35/45)**	**concrete (C35/45)**
Dimensions	141 x 86 x 70 mm	141 x 86 x 70 mm
PU	10 pc(s)	10 pc(s)

Type KF2, with two conductor supports

Clamped into roof sheeting strips (up to 5 mm thick) which are welded with or adhere to the roof sheeting.



Type DLH ...	KF2 8 LO 141X86X70
Part No.	**253 051**
Conductor routing	loose
Material of conductor holder	**plastic**
Colour of conductor holder	black ●
Conductor support Rd	8 mm
Dimensions	141 x 86 x 70 mm
PU	100 pc(s)

Type FB, with one conductor support



Type DLH ...	FB 8 LO 100X100X70
Part No.	**253 015**
Conductor routing	loose
Material of conductor holder	**plastic**
Colour of conductor holder	black ●
Conductor support Rd	8 mm
Weight	1 kg
Block	**concrete (C35/45)**
Dimensions	100 x 100 x 70 mm
PU	10 pc(s)

Type KF, with one conductor support

Clamped into roof sheeting strips (up to 2.5 mm thick) which are welded with or adhere to the roof sheeting.



Type DLH ...	KF 8 LO DBS 110X100X70 SW
Part No.	**253 030**
Conductor routing	loose
Material of conductor holder	**plastic**
Colour of conductor holder	black ●
Conductor support Rd	8 mm
Dimensions	110 x 100 x 75 mm
PU	100 pc(s)

Separate plastic upper part for type KF (Part No. 253 016) is available upon request.

With one conductor support

Roof conductor holder set for weighing down the down conductor on metal and flat roofs.



Type DLH ...	8.10 KS BES180 GP300 K
Part No.	**253 335**
Conductor routing	loose
Material of conductor holder	**plastic**
Colour of conductor holder	grey ●
Conductor support Rd	8-10 mm
Weight	4.6 kg
Block	**concrete (C35/45)**
Dimensions	300 x 300 x 84 mm
PU	24 pc(s)

Accessories for Roof Conductor Holders for Flat Roofs

Adapter for round conductors for type FB and KF



Snapped onto roof conductor holders for conductors Rd 10 mm, loose conductor routing.
Adapter for conductors Rd 6 mm (Part No. 253 022) is available upon request.

Type	RLA 10 FB KF K SW
Part No.	**253 023**
Conductor support Rd	10 mm
Material	**plastic**
Colour	black ●
PU	50 pc(s)

Adapter for flat conductors for type FB and KF



Snapped onto roof conductor holders (Part No. 253 015) for flat conductors 30 mm, loose conductor leading.

Type	FLA30 FB KF K SW
Part No.	**253 021**
Conductor support Fl	30 mm
Material	**plastic**
Colour	black ●
PU	50 pc(s)

Cap for type FB and KF



Snapped onto roof conductor holders (Part No. 253 015) to better secure air-termination conductors installed on slanted roofs.

Type	KLA 8 FB KF K SW
Part No.	**253 025**
Conductor support Rd	8 mm
Material	**plastic**
Colour	black ●
PU	50 pc(s)

Clip for type FB2



Clip for snapping onto the roof conductor holder (part no. 253 050, 253 060), for additional fixing of the holder to the installed air-termination conductor on pitched roofs.

Type	KLA 8 FB2 V2A
Part No.	**253 029**
Conductor support Rd	8 mm
Material	StSt
Conductor routing	fixed
PU	100 pc(s)



Type	LH 8.10 LO KS RA
Part No.	**253 303** NEU
Ausführung	UV-stabilisiert und witterungsbeständig
Leitungsführung	lose
Werkstoff Leitungshalter	**Kunststoff**
Farbe Leitungshalter	grau ●
Leitungshalter Aufnahme Rd	8-10 mm
Bauhöhe Leitungshalter	78 mm
VPE	24 Stk.

Roof Conductor Holders for Flat Roofs with Fixing Holes

For installing air-termination systems on flat roofs and walls.

Type St/tZn, large



With conductor holder DEHNQUICK, fixed conductor routing, height up to the centre of the conductor of 60 mm.

Type	DLH DQ 6.10 GP100X100 STTZN
Part No.	**202 060**
Material of roof conductor holder	**St/tZn**
Dimensions	100 x 100 mm
Fixing	[4x] Ø4 / [4x] Ø10 mm
Material of conductor holder	**St/tZn**
Conductor support Rd	6-10 mm
PU	1 pc(s)

Type St/tZn, small



With conductor holder DEHNQUICK, fixed conductor routing, height up to the centre of the conductor of 60 mm.

Type	DLH DQ 6.10 GP50X60 STTZN
Part No.	**202 030**
Material of roof conductor holder	**St/tZn**
Dimensions	50 x 60 mm
Fixing	[4x] Ø5.2 mm
Material of conductor holder	**St/tZn**
Conductor support Rd	6-10 mm
PU	50 pc(s)

Round fixing plate, St/tZn, large



Plate with threaded bolt M8, e.g. for DEHNsnap or DEHNhold for use on, e.g. roofing felt, concrete, steel and brickwork.

Type	BP D100 GBM8 4XB10 4XB4 STTZN
Part No.	**297 015**
Material of roof conductor holder	**St/tZn**
Dimensions	approx. Ø100 mm
Fixing	[4x] Ø4 / [4x] Ø10 mm
PU	25 pc(s)

Round fixing plate, plastic, small



Plate with threaded bolt M8, e.g. for DEHNsnap or DEHNhold for use on, e.g. roofing felt, concrete, steel and brickwork.

Type	BP D40 GBM8 4XB4 K GR
Part No.	**297 025**
Material of roof conductor holder	**plastic**
Colour	grey ●
Dimensions	Ø40 mm
Fixing	[4x] Ø4 mm
PU	100 pc(s)

Roof Bushings

For leading down conductors through roofs and for sealing roofs.

For flat roofs



The max. processing temperature of +110 °C has to be observed during installation.
In case of connection heights exceeding 100 mm, the roof bushing and conductor have to be wrapped in a self-adhesive universal sealing tape (aluminium fixing tape).

Type DDF ...	8 10 16 FL20.30 D250 K
Part No.	**552 030**
Material	**plastic**
Colour	black ●
Bushing Rd	8 / 10 / 16 mm
Bushing Fl	20 x 2.5 / 30 x 3.5 mm
Diameter Ø	250 mm
PU	25 pc(s)

For tile and corrugated sheet roofs



Type DDF ...	8.10 D34 B16 K
Part No.	**552 010**
Hole	Ø16 mm
Material	**plastic**
Colour	black ●
Bushing Rd	8-10 mm
Diameter Ø	34 mm
PU	25 pc(s)

Expansion Pieces

For temperature-related length compensation of long conductors (provided that the conductor routing in the holders is loose).

Round design

For connection e.g. with MV clamp (Part No. 390 051).



Type DS ...	8 L395 AL
Part No.	**374 011**
Material	Al
Dimensions	Ø8 mm
Length	approx. 395 mm
Standard	EN 62561-2
PU	25 pc(s)

Flat design

For connection e.g. with KS connector (Part No. 301 000).
Note: At cross points two expansion pieces can be connected with one M10 x 20 mm screw and nut.



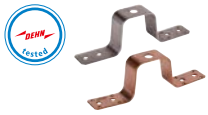
Type DS ...	30X2 L170 3XB11 AL
Part No.	**374 020**
Material	Al
Dimensions	30 x 2 mm
Length	170 mm
Fixing	[2x] Ø11 mm
Central hole	Ø11 mm
Standard	based on DIN EN 62561-2
PU	50 pc(s)

Bridging Brackets

For connection (riveting or screwing) of metal cladding.

Application note:
According to DIN EN 62305-3 Suppl. 1, four rivets Ø5 mm shall be used to connect material of ≥ 0.5 mm thickness, or two StSt self-tapping screws Ø6.3 mm (one on each side) for material of ≥ 2 mm thickness.

Short design with middle hole



Type UEBL ...	L170 B11 B5.2 6.5 AL	L170 B11 B5.2 6.5 CU
Part No.	**377 006**	**377 027**
Material	Al	Cu
Dimensions	30 x 2 mm	28 x 2 mm
Length	170 mm	170 mm
Fixing	[8x] Ø5.2 / [4x] Ø6.5 mm	[8x] Ø5.2 / [4x] Ø6.5 mm
Middle hole	Ø11 mm	Ø11 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

Short design without middle hole



Type UEBL ...	L170 B5.2 6.5 AL
Part No.	**377 016**
Material	Al
Dimensions	30 x 2 mm
Length	170 mm
Fixing	[8x] Ø5.2 / [4x] Ø6.5 mm
Standard	EN 62561-1
PU	50 pc(s)

Long design with middle hole



Type UEBL ...	L220 B11 B5.2 6.5 AL
Part No.	**377 026**
Material	Al
Dimensions	30 x 2 mm
Length	220 mm
Fixing	[8x] Ø5.2 / [4x] Ø6.5 mm
Middle hole	Ø11 mm
Standard	EN 62561-1
PU	50 pc(s)

Bridging brackets with middle hole may be combined with KS connectors (e. g. Part No. 301 019).

Bridging Braids

Suitable for connecting metal claddings (riveting or screwing) as an expansion compensation piece for round wires; or as compensation for certain temperature-related changes in length for round wires; Connection e.g. with KS connector part no. 301 019

Application note:
According to DIN EN 62305-3 Suppl. 1, four rivets Ø5 mm shall be used to connect material of ≥ 0.5 mm thickness, or two StSt tapping screws Ø6.3 mm (one on each side) for material of ≥ 2 mm thickness.

Short design



Type UEBB ...	L180 B10.5 B5.2 AL	L180 B10.5 B5.2 CU
Part No.	**377 015**	**377 007**
Material	Al	Cu
Length (l_G)	180 mm	180 mm
Cross-section	50 mm²	50 mm²
Fixing	[8x] Ø5.2 / [2x] Ø10.5 mm	[8x] Ø5.2 / [2x] Ø10.5 mm
Fixing possibility	blind rivets / screws	blind rivets / screws
Standard	EN 62561-1	EN 62561-1
PU	10 pc(s)	10 pc(s)

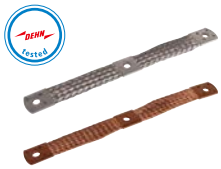
Short design, fixed with drilling screws



Type UEBB ...	L180 B10.5 B6.5 AL
Part No.	**377 045**
Material	Al
Length (l_G)	180 mm
Cross-section	50 mm²
Fixing	[4x] Ø6.5 / [2x] Ø10.5 mm
Fixing possibility	drilling screws / screws
Standard	EN 62561-1
PU	100 pc(s)

Long design, with middle hole

Note: At cross points, two bridging braids can be connected with a M10 x 20 mm screw and nut.



Type UEBB ...	L300 3XB10.5 B5,2 AL	L300 3XB10.5 B5.2 CU
Part No.	**377 115**	**377 107**
Material	Al	Cu
Length (l_G)	300 mm	300 mm
Cross-section	50 mm²	50 mm²
Fixing	[8x] Ø5.2 / [3x] Ø10.5 mm	[8x] Ø5.2 / [3x] Ø10.5 mm
Central hole Ø	10.5 mm	10.5 mm
Fixing possibility	blind rivets / screws	blind rivets / screws
Standard	EN 62561-1	EN 62561-1
PU	10 pc(s)	10 pc(s)

Bridging Cables

Suitable for connecting / bridging metal claddings, or as compensation for certain temperature-related changes in length for round wires; connection e.g. with KS connector part no. 301 019.
For connecting/bridging fixed earthing terminals. Suitable for protective and functional equipotential bonding.

Configurable lengths Outdoor

For use in outdoor areas with UV-stabilised conductor (H01N2-D)
Specify cable length when ordering (50 mm steps)



General technical data:		
Material of cable lug		Cu/gal (Ni)Sn
Material of cable		Cu
Cable		H01N2-D
Fixing		[2x] Ø10.5 mm
Insulation		PVC black
Standard		EN 62561-1

Type UEBS ...	16 L... B10.5 CU SW OD	25 L... B10.5 CU SW OD
Part No.	377 316	377 325
Length (l1)	200 - 1500 mm *)	200 - 1500 mm *)
Cross-section	16 mm²	25 mm²
PU	1 pc(s)	1 pc(s)

Type UEBS ...	35 L... B10.5 CU SW OD	50 L... B10.5 CU SW OD
Part No.	377 335	377 350
Length (l1)	200 - 1500 mm *)	350 - 1500 mm *)
Cross-section	35 mm²	50 mm²
PU	1 pc(s)	1 pc(s)

Type UEBS ...	70 L... B10.5 CU SW OD
Part No.	377 370
Length (l1)	350 - 1500 mm *)
Cross-section	70 mm²
PU	1 pc(s)

*) Specify cable length when ordering (50 mm steps)

Standard lengths

Suitable for use outdoors



General technical data:		
Material of cable lug		Al
Material of cable		Cu
Cross-section		16 mm²
Fixing		[4x] Ø6.5 / [2x] Ø10.5 mm
Insulation		rubber EM5 black
Standard		EN 62561-1

Type UEBS ...	16 L200 B10.5 B6.5 AL CU	16 L300 B10.5 B6.5 AL CU
Part No.	377 210	377 310
Length (l1)	200 mm	300 mm
PU	10 pc(s)	100 pc(s)

Type UEBS ...	16 L400 B10.5 B6.5 AL CU	16 L500 B10.5 B6.5 AL CU
Part No.	377 410	377 510
Length (l1)	400 mm	500 mm
PU	10 pc(s)	10 pc(s)

Configurable lengths Indoor

For use indoors (H07V-K)
Specify cable length when ordering (50 mm steps)



General technical data:		
Material of cable lug		Cu/gal (Ni)Sn
Material of cable		Cu
Cable		H07V-K
Fixing		[2x] Ø10.5 mm
Standard		EN 62561-1

Type UEBS ...	16 L... B10.5 CU SW ID	16 L... B10.5 CU GNGE ID
Part No.	377 216	377 217
Length (l1)	200 - 1500 mm *)	200 - 1500 mm *)
Cross-section	16 mm²	16 mm²
Insulation	PVC black	PVC green / yellow
PU	1 pc(s)	1 pc(s)

Type UEBS ...	25 L... B10.5 CU SW ID	25 L... B10.5 CU GNGE ID
Part No.	377 225	377 226
Length (l1)	200 - 1500 mm *)	200 - 1500 mm *)
Cross-section	25 mm²	25 mm²
Insulation	PVC black	PVC green / yellow
PU	1 pc(s)	1 pc(s)

Type UEBS ...	35 L... B10.5 CU SW ID	35 L... B10.5 CU GNGE ID
Part No.	377 235	377 236
Length (l1)	200 - 1500 mm *)	200 - 1500 mm *)
Cross-section	35 mm²	35 mm²
Insulation	PVC black	PVC green / yellow
PU	1 pc(s)	1 pc(s)

Type UEBS ...	50 L... B10.5 CU SW ID	50 L... B10.5 CU GNGE ID
Part No.	377 250	377 251
Length (l1)	350 - 1500 mm *)	350 - 1500 mm *)
Cross-section	50 mm²	50 mm²
Insulation	PVC black	PVC green / yellow
PU	1 pc(s)	1 pc(s)

Type UEBS ...	70 L... B10.5 CU SW ID	70 L... B10.5 CU GNGE ID
Part No.	377 270	377 271
Length (l1)	350 - 1500 mm *)	350 - 1500 mm *)
Cross-section	70 mm²	70 mm²
Insulation	PVC black	PVC green / yellow
PU	1 pc(s)	1 pc(s)

*) Specify cable length when ordering (50 mm steps)

Drilling Screw

Self-tapping with hexagon head and collar, for connecting bridging brackets, braids or cables, e.g. to the metal capping of the roof parapet (for materials of ≥ 2 mm thickness).



Type	BSC 6.3X19 SW10 V2A
Part No.	528 619
Material	StSt
Dimensions	6.3 x 19 mm
Head	width across flats 10
Standard	DIN 7504
PU	1 pc(s)

Blind Rivet

With StSt pin for connecting bridging brackets, braids or cables, according to DIN EN 62305-3 Suppl. 1.



Type	BN 5X10 AL V2A
Part No.	**528 610**
Material	Al / StSt
Head	Ø5 mm
Length	10 mm
Standard	similar to EN15979 (DIN 7337)
PU	500 pc(s)

Bridging Cable with Seam Clamps

For connecting or bridging metal cladding (e.g. parts of the capping of the roof parapet) without drilling

- With one clamping plate each, e.g. for connection to the air-termination system and erection of air-termination tips (Rd 8-10 mm)
- For the seams of the capping of the roof parapet with an angle of 0-45° and a max. length up to 18 mm

Your benefit: The design avoids soiling by drilling chips!



Type	UEBS 16 L400 CU FK0.7 10 V2A
Part No.	**365 419**
Clamping range of seam	0.7-10 mm
Material of seam clamps	StSt
Length	200 mm
Material of cable	Cu
Cross-section	16 mm²
Standard	EN 62561-1
PU	5 pc(s)

Connection Kit for Safety Rope System

System for connecting the safety rope systems on roofs with the air-termination system; with pre-mounted connection lug for the safety rope and clamping frame.

Rope diameter 6 mm



Type ASSA ...	D6 L1000 6.10 CU V2A
Part No.	**365 509**
Clamping range of connection lug	Ø6 mm
Rope structure	7 x 7 / 7 x 19 mm
Terminal lug material	StSt
Clamping piece support Rd	6-10 mm
Length	1000 mm
Material of rope	Cu
Cross-section	16 mm²
Temperature range	-40 °C ... +80 °C
Insulation	rubber EM5 black
PU	1 pc(s)

Rope diameter 8 mm



Type ASSA ...	D8 L1000 6.10 CU V2A
Part No.	**365 519**
Clamping range of connection lug	Ø8 mm
Rope structure	7 x 7 / 7 x 19 mm
Terminal lug material	StSt
Clamping piece support Rd	6-10 mm
Length	1000 mm
Material of rope	Cu
Cross-section	16 mm²
Temperature range	-40 °C ... +80 °C
Insulation	rubber EM5 black
Standard	EN 62561-1
PU	1 pc(s)



Roof Conductor Holders with Tension Spring for Ridge and Hip Tiles

For fixing air-termination conductors on the ridge, e.g. of tile roofs.

SPANNsnap light

Fixed with a StSt tension spring, with conductor holder DEHNsnap, loose conductor routing, laterally adjustable.



Type DLH ...	SSL 8 H16 FG180.280 GR V2A	SSL 8 H36 FG180.280 GR V2A
Part No.	**204 469**	**204 449**
Material of roof conductor holder	StSt	StSt
Clamping range of ridge tile width	180-280 mm	180-280 mm
Height of conductor holder (h1)	16 mm	36 mm
Material of conductor holder	**plastic**	**plastic**
Colour of conductor holder	grey	grey
Conductor support Rd	8 mm	8 mm
PU	25 pc(s)	25 pc(s)

SPANNgrip light

Fixed with a StSt tension spring, with conductor holder DEHNgrip, loose conductor routing, laterally adjustable.



Type DLH ...	SGL 8 H20 FG180.280 V2A	SGL 8 H32 FG180.280 V2A
Part No.	**206 439**	**206 449**
Material of roof conductor holder	StSt	StSt
Clamping range of ridge tile width	180-280 mm	180-280 mm
Height of conductor holder (h1)	20 mm	32 mm
Material of conductor holder	StSt	StSt
Conductor support Rd	8 mm	8 mm
Standard	EN 62561-4	EN 62561-4
PU	25 pc(s)	25 pc(s)

SPANNsnap

Fixed with a StSt tension spring, with conductor holder DEHNsnap, loose conductor routing, laterally adjustable.



General technical data:	
Clamping range of ridge tile width	180-280 mm
Material of conductor holder	**plastic**
Conductor support Rd	8 mm

Type DLH SS 8 ...	H16 FG180.280 GR V2A	H16 FG180.280 BR CU
Part No.	**204 269**	**204 267**
Material of roof conductor holder	StSt	Cu
Height of conductor holder	16 mm (h1)	16 mm (h1)
Colour of conductor holder	grey	brown
PU	25 pc(s)	25 pc(s)

Type DLH ...	H36 FG180.280 GR V2A	H36 FG180.280 BR CU
Part No.	**204 249**	**204 247**
Material of roof conductor holder	StSt	Cu
Height of conductor holder	36 mm (h1)	36 mm (h1)
Colour of conductor holder	grey	brown
PU	25 pc(s)	25 pc(s)

SPANNgrip

Fixed with a StSt tension spring, with conductor holder DEHNgrip, loose conductor routing, laterally adjustable.



General technical data:	
Clamping range of ridge tile width	180-280 mm
Conductor support Rd	8 mm
Standard	EN 62561-4

Type DLH ...	SG 8 H20 FG180.280 V2A	SG 8 H20 FG180.280 CU
Part No.	**206 239**	**206 237**
Material of roof conductor holder	StSt	Cu
Height of conductor holder	20 mm (h1)	20 mm (h1)
Material of conductor holder	StSt	Cu
PU	25 pc(s)	25 pc(s)

Type DLH ...	SG 8 H32 FG180.280 V2A	SG 8 H32 FG180.280 CU
Part No.	**206 249**	**206 247**
Material of roof conductor holder	StSt	Cu
Height of conductor holder	32 mm (h1)	32 mm (h1)
Material of conductor holder	StSt	Cu
PU	25 pc(s)	25 pc(s)

Roof Conductor Holders Adjustable for Ridge and Hip Tiles

For fixing air-termination conductors on the ridge, e.g. of tile roofs.

Steplessly adjustable with conductor holder DEHNsnap

Loose conductor routing, laterally adjustable (top centre to the bottom).



General technical data:	
Clamping range	180-280 mm
Material of conductor holder	**plastic**
Conductor support Rd	8 mm
Length of clamping claw	23 mm

Type DLH ...	DS 8 H16 FG180.280 GR V2A	DS 8 H16 FG180.280 BR V2A
Part No.	**204 109**	**204 911**
Material of roof conductor holder	StSt	StSt
Height of conductor holder (h1)	16 mm	16 mm
Colour of conductor holder	grey	brown
PU	25 pc(s)	25 pc(s)

Type DLH ...	DS 8 H16 FG180.280BR GALCU	DS 8 H36 FG180.280 GR V2A
Part No.	**204 107**	**204 129**
Material of roof conductor holder	Cu	StSt
Height of conductor holder (h1)	16 mm	36 mm
Colour of conductor holder	brown	grey
PU	25 pc(s)	25 pc(s)

Type DLH ...	DS 8 H36 FG180.280 BR V2A	DS 8 H36 FG180.280BR GALCU
Part No.	**204 913**	**204 127**
Material of roof conductor holder	StSt	Cu
Height of conductor holder (h1)	36 mm	36 mm
Colour of conductor holder	brown	brown
PU	25 pc(s)	25 pc(s)

Steplessly adjustable with conductor holder DEHNgrip

Loose conductor routing, laterally adjustable (top centre to the bottom).



General technical data:	
Clamping range	180-280 mm
Conductor support Rd	8 mm
Standard	EN 62561-4

Type DLH ...	DG 8 H20 FG180.280 V2A	DG 8 H20 FG180.280 KK V2A
Part No.	**206 109**	**206 809**
Material of roof conductor holder	StSt	StSt
Height of conductor holder (h1)	20 mm	20 mm
Material of conductor holder	StSt	StSt
Length of clamping claw	23 mm	15 mm
PU	25 pc(s)	25 pc(s)

Type DLH ...	DG 8 H20 FG180.280 KK GALCU	DG 8 H32 FG180.280 KK GALCU
Part No.	**206 807**	**206 817**
Material of roof conductor holder	Cu	Cu
Height of conductor holder (h1)	20 mm	32 mm
Material of conductor holder	Cu	Cu
Length of clamping claw	15 mm	15 mm
PU	25 pc(s)	25 pc(s)

Type DLH ...	DG 8 H32 FG180.280 KK V2A
Part No.	**206 819**
Material of roof conductor holder	StSt
Height of conductor holder (h1)	32 mm
Material of conductor holder	StSt
Length of clamping claw	15 mm
PU	25 pc(s)

Adjustable in steps with conductor holder DEHNquick

Fixed conductor routing.



General technical data:	
Conductor support Rd	6-10 mm
Length of clamping claw	24 mm

Type DLH ...	DQ 6.10 FG120.240 STTZN	DQ 6.10 FG200.280 STTZN
Part No.	**202 020**	**202 021**
Material of roof conductor holder	**St/tZn**	**St/tZn**
Clamping range	120-240 mm	200-280 mm
Material of conductor holder	**St/tZn**	**St/tZn**
PU	25 pc(s)	1 pc(s)

Type DLH ...	DQ 6.10 FG120.240 V2A	DQ 6.10 FG120.240 CU
Part No.	**202 900**	**202 027**
Material of roof conductor holder	StSt	Cu
Clamping range	120-240 mm	120-240 mm
Material of conductor holder	StSt	Cu
PU	1 pc(s)	1 pc(s)

Type DLH ...	DQ 6.10 FG200.280 CU
Part No.	**202 227**
Material of roof conductor holder	Cu
Clamping range	200-280 mm
Material of conductor holder	Cu
PU	25 pc(s)

Roof Conductor Holders for Ridge and Hip Tiles

For fixing air-termination conductors on the ridge.

FIRSTsnap

Attached to the ridge tile clip of dry ridges, with conductor holder DEHNsnap, loose conductor routing.



Type	LH FS 8 H16 GR V2A	LH FS 8 H16 K BR V2A
Part No.	**204 029**	**204 039**
Material of roof conductor holder	StSt	StSt
Height of conductor holder	16 mm	16 mm
Material of conductor holder	**plastic**	**plastic**
Colour of conductor holder	grey	brown
Conductor support Rd	8 mm	8 mm
PU	50 pc(s)	50 pc(s)

Two screw clamp with spacer and elastic sealing

For tiled, slated and corrugated sheet roofs, with weather-resistant spacer and elastic sealing, fixed conductor routing.



Type	DLH ZS 7.10 FL20 KT12 STTZN
Part No.	**216 000**
Material of roof conductor holder	**plastic**
Hole	Ø12 mm
Material of conductor holder	**St/tZn**
Conductor support Rd	7-10 mm
Conductor support Fl	20 mm
PU	25 pc(s)

Roof Conductor Holders with Angled, Flexible Brace for Roof Surfaces

For hanging into roof tiles, with a flexible brace made of thin StSt (0.3 mm) which moulds itself to the grooves of the tile.

FLEXIsnap

Fixed to grooved tiles using the flexible brace, loose conductor routing.



General technical data:	
Material of roof conductor holder	StSt
Length of brace	170 mm
Material of conductor holder	**plastic**
Conductor support Rd	8 mm

Type DLH ...	FS 8 H16 L170 GR V2A	FS 8 H16 L170 BR V2A
Part No.	**204 935**	**204 936**
Height of conductor holder (h1)	16 mm	16 mm
Colour of conductor holder	grey	brown
PU	1 pc(s)	50 pc(s)

Type DLH ...	FS 8 H36 L170 GR V2A	FS 8 H36 L170 BR V2A
Part No.	**204 937**	**204 938**
Height of conductor holder (h1)	36 mm	36 mm
Colour of conductor holder	grey	brown
PU	50 pc(s)	50 pc(s)

FLEXIgrip

Fixed to grooved tiles using the flexible brace, loose conductor routing.



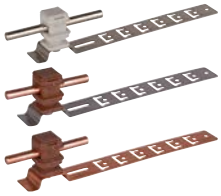
Type DLH ...	FG 8 H32 L170 V2A	FG 8 H32 L170 V2A GALCU
Part No.	**204 949**	**204 957**
Material of roof conductor holder	StSt	StSt
Length of brace	170 mm	170 mm
Height of conductor holder (h1)	32 mm	32 mm
Material of conductor holder	StSt	Cu
Conductor support Rd	8 mm	8 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

Roof Conductor Holders with Embossed Brace for Roof Surfaces

For fixing air-termination and down conductors.

UNIsnap height 16 mm

With prepunched points for bending it and hooking it into roof tiles or battens, with conductor holder DEHNsnap, loose conductor routing.



General technical data:	
Height of conductor holder	16 mm
Material of conductor holder	**plastic**
Conductor support Rd	8 mm

Type	DLH US 8 H16 L205 GR V2A	DLH US 8 H16 L205 BR V2A
Part No.	**204 149**	**204 921**
Material of roof conductor holder	StSt	StSt
Length of brace (l1)	205 mm	205 mm
Colour of conductor holder	grey	brown
PU	50 pc(s)	1 pc(s)

Type	DLH US 8 H16 L205 BR GALCU	DLH US 8 H16 L335 GR V2A
Part No.	**204 147**	**204 159**
Material of roof conductor holder	Cu	StSt
Length of brace (l1)	205 mm	335 mm
Colour of conductor holder	brown	grey
PU	50 pc(s)	50 pc(s)

Type	DLH US 8 H16 L335 BR GALCU	DLH US 8 H16 L475 GR V2A
Part No.	**204 157**	**204 169**
Material of roof conductor holder	Cu	StSt
Length of brace (l1)	335 mm	475 mm
Colour of conductor holder	brown	grey
PU	50 pc(s)	1 pc(s)

UNIsnap height 36 mm

With prepunched points, for bending it and hooking it into roof tiles or battens, with conductor holder DEHNsnap, loose conductor routing.



General technical data:	
Height of conductor holder	36 mm
Material of conductor holder	**plastic**
Conductor support Rd	8 mm

Type	DLH US 8 H36 L205 GR V2A	DLH US 8 H36 L205 BR V2A
Part No.	**204 179**	**204 924**
Material of roof conductor holder	StSt	StSt
Length of brace (l1)	205 mm	205 mm
Colour of conductor holder	grey	brown
PU	50 pc(s)	50 pc(s)

Type	DLH US 8 H36 L205 BR GALCU	DLH US 8 H36 L335 GR V2A
Part No.	**204 177**	**204 189**
Material of roof conductor holder	Cu	StSt
Length of brace (l1)	205 mm	335 mm
Colour of conductor holder	brown	grey
PU	50 pc(s)	50 pc(s)

Type	DLH US 8 H36 L335 BR V2A	DLH US 8 H36 L335 BR GALCU
Part No.	**204 925**	**204 187**
Material of roof conductor holder	StSt	Cu
Length of brace (l1)	335 mm	335 mm
Colour of conductor holder	brown	brown
PU	50 pc(s)	50 pc(s)

Type	DLH US 8 H36 L475 GR V2A	DLH US 8 H36 L475 BR GALCU
Part No.	**204 199**	**204 197**
Material of roof conductor holder	StSt	Cu
Length of brace (l1)	475 mm	475 mm
Colour of conductor holder	grey	brown
PU	50 pc(s)	1 pc(s)

UNIsnap with clamping part

With prepunched points for bending it and hooking it into roof tiles or battens,with additional clamping part e.g. for slated roofs, with conductor holder DEHNsnap, loose conductor routing.



Type	LH US 8 H16 L205 KT GR V2A
Part No.	**204 089**
Material of roof conductor holder	StSt
Length of brace (l1)	205 mm
Height of conductor holder	16 mm
Material of conductor holder	**plastic**
Colour of conductor holder	grey
Conductor support Rd	8 mm
PU	1 pc(s)

DEHNsnap with Al base brace

Moulds itself to the grooves of the tile, with conductor holder DEHNsnap, loose conductor routing.



Type	DLH DS 8 H36 L205 GR AL	DLH DS 8 H36 L205 BR AL
Part No.	**204 170**	**204 171**
Material of roof conductor holder	Al	Al
Length of brace (l1)	205 mm	205 mm
Height of conductor holder	36 mm	36 mm
Material of conductor holder	**plastic**	**plastic**
Colour of conductor holder	grey	brown
Conductor support Rd	8 mm	8 mm
PU	50 pc(s)	50 pc(s)

UNIgrip height 20 mm

With prepunched points for bending it and hooking it on roof tiles or battens, with conductor holder DEHNgrip, loose conductor routing.



General technical data:	
Height of conductor holder	20 mm
Conductor support Rd	8 mm
Standard	EN 62561-4

Type	DLH UG 8 H20 L205 V2A	DLH UG 8 H20 L205 CU
Part No.	**206 209**	**206 207**
Material of roof conductor holder	StSt	Cu
Length of brace (l1)	205 mm	205 mm
Material of conductor holder	StSt	Cu
PU	50 pc(s)	50 pc(s)

Type	DLH UG 8 H20 L335 V2A	DLH UG 8 H20 L335 CU
Part No.	**206 219**	**206 217**
Material of roof conductor holder	StSt	Cu
Length of brace (l1)	335 mm	335 mm
Material of conductor holder	StSt	Cu
PU	50 pc(s)	50 pc(s)

Type	DLH UG 8 H20 L475 V2A	DLH UG 8 H20 L475 CU
Part No.	**206 229**	**206 227**
Material of roof conductor holder	StSt	Cu
Length of brace (l1)	475 mm	475 mm
Material of conductor holder	StSt	Cu
PU	50 pc(s)	50 pc(s)

UNIgrip height 32 mm

With prepunched points for bending it and hooking it on roof tiles or battens, with conductor holder DEHNgrip, loose conductor routing.



General technical data:	
Material of roof conductor holder	StSt
Height of conductor holder	32 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Standard	EN 62561-4

Type	DLH UG 8 H32 L205 V2A	DLH UG 8 H32 L335 V2A
Part No.	206 309	206 319
Length of brace (l1)	205 mm	335 mm
PU	50 pc(s)	50 pc(s)

Type	DLH UG 8 H32 L475 V2A
Part No.	206 329
Length of brace (l1)	475 mm
PU	50 pc(s)

UNIgrip with clamping part, height 20 mm

With prepunched points for bending it and hooking it into roof tiles or battens, with additional clamping part, e.g. for slated roofs, with conductor holder DEHNgrip, loose conductor routing.



Type	DLH UG 8 H20 L205 KT V2A
Part No.	206 289
Material of roof conductor holder	StSt
Length of brace (l1)	205 mm
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Standard	EN 62561-4
PU	50 pc(s)

DEHNgrip with Al brace

Moulds itself to the grooves of the tile, with conductor holder DEHNgrip, loose conductor routing.



Type	DLH DG 8 H20 L205 V2A AL	DLH DG 8 H32 L205 V2A AL
Part No.	206 170	206 171
Material of roof conductor holder	Al	Al
Length of brace (l1)	205 mm	205 mm
Height of conductor holder	20 mm	32 mm
Material of conductor holder	StSt	StSt
Conductor support Rd	8 mm	8 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

Roof Conductor Holders with Brace for Roof Surfaces

Inserted on tiled, slated and roofing felt roofs.

Straight

Straight, with conductor holder DEHNquick, for conductors Rd 6-10 mm, fixed conductor routing.



General technical data:	
Height of brace	55 mm
Conductor support Rd	6-10 mm

Type DLH DQ 6.10 H55 ...	L260 STTZN	L260 V2A
Part No.	202 040	202 902
Material of roof conductor holder	St/tZn	StSt
Length of brace	260 / 2 mm	260 / 1 mm
Material of conductor holder	St/tZn	StSt
PU	50 pc(s)	50 pc(s)

Type DLH DQ 6.10 H55 L260 ...	CU
Part No.	202 037
Material of roof conductor holder	Cu
Length of brace	260 / 2 mm
Material of conductor holder	Cu
PU	50 pc(s)

Cranked

With conductor holder DEHNquick, fixed conductor routing.



General technical data:	
Height of brace	55 mm
Conductor support Rd	6-10 mm

Type DLH DQ 6.10 H55 ...	L260 GS STTZN	L260 GS V2A
Part No.	202 010	202 901
Material of roof conductor holder	St/tZn	StSt
Length of brace	260 / 2 mm	260 / 1 mm
Material of conductor holder	St/tZn	StSt
PU	50 pc(s)	50 pc(s)

Type DLH DQ 6.10 H55 L260 ...	GS CU
Part No.	202 017
Material of roof conductor holder	Cu
Length of brace	260 / 2 mm
Material of conductor holder	Cu
PU	1 pc(s)

Roof Conductor Holders with Angled Brace for Roof Surfaces

Hung into the roof tiles.

With conductor holder DEHNsnap

Loose conductor routing.



Type DLH ...	DS 8 H16 L169 WS V2A
Part No.	**204 359**
Material of roof conductor holder	StSt
Length of brace (l1)	169 mm
Height of conductor holder	16 mm
Material of conductor holder	**plastic**
Colour of conductor holder	grey
Conductor support Rd	8 mm
PU	1 pc(s)

With conductor holder DEHNgrip

Loose conductor routing.



Type DLH ...	DG 8 H20 L169 WS V2A
Part No.	**206 359**
Material of roof conductor holder	StSt
Length of brace (l1)	169 mm
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Standard	EN 62561-4
PU	50 pc(s)

With conductor holder DEHNquick

Hung into roof tiles or battens, fixed conductor routing (lengthwise or crosswise).



Type DLH ...	DQ 6.10 H55 L115 WS STTZN	DQ 6.10 H55 L410 WS STTZN
Part No.	**202 050**	**202 080**
Material of roof conductor holder	**St/tZn**	**St/tZn**
Length of brace (l1)	115 mm	410 mm
Material of conductor holder	**St/tZn**	**St/tZn**
Conductor support Rd	6-10 mm	6-10 mm
PU	25 pc(s)	50 pc(s)

Roof Conductor Holders with Clamping Device for Roof Surfaces

For fixing air-termination and down conductors.

PLATTENsnap

Fixed on overlapping constructions, with conductor holder DEHNsnap, loose conductor routing.



Type	LH PS 8 H16 KB4.6 GR V2A	LH PS 8 H16 KB4.6 BR V2A
Part No.	**204 069**	**204 079**
Material of roof conductor holder	StSt	StSt
Clamping range	4-6 mm	4-6 mm
Height of conductor holder	16 mm	16 mm
Material of conductor holder	**plastic**	**plastic**
Colour of conductor holder	grey	brown
Conductor support Rd	8 mm	8 mm
PU	50 pc(s)	50 pc(s)

ZIEGELsnap

Fixed between flat tiles (plain tiles) and slabs, with conductor holder DEHNsnap, loose conductor routing.



Type	LH ZS 8 H16 KB4.16 GR V2A	LH ZS 8 H16 KB4.16 BR V2A
Part No.	**204 049**	**204 059**
Material of roof conductor holder	StSt	StSt
Clamping range	4-16 mm	4-16 mm
Height of conductor holder	16 mm	16 mm
Material of conductor holder	**plastic**	**plastic**
Colour of conductor holder	grey	brown
Conductor support Rd	8 mm	8 mm
PU	50 pc(s)	50 pc(s)

ZIEGELgrip

Fixed between flat tiles (plain tiles) and slabs, with conductor holder DEHNgrip, loose conductor routing.



Type	LH ZG 8 H20 KB4.16 V2A
Part No.	**206 049**
Material of roof conductor holder	StSt
Clamping range	4-16 mm
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Standard	EN 62561-4
PU	50 pc(s)

DEHNgrip for bitumen shingles

As well as for roof and wall slabs, loose conductor routing.



Type	DLH DG H20 UK8 V2A	DLH DG 8 H20 KB8.18 V2A
Part No.	**206 389**	**206 399**
Material of roof conductor holder	StSt	StSt
Clamping range	2-8 mm	8-18 mm
Height of conductor holder	20 mm	20 mm
Material of conductor holder	StSt	StSt
Conductor support Rd	8 mm	8 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

DEHNgrip for metal roof shingles

For fixing air-termination and down conductors on e.g. PREFA roof systems (PREFA small format) as well as bitumen shingles and shingles made of natural materials



Type	DLH DG 8 H20 KB2.8 KU V2A
Part No.	**206 379**
Material of roof conductor holder	StSt
Clamping range	2-8 mm
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Standard	EN 62561-4
PU	50 pc(s)

Roof Conductor Holders with Preformed Brace for Roof Surfaces

Hung onto the groove of roof tiles.

Hung onto the lower groove, with conductor holder DEHNgrip

Loose conductor routing.



Type DLH ...	DG 8 H20 L103 EH V2A
Part No.	**206 349**
Material of roof conductor holder	StSt
Length of brace	103 mm
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Standard	EN 62561-4
PU	50 pc(s)

Hung onto the lower groove, with conductor holder DEHNsnap

Hung onto the lower groove of pantiles, with conductor holder DEHNsnap, loose conductor routing, brace length 90 mm.



Type DLH ...	DS 8 H36 L90 EH GR V2A	DS 8 H36 L90 EH BR V2A
Part No.	**204 229**	**204 239**
Material of roof conductor holder	StSt	StSt
Length of brace	90 mm	90 mm
Height of conductor holder	36 mm	36 mm
Material of conductor holder	**plastic**	**plastic**
Colour of conductor holder	grey	brown
Conductor support Rd	8 mm	8 mm
PU	50 pc(s)	50 pc(s)

Hung onto the upper groove, with conductor holder DEHNgrip

Hung onto the groove of pantiles, with conductor holder DEHNgrip, loose conductor routing, brace length 87 mm.



Type DLH ...	DG 8 H20 L87 EH V2A
Part No.	**206 369**
Material of roof conductor holder	StSt
Length of brace	87 mm
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Standard	EN 62561-4
PU	50 pc(s)

Components for Buildings with Thatched Roof

Lightning protection system components for buildings with thatched roofs.
Air-termination conductors on thatched roofs have to be installed at a distance to the roof, e.g. on isolating supports. Certain distances also have to be kept to the eaves.
The span width for ridge conductors is approx. 15 m and for down conductors approx. 10 m without additional supports. Span stakes have to be fastened to the roof construction (rafters and crossbars) using anchor bolts and flat washers.
Today an isolated (HVI) lightning protection system is often used as an external lightning protection system for buildings with thatched roofs.

Clamping cap

Fixed to wooden stakes (Part No. 145 241).
With air-termination tip (length 300 mm, Ø10 mm, StSt).



Typ	SPK 100X100 FSP10 300 7.10 V2A
Art.-Nr.	**146 309**
Material	StSt
Support Rd	7-10 mm
PU	1 pc(s)

Roof conductor support

With conductor holder.



Typ DLS ...	6.10 134X300X598 EHI
Art.-Nr.	**240 000**
Material	**oak** (impregnated)
Dimensions (l x w x h)	134 x 300 x 598 mm
Support Rd	6-10 mm
PU	1 pc(s)

Eaves supports St/tZn / StSt

For spanning conductors/cables over it.
Distance between the wall and conductors is adjustable.



General technical data:		
Support Rd		7-10 mm

Typ TS 7.10 ...	V1.0 1.15M STTZN	V1.25 1.40M STTZN
Art.-Nr.	**239 000**	**239 001**
Material	**St/tZn**	**St/tZn**
Adjustable range (l1)	1.05-1.20 m	1.40-1.55 m
PU	1 pc(s)	1 pc(s)

Typ TS 7.10 ...	V1.25 1.55M V2A	V1.45 1.75M V2A
Art.-Nr.	**239 009**	**239 019**
Material	StSt	StSt
Adjustable range (l1)	1.25-1.55 m	1.45-1.75 m
PU	1 pc(s)	1 pc(s)

Anchoring block

To fix the conductors / cables on the wall.



Typ ASK ...	8 150 40 2XB10.5 V2A
Art.-Nr.	**241 009**
Material	StSt
Dimensions (l x w x d)	150 x 40 x 6 mm
Support Rd	8 mm
PU	20 pc(s)



Roof Conductor Holders for Metal Roofs

For fixing additional air-termination systems on metal roofs.
When using two roof conductor holders (clamps / clamping pieces) which have been tested for the respective roof profile, a lightning current carrying capability of 100 kA (10/350 µs) is provided.

For roofs with round standing seam, with clamping piece



Type	DLH KB 6.10 RSF20.25 V2A	DLH KB 6.10 RSF20.25 AL
Part No.	**223 010**	**223 040**
Material of roof conductor holder	StSt	Al
Clamping range	Ø20-25 mm	Ø20-25 mm
Material of conductor holder	StSt	Al
Conductor support Rd	6-10 mm	6-10 mm
Conductor routing	fixed	fixed
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

*) For exact assignment, see test certificate.

For roofs with round standing seam, with DEHNgrip



Type	DLH DG 8 RSF20.25 V2A	DLH DG 8 RSF20.25 AL
Part No.	**223 011**	**223 041**
Material of roof conductor holder	StSt	Al
Clamping range	Ø20-25 mm	Ø20-25 mm
Height of conductor holder	20 mm	20 mm
Material of conductor holder	StSt	StSt
Conductor support Rd	8 mm	8 mm
Conductor routing	loose	loose
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

For roofs with clamping seam, with clamping piece (e.g. RIB ROOF Speed 500 by Zambelli)



Type	DLH KB 6.10 KF18.22 AL
Part No.	**223 070**
Material of roof conductor holder	Al
Clamping range	approx. 18 / 22 mm
Material of conductor holder	Al
Conductor support Rd	6-10 mm
Conductor routing	fixed
Standard	EN 62561-1
PU	50 pc(s)

*) For exact assignment, see test certificate.

For roofs with clamping seam, with DEHNgrip (e.g. RIB-ROOF Speed 500 by Zambelli)



Type	DLH DG 8 KF18.22 AL
Part No.	**223 071**
Material of roof conductor holder	Al
Clamping range	approx. 18 / 22 mm
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Conductor routing	loose
Standard	EN 62561-1
PU	50 pc(s)

For roofs with standing seam, with clamping piece



Type	FK KB 6.10 KBF0.7 8 W V2A
Part No.	**365 059**
Material of roof conductor holder	StSt
Clamping range	0.7-8 mm
Material of conductor holder	StSt
Conductor support Rd	6-10 mm
Conductor routing	fixed
Standard	EN 62561-1
PU	50 pc(s)

For roofs with standing seam, with DEHNgrip



Type	DLH DG 8 SF0.7 8 V2A
Part No.	**223 031**
Material of roof conductor holder	StSt
Clamping range	0.7-8 mm
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Conductor routing	loose
Standard	EN 62561-4
PU	50 pc(s)

For trapezoidal roofs, with clamping piece

Hung into the fixing screws of the roof.



Type	DLH KB 6.10 TD B8.5 V2A
Part No.	**223 020**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Conductor support Rd	6-10 mm
Conductor routing	fixed
PU	50 pc(s)

For trapezoidal roofs, with DEHNgrip

Hung into the fixing screws of the roof.



Type	DLH DG 8 TD B8.5 V2A
Part No.	**223 021**
Material of roof conductor holder	StSt
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Conductor routing	loose
Standard	EN 62561-4
PU	50 pc(s)

Roof Conductor Holders with Adhesive Pad

For installing air-termination systems, e.g. on trapezoidal roofs.
The conductor holder can be used on smooth (unstructured) surfaces such as metal roofs / metal surfaces.
The conductor holders are stuck to the roof (remove protective backing).

DEHNsnap conductor holder with formable aluminium brace



Type DLH ...	DS 8 H16 KP K AL
Part No.	**297 130**
Brace material	Aluminium - formable
Material of conductor holder	**Plastic**
Colour of conductor holder	grey ●
Conductor support Rd	8 mm
Type of conductor holder	DEHNsnap
Height of conductor holder	16 mm
Conductor routing	loose
Dimensions	as per CAD
PU	50 pc(s)

DEHNgrip conductor holder with formable aluminium brace



Type DLH ...	DG 8 H20 KP V2A AL
Part No.	**297 140**
Brace material	Aluminium - formable
Material of conductor holder	StSt
Conductor support Rd	8 mm
Type of conductor holder	DEHNgrip
Height of conductor holder	20 mm
Conductor routing	loose
Dimensions	as per CAD
PU	50 pc(s)

DEHNsnap conductor holder with base plate



Type DLH ...	DS 8 H36 KP67 K GR
Part No.	**297 110**
Base plate material	**plastic**
Base plate colour	grey ●
Material of conductor holder	**plastic**
Colour of conductor holder	grey ●
Conductor support Rd	8 mm
Type of conductor holder	DEHNsnap
Height of conductor holder	36 mm
Conductor routing	loose
Dimensions	Ø67 mm
PU	50 pc(s)

DEHNgrip conductor holder with base plate



Type DLH ...	DG 8 H32 KP67 V2A K GR
Part No.	**297 120**
Base plate material	**plastic**
Base plate colour	grey ●
Material of conductor holder	StSt
Conductor support Rd	8 mm
Type of conductor holder	DEHNgrip
Height of conductor holder	32 mm
Conductor routing	loose
Dimensions	Ø67 mm
Standard	EN 62561-4
PU	50 pc(s)

Note:
For cleaning the adhesive points for roof conductor holders with adhesive pad use ISOPROPYL ALCOHOL 99.1 to 99.9% (CAS No. 67-63-0).

Roof Conductor Holders for Corrugated Sheet Roofs

For installing ridge conductors and conductors on the roof surface.
Corrugations 177 mm (profile 5) and 130 mm (profile 8).

For corrugated sheet roofs (profile 5), with DEHNquick

For installation on the roof surface.



Type DLH ...	DQ 6.10 WPRO5 STTZN
Part No.	**202 005**
Material of roof conductor holder	**St/tZn**
Material of conductor holder	**St/tZn**
Conductor support Rd	6-10 mm
Conductor routing	fixed
PU	50 pc(s)

For corrugated sheet roofs (profile 5), with DEHNgrip

For installation on the roof surface.



Type DLH ...	DQ 8 WPRO5 V2A STTZN
Part No.	**206 105**
Material of roof conductor holder	**St/tZn**
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Conductor routing	loose
Standard	EN 62561-4
PU	50 pc(s)

For corrugated sheet roofs (profile 5 and profile 8), with DEHNquick

For installing ridge conductors and conductors on the roof surface, angled design.



Type DLH ...	DQ 6.10 WPRO5 8 STTZN
Part No.	**202 015**
Material of roof conductor holder	**St/tZn**
Material of conductor holder	**St/tZn**
Conductor support Rd	6-10 mm
Conductor routing	fixed
PU	50 pc(s)

For corrugated sheet roofs (profile 5 and profile 8), with DEHNquick

For installing ridge conductors and conductors on the roof surface, angled design.



Type DLH ...	DQ 6.10 WPRO5 8 V2A
Part No.	**202 906**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Conductor support Rd	6-10 mm
Conductor routing	fixed
PU	50 pc(s)

For corrugated sheet roofs (profile 5 and profile 8), with DEHNgrip

For installing ridge conductors and conductors on the roof surface, straight design.



Type DLH ...	DG 8 H20 WPRO5 8 V2A
Part No.	**206 339**
Material of roof conductor holder	StSt
Height of conductor holder	20 mm
Material of conductor holder	StSt
Conductor support Rd	8 mm
Conductor routing	loose
Standard	EN 62561-4
PU	50 pc(s)

For corrugated sheet roofs (profile 5 and profile 8), with DEHNsnap

For installing ridge conductors and conductors on the roof surface, straight design.



Type DLH ...	DS 8 H16 WPRO5 8 GR V2A	DS 8 H16 WPRO5 8 BR V2A
Part No.	**204 906**	**204 916**
Material of roof conductor holder	StSt	StSt
Height of conductor holder	16 mm	16 mm
Material of conductor holder	**plastic**	**plastic**
Colour of conductor holder	grey	brown
Conductor support Rd	8 mm	8 mm
Conductor routing	loose	loose
PU	50 pc(s)	50 pc(s)



Conductor Holders DEHNgrip

Screwless StSt holder system with loose conductor routing.

Height 20 mm



Type LH DG ...	8 H20 IGM6 V2A	8 H20 B7.8 V2A
Part No.	**207 019**	**207 009**
Thread of conductor holder	M6	–
Hole of conductor holder	–	Ø7.8 mm
Material of conductor holder	StSt	StSt
Conductor support Rd	8 mm	8 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

Type LH DG ...	8 H20 IGM6 CU	8 H20 B7.8 CU
Part No.	**207 017**	**207 007**
Thread of conductor holder	M6	–
Hole of conductor holder	–	Ø7.8 mm
Material of conductor holder	Cu	Cu
Conductor support Rd	8 mm	8 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

Height 32 mm



General technical data:		
Conductor support Rd		8 mm
Standard		EN 62561-4

Type LH DG ...	8 H32 IGM6 V2A	8 H32 B7.8 V2A
Part No.	**207 039**	**207 029**
Thread of conductor holder	M6	–
Hole of conductor holder	–	Ø7.8 mm
Material of conductor holder	StSt	StSt
PU	50 pc(s)	50 pc(s)

Type LH DG ...	8 H32 IGM6 CU	8 H32 B7.8 CU
Part No.	**207 037**	**207 027**
Thread of conductor holder	M6	–
Hole of conductor holder	–	Ø7.8 mm
Material of conductor holder	Cu	Cu
PU	50 pc(s)	50 pc(s)

Height 20 mm, pre-assembled with screw, plastic base and plug

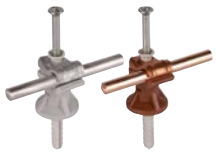


Type LH DG ...	8 H20 HS5X50 KD8 V2A GR	8 H20 HS5X50 KD8 CU BR
Part No.	**207 109**	**207 107**
Hole of conductor holder	Ø7.8 mm	Ø7.8 mm
Material of conductor holder	StSt	Cu
Conductor support Rd	8 mm	8 mm
Screw	5 x 50 mm	5 x 50 mm
Plastic plug	Ø8 x 40 mm	Ø8 x 40 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

Conductor Holders DEHNfix

Two-in-one system (fixes the holder and the conductor) with conductor holder DEHNquick, fixed conductor routing, UV-stabilised.

Height 30 mm



General technical data:		
Material of base part		plastic
Conductor support Rd		6-10 mm
Nail plug		Ø8 x 80 mm
Drilling depth		45 mm

Type LH DFI DQ 6.10 ...	STTZN H30 GR	V2A H30 GR
Part No.	**250 000**	**250 001**
Material of clamp	St/tZn	StSt
Colour of conductor holder	grey	grey
PU	50 pc(s)	50 pc(s)

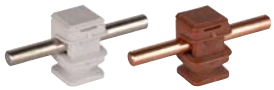
Type LH DFI DQ 6.10 ...	CU H30 BR
Part No.	**250 007**
Material of clamp	Cu
Colour of conductor holder	brown
PU	50 pc(s)

Note: Only suitable for solid stone or concrete.

Conductor Holders DEHNsnap

Plastic holder system with loose conductor routing.

Height 16 mm with female thread



General technical data:		
Material of conductor holder		**plastic**
Conductor support Rd		8 mm

Type LH DS 8 ...	**H16 IGM6 GR**	**H16 IGM6 BR**
Part No.	**204 001**	**204 007**
Thread of conductor holder	M6	M6
Colour of conductor holder	grey	brown
PU	100 pc(s)	50 pc(s)

Type LH DS 8 ...	**H16 IGM8 GR**	**H16 IGM8 BR**
Part No.	**204 002**	**204 017**
Thread of conductor holder	M8	M8
Colour of conductor holder	grey	brown
PU	50 pc(s)	100 pc(s)

Height 36 mm with female thread



General technical data:		
Material of conductor holder		**plastic**
Conductor support Rd		8 mm

Type LH DS 8 ...	**H36 IGM6 GR**	**H36 IGM6 BR**
Part No.	**204 003**	**204 027**
Thread of conductor holder	M6	M6
Colour of conductor holder	grey	brown
PU	100 pc(s)	100 pc(s)

Type LH DS 8 ...	**H36 IGM8 GR**	**H36 IGM8 BR**
Part No.	**204 004**	**204 037**
Thread of conductor holder	M8	M8
Colour of conductor holder	grey	brown
PU	50 pc(s)	50 pc(s)

Height 16 mm with screw



Type LH DS 8 ...	**H16 HS5X50 GR**
Part No.	**204 006**
Thread of conductor holder	M8
Material of conductor holder	**plastic**
Colour of conductor holder	grey
Conductor support Rd	8 mm
Screw	5 x 50 mm
PU	50 pc(s)

Height 16 mm, pre-assembled with screw, cover plate and dowel



Type LH DS 8 ...	**H16 HS5X50 KD8 GR**
Part No.	**204 120**
Thread of conductor holder	M8
Material of conductor holder	**plastic**
Colour of conductor holder	grey
Conductor support Rd	8 mm
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
PU	50 pc(s)

Conductor Holders DEHNhold

Conductor holder with a slotted saddle clamp for fixing round conductors, fixed conductor routing.
For use with different materials, e.g. Al, StSt, St/tZn and Cu.

With female thread



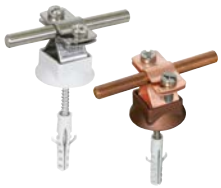
Type LH ZS ...	**8.10 FL20 M8 V2A**	**8.10 FL20 M8 CU**
Part No.	**274 110**	**274 117**
Material of conductor holder	StSt	StSt / gal Cu
Conductor support Rd	8-10 mm	8-10 mm
Conductor support Fl	20 mm	20 mm
Height of conductor holder	20 mm	20 mm
Thread of conductor holder	M8	M8
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

With female thread, pre-assembled with plastic base



Type LH ZS ...	**8.10 FL20 M8 KS V2A**
Part No.	**274 150**
Material of conductor holder	StSt
Conductor support Rd	8-10 mm
Conductor support Fl	20 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Standard	EN 62561-4
PU	50 pc(s)

With female thread, pre-assembled with screw, plastic base and plug



Type LH ZS ...	**8.10 FL20 KS KD8X40 V2A**	**8.10 FL20 KS KD8X40 CU**
Part No.	**274 160**	**274 167**
Material of conductor holder	StSt	StSt / gal Cu
Conductor support Rd	8-10 mm	8-10 mm
Conductor support Fl	20 mm	20 mm
Height of conductor holder	20 mm	20 mm
Thread of conductor holder	M8	M8
Plastic base	grey	brown
Screw	5 x 50 mm	5 x 50 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

With female thread, e.g. for round wire with plastic sheath



Type LH ZS ...	13 M8 V2A
Part No.	**274 113**
Material of conductor holder	StSt
Conductor support Rd	13 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
PU	50 pc(s)

Conductor Holders with Saddle Clamp and Flange

Complete unit with flange for installing conductors, fixed conductor routing.

With M8 female thread



Type LH ZS ...	7.10 IGM8 STTZN ZG
Part No.	**275 110**
Conductor support Rd	7-10 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamp	**St/tZn**
Material of base part	**ZDC**
Standard	EN 62561-4
PU	50 pc(s)

With female thread, pre-assembled with screw and plug



Type LH ZS ...	7.10 KD8X40 STTZN ZG
Part No.	**275 160**
Conductor support Rd	7-10 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamp	**St/tZn**
Material of base part	**ZDC**
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
Standard	EN 62561-4
PU	50 pc(s)

With female thread, e.g. for round wire with plastic sheath



Type LH ZS ...	13 IGM8 STTZN ZG
Part No.	**275 113**
Conductor support Rd	11-13 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamp	**St/tZn**
Material of base part	**ZDC**
PU	50 pc(s)

Conductor Holder with Saddle Clamp – Flat Design

Two-screw clamp with two M6 screws, for round and flat conductors.
With plastic cover disc (grey).

Pre-assembled with wood screw, plastic cover disc (grey) and plug



Type	LH ZS 7.10 FL30 AS KD8X40 V2A
Part No.	**286 819**
Conductor support Rd	7-10 mm
Conductor support Fl	30 mm
Height of conductor holder	10 mm
Material of conductor holder	StSt
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
Standard	EN 62561-4
PU	50 pc(s)

Round Conductor Holders

Conductor holders used for securing solid round and stranded cable conductors to building surfaces.

Round Conductor Holders

Holders for bare and PVC covered solid round and cable conductors.



General technical data:		
Standards		IEC / EN / BS EN 62561-4
Classification		Metallic, With screws, Clamp the conductor

Type RCH ...	BCCU 8.10/16.70 HCA	BCCU 70.150 HCA
Part No.	**118 162**	**118 163**
Material	High Copper Alloy	High Copper Alloy
Conductor Material	Bare and PVC covered copper	Bare and PVC covered copper
Clamping range (Stranded / Cable)	16 - 70 mm²	70 - 150 mm²
Clamping range Rd	8 - 10 mm	–
Tightening Torque	6 Nm	6 Nm
PU	50 pc(s)	50 pc(s)

Type RCH ...	BCCU 150.300 HCA	BCCU 8.10/16.70 ALA
Part No.	**118 164**	**118 165**
Material	High Copper Alloy	Aluminium Alloy
Conductor Material	Bare and PVC covered copper	Bare and PVC covered aluminium
Clamping range (Stranded / Cable)	150 - 300 mm²	–
Clamping range Rd	–	8 - 10 mm
Tightening Torque	6 Nm	2 Nm
PU	50 pc(s)	50 pc(s)

Stranded Cable Clips

These cable clips are an easy way to secure the stranded and solid round copper conductors to the building surface.



General technical data:	
Material	Copper
Standards	IEC / EN / BS EN 62561-4
Classification	Metallic, With screws, Clamp the conductor

Type	SCC BCU 50 CU	SCC BCU 70 CU
Part No.	117 165	117 166
Conductor Material	Bare Copper	Bare Copper
Clamping range (Stranded / Cable)	50 mm²	70 mm²
PU	50 pc(s)	50 pc(s)

Type	SCC CCU 50 CU	SCC CCU 70 CU
Part No.	117 185	117 186
Conductor Material	PVC Covered Copper	PVC Covered Copper
Clamping range (Stranded / Cable)	50 mm²	70 mm²
PU	50 pc(s)	50 pc(s)

Cover Discs and Plastic Bases

Intermediate element for screw-on / snap-on conductor and rod holders.

Plastic base

Snapped onto the conductor holders DEHNgrip and DEHNhold.



Type	KS 35 14 B8.5 UVS GR	KS 35 14 B8.5 UVS BR
Part No.	276 016	276 017
Height	10 mm	10 mm
Diameter Ø	35 mm	35 mm
Material	plastic	plastic
Colour	grey	brown
Type	UV-stabilised	UV-stabilised
PU	100 pc(s)	100 pc(s)

Cover disc, plastic



Type	AS 37 5 B7.5 UVS K GR	AS 37 5 B7.5 UVS K BR
Part No.	276 006	276 007
Height	5 mm	5 mm
Diameter Ø	37 mm	37 mm
Material	plastic	plastic
Colour	grey	brown
Type	UV-stabilised	UV-stabilised
PU	100 pc(s)	100 pc(s)

Cover disc, StSt



Type	AS 37 5 B8.5 V2A
Part No.	276 009
Height	5 mm
Diameter Ø	37 mm
Material	StSt
PU	100 pc(s)

Conductor Holder with Claw

Conductor holder for wall mounting with M6 clamping screw.
Fixed conductor routing.



Type	LH KR 6.10 H22 B6.5 V2A
Part No.	273 019
Hole Ø	6.5 mm
Material of conductor holder	StSt
Conductor support Rd	6-10 mm
Height of conductor holder	22 mm
Standard	EN 62561-4
PU	50 pc(s)

Flush-mounted Conductor Holders/Saddle Clamps

Suitable for flush mounting.

DEHNQUICK with nail plug



General technical data:	
Conductor support Rd	6-10 mm

Type	LH DQ 6.10 ND6X60 V2A	LH DQ 6.10 ND8X80 STTZN
Part No.	390 120	390 121
Material of conductor holder	StSt	St/tZn
Nail plug	Ø6 x 60 mm	Ø8 x 80 mm
PU	50 pc(s)	50 pc(s)

Type	LH DQ 6.10 ND8X80 V2A
Part No.	390 122
Material of conductor holder	StSt
Nail plug	Ø8 x 80 mm
PU	50 pc(s)

DEHNQUICK

Single-screw clamp with flexible clamping range and fixed conductor routing.



General technical data:	
Conductor support Rd	6-10 mm

Type UEL DQ ...	6.10 B8.5 STTZN	6.10 B8.5 V2A	6.10 B6.5 V2A
Part No.	202 000	202 001	202 169
Material of conductor holder	St/tZn	StSt	StSt
Hole Ø	8.5 mm	8.5 mm	6.5 mm
PU	50 pc(s)	50 pc(s)	100 pc(s)

Clamping piece

Single-screw clamp with flexible clamping range and fixed conductor routing.



Type	KB 6.10 B9 STTZN	KB 6.10 B9 V2A
Part No.	390 110	390 119
Material of conductor holder	St/tZn	StSt
Conductor support Rd	6-10 mm	6-10 mm
Hole Ø	9 mm	9 mm
PU	100 pc(s)	100 pc(s)

Conductor Holders for Downpipes

For installing down conductors on downpipes with fixed conductor routing.
All types are also suitable for plastic downpipes.

Type PPS
With worm gear.



General technical data:	
Conductor support Rd	8 mm

Type LH ...	8 SB80.100 SCG V2A	8 SB80.100 SCG GALCU
Part No.	200 079	200 077
Clamping range Ø pipe	80-100 mm	80-100 mm
Material of conductor holder	StSt	StSt / gal Cu
PU	50 pc(s)	50 pc(s)

Type LH ...	8 SB100.120 SCG V2A	8 SB100.120 SCG GALCU
Part No.	200 089	200 087
Clamping range Ø pipe	100-120 mm	100-120 mm
Material of conductor holder	StSt	StSt / gal Cu
PU	50 pc(s)	50 pc(s)

Type PS
Screwless, pre-punched for tongs.

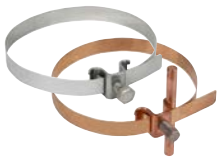


General technical data:	
Conductor support Rd	8 mm

Type LH ...	8 SB80.120 SCL V2A	8 SB80.120 SCL CU
Part No.	200 069	200 067
Clamping range Ø pipe	80-120 mm, in steps of 5 mm	80-120 mm, in steps of 5 mm
Material of conductor holder	StSt	Cu
PU	25 pc(s)	25 pc(s)

Type LH ...	8 SB100 SCL V2A	8 SB100 SCL CU
Part No.	200 059	200 057
Clamping range Ø pipe	100 mm	100 mm
Material of conductor holder	StSt	Cu
PU	25 pc(s)	25 pc(s)

Type PV
Adjustable, with clamping screw M8.



General technical data:	
Conductor support Rd	6-8 mm

Type LH ...	6.8 SB50.120 SPSM8 V2A	6.8 SB50.150 SPSM8 V2A
Part No.	200 029	200 039
Clamping range Ø pipe	50-120 mm	50-150 mm
Material of conductor holder	StSt	StSt
PU	10 pc(s)	10 pc(s)

Type LH ...	6.8 SB50.120 SPSM8 CU
Part No.	200 027
Clamping range Ø pipe	50 -120 mm
Material of conductor holder	Cu/bronze
PU	10 pc(s)

Downpipe Clamps

Pipe clamps for connecting downpipes to the lightning equipotential bonding according to IEC/EN 62305-3.
Connection possibilities for Rd, e.g. with KS connector (Part No. 301 000) or with clamping piece (Part No. 390 150) (depending on material).

For fixed pipe diameters



General technical data:		
Hole Ø		11 mm
Standard		EN 62561-1

Type	RRS 100 B11 STTZN	RRS 120 B11 STTZN
Part No.	420 100	420 120
Material	St/tZn	St/tZn
Clamping range pipe Ø (d1)	100 mm	120 mm
PU	50 pc(s)	1 pc(s)

Type	RRS 100 B11 CU	RRS 120 B11 CU
Part No.	420 107	420 127
Material	Cu	Cu
Clamping range pipe Ø (d1)	100 mm	120 mm
PU	1 pc(s)	1 pc(s)

Bimetallic type
For connecting St conductors with Cu downpipes, with St/tZn clamping piece and intermediate plate (Cupal).



Type	ZMRRS 100 KB 6.10 CU STTZN
Part No.	420 207
Material	Cu / St/tZn
Clamping range pipe Ø (d1)	100 mm
Clamping range Rd	6-10 mm
Standard	EN 62561-1
PU	1 pc(s)

Type RV, adjustable

With additional anti-rotation protection of the fixing screw and markings, predetermined bending points as well as prepunched cutting aids.



General technical data:	
Hole Ø	10.5 mm
Standard	EN 62561-1

Type	RRS V 60.100 B10.5 STTZN	RRS V 60.100 B10.5 AL
Part No.	423 010	423 011
Material	St/tZn	Al
Clamping range pipe Ø (d1)	60-100 mm	60-100 mm
Length (l1)	337 mm	337 mm
PU	50 pc(s)	50 pc(s)

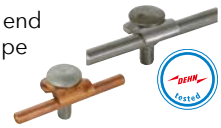
Type	RRS V 60.100 B10.5 CU	RRS V 60.100 B10.5 V2A
Part No.	423 017	423 019
Material	Cu	StSt
Clamping range pipe Ø (d1)	60-100 mm	60-100 mm
Length (l1)	337 mm	337 mm
PU	1 pc(s)	50 pc(s)

Type	RRS V 60.150 B10.5 STTZN	RRS V 60.150 B10.5 AL
Part No.	423 020	423 021
Material	St/tZn	Al
Clamping range pipe Ø (d1)	60-150 mm	60-150 mm
Length (l1)	494 mm	494 mm
PU	50 pc(s)	50 pc(s)

Type	RRS V 60.150 B10.5 CU	RRS V 60.150 B10.5 V2A
Part No.	423 027	423 029
Material	Cu	StSt
Clamping range pipe Ø (d1)	60-150 mm	60-150 mm
Length (l1)	494 mm	494 mm
PU	50 pc(s)	50 pc(s)

Clamping Piece Variants

For example as a connection with end piece for constructions or downpipe clamps.
Clamping piece with square hole 11 mm and truss head screw.



General technical data:	
Clamping range Rd	6-10 mm
Screw	M10 x 35 mm
Standard	EN 62561-1

Type KB 6.10 FRM10X35 ...	STTZN	CU
Part No.	390 150	390 157
Material of clamp	St/tZn	Cu
Clamping range (stranded / cable)	–	35-120 mm²
Material of screw / nut	St/tZn	StSt
PU	100 pc(s)	1 pc(s)

Type KB 6.10 FRM10X35 ...	V2A
Part No.	390 159
Material of clamp	StSt
Clamping range (stranded / cable)	–
Material of screw / nut	StSt
PU	100 pc(s)

KS Connectors

Clamping screw connector (**K**lemm**S**chrauben-Verbinder) for lightning current carrying connection of round conductors, e.g. to flat profiles, downpipe clamps or other parts of the lightning protection system.

One-piece, St/tZn

With screw and nut M10.



Type	KSV 7.10 STTZN	KSV 7.10 FER STTZN
Part No.	301 000	301 010
Material of clamping screw	St/tZn	St/tZn
Material of clamp	ZDC	ZDC
Clamping range Rd	7-10 mm	7-10 mm
Type	–	+ spring washer
Standard	EN 62561-1	EN 62561-1
PU	100 pc(s)	100 pc(s)

One-piece, Cu

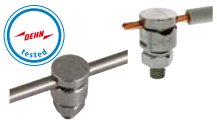
With screw and nut M10.



Type	KSV 6.10 CU	KSV 6.10 FER CU
Part No.	301 007	301 017
Material of clamping screw	Cu	Cu
Material of clamp	high copper alloy	high copper alloy
Clamping range Rd	6-10 mm	6-10 mm
Connection (single-wire / multi-wire)	16-50 mm²	25-70 mm²
Type	–	+ spring washer
Standard	EN 62561-1	EN 62561-1
PU	100 pc(s)	100 pc(s)

One-piece, StSt

With screw and nut M10.



General technical data:	
Clamping range Rd	6-10 mm
Standard	EN 62561-1

Type	KSV 6.10 V2A	KSV 6.10 V4A
Part No.	301 009	301 089
Material of clamping screw	StSt	StSt (V4A)
Material of clamp	StSt	StSt (V4A)
Connection (single-wire / multi-wire)	25-70 mm²	25-70 mm²
Type	–	–
PU	100 pc(s)	100 pc(s)

Type	KSV 6.10 FER V2A	KSV 6.10 FER V4A
Part No.	301 019	301 099
Material of clamping screw	StSt	StSt (V4A)
Material of clamp	StSt	StSt (V4A)
Connection (single-wire / multi-wire)	25-70 mm²	25-70 mm²
Type	+ spring washer	+ spring washer
PU	100 pc(s)	100 pc(s)

Type	UKSV 6.10 AQ16 50 V4A
Part No.	540 122
Material of clamping screw	StSt (V4A)
Material of clamp	StSt (V4A)
Connection (single-wire / multi-wire)	16-50 mm²
Type	+ spring washer
PU	25 pc(s)

One-piece, long, StSt

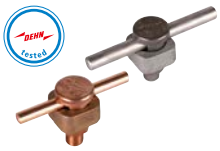
With screw and nut M10, length 60 mm.



Type	KSVL 6.10 FER V2A
Part No.	301 020
Material of clamping screw	StSt
Material of clamp	StSt
Clamping range Rd	6-10 mm
Connection (single-wire / multi-wire)	25-70 mm²
Type	+ spring washer
Standard	EN 62561-1
PU	50 pc(s)

Heavy design

With screw and nut M12.



Type	KSV 8.12.5 STTZN	KSV 8.12.5 CU
Part No.	300 002	300 017
Material of clamping screw	St/tZn	Cu
Material of clamp	MCI	high copper alloy
Clamping range Rd	8-12.5 mm	8-12.5 mm
Connection (single-wire / multi-wire)	50-95 mm²	50-95 mm²
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	1 pc(s)

Two-piece, gap 30 mm

With screw and nut M10.



Type	KSV 2X7.10 STTZN
Part No.	302 010
Material of clamping screw	St/tZn
Material of clamp	ZDC
Clamping range Rd	7-10 mm
Standard	EN 62561-1
PU	50 pc(s)

Two-piece, gap 40 mm

With screw and nut M10.



Type	AP 2X6.10 V2A
Part No.	301 229
Material of clamping screw	StSt
Material of clamp	StSt
Clamping range Rd	6-10 mm
Type	+ spring washer
Standard	EN 62561-1
PU	1 pc(s)

Plastic Conductor Holders for Downpipes

For insulated fixing of earth entries to metal downpipes.
Holder with clamping part for fixing the tensioning strap (dimensions 14 x 0.3 mm).

For round conductors

Fixed conductor routing, made of weather-resistant plastic, UV-stabilised and halogen-free.



Type	LH ZS 6.11 SBB PA V2A
Part No.	275 711
Material of conductor holder	PA
Material of clamping part	StSt
Conductor support Rd	6-11 mm
PU	50 pc(s)

For flat strips or round conductors

Fixed conductor routing, made of weather-resistant plastic, UV-stabilised and halogen-free.



Type	LH ZS 6.11 FL30 SBB PA V2A
Part No.	275 730
Material of conductor holder	PA
Material of clamping part	StSt
Conductor support Rd	6-11 mm
Conductor support Fl	30 mm
PU	50 pc(s)

For earth entry rods

Fixed conductor routing, made of weather-resistant plastic, UV-stabilised and halogen free.



Type	LH ZS 16 SBB PA V2A
Part No.	275 716
Material of conductor holder	PA
Material of clamping part	StSt
Conductor support Rd	16 mm
PU	50 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 931 or Part No. 540 905).



Type	SPK 14X0.3 V2A
Part No.	540 930
Material of grip head / strap	StSt
Screw	(SW13) M8 x 16 mm
PU	25 pc(s)

Endless tensioning strap

Cut to length with sheet metal shears.



Type	SPB 14X0.3 L50M V2A	SPB 14X0.3 L100M V2A
Part No.	540 931	540 905
Material of grip head / strap	StSt	StSt
Dimensions of strap (w x d)	14 x 0.3 mm	14 x 0.3 mm
Packing	plastic	cardboard
Length	50 m	100 m
PU	1 pc(s)	1 pc(s)

Flat Strip Holders DEHNhold

For fixing flat conductors via a slotted clamp, fixed conductor routing.
For use with different materials, e.g. Al, StSt, St/tZn and Cu.

With female thread



Type FBH ZS 30 ...	M8 V2A
Part No.	**274 030**
Material of conductor holder	StSt
Conductor support Fl	30 x 3.5 mm
Conductor support Rd	6-10 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Standard	EN 62561-4
PU	50 pc(s)

Pre-assembled with screw, plastic base and plug



Type FBH ZS 30 ...	KS KD8X40 V2A
Part No.	**274 230**
Material of conductor holder	StSt
Conductor support Fl	30 x 3.5 mm
Conductor support Rd	6-10 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
Standard	EN 62561-4
PU	50 pc(s)

Flat Strip Holders with Clamping Plate – Flat Design

Two-screw clamp with M6 screws.

With slot (6.5 x 16 mm)



Type FBH ZS ...	30 B6.5X16 STTZN	40 B6.5X16 STTZN
Part No.	**284 030**	**284 040**
Height of conductor holder	10 mm	10 mm
Conductor support Fl	30 x 3.5 mm	40 x 4-5 mm
Material of conductor holder	**St/tZn**	**St/tZn**
Material of base part	**St/tZn**	**St/tZn**
Width of component (l1)	58 mm	70 mm
Standard	EN 62561-4	EN 62561-4
PU	100 pc(s)	100 pc(s)

With slot (6.5 x 16 mm) and pre-assembled wood screw



Type FBH ZS ...	30 B6.5X16 HS5X50 STTZN	30 B6.5X16 HS5X50 V2A
Part No.	**286 030**	**286 139**
Height of conductor holder	10 mm	8.5 mm
Conductor support Fl	30 x 3.5 mm	30 x 3.5 mm
Material of conductor holder	**St/tZn**	StSt
Material of base part	**St/tZn**	StSt
Screw	5 x 50 mm	5 x 50 mm
Width of component (l1)	58 mm	58 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

Flat Strip Holders with Clamping Plate and Flange

Complete unit with flange for installing flat strips.

With female thread



Type FBH ZS 30 IGM8 ...	STTZN ZG
Part No.	**275 030**
Conductor support Fl	30 x 3.5 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamping plate	**St/tZn**
Material of base part	**ZDC**
Standard	EN 62561-4
PU	50 pc(s)

With female thread, pre-assembled with screw and plug



Type FBH ZS 30 IGM8 ...	KD8X40STTZN ZG
Part No.	**275 230**
Conductor support Fl	30 x 3.5 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamping plate	**St/tZn**
Material of base part	**ZDC**
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
Standard	EN 62561-4
PU	50 pc(s)

Non-Metallic Tape Clips

Non-Metallic conductor holders used for securing bare and PVC covered flat conductors to building surfaces.

For Bare and PVC Covered Flat Conductors



General technical data:	
Material	**PP** (UV stabilised)
Clamping range Fl	25 x 3 mm
Conductor Fixing	Press to fit
Recommended Fixings	Countersunk Wood Screws 1 ½" x No. 10 and No 10 Wall Plugs (To be Purchased Separately)
Standards	IEC / EN / BS EN 62561-4

Type TCC ...	BFL 25X3 BROWN PP	BFL 25X3 GREY PP
Part No.	**118 010**	**118 011**
Conductor Material	Bare (Copper, Tinned Copper, Aluminium, Stainless Steel)	Bare (Copper, Tinned Copper, Aluminium, Stainless Steel)
PVC Covering Thickness	–	–
Colour	Brown	Grey
PU	100 pc(s)	100 pc(s)

Type TCC ...	CFL 25X3 WHITE PP	CFL 25X3 STONE PP
Part No.	**118 025**	**118 024**
Conductor Material	PVC Covered (Copper, Tinned Copper, Aluminium, Stainless Steel)	PVC Covered (Copper, Tinned Copper, Aluminium, Stainless Steel)
PVC Covering Thickness	approx. 1 mm	approx. 1 mm
Colour	White	Stone
PU	100 pc(s)	100 pc(s)

Tape Conductor Holders

Conductor holders used for securing bare and PVC covered flat conductors to building surfaces.

Tape Conductor Holders

Holders for bare and PVC covered flat conductors.



General technical data:	
Material of screw	Stainless Steel
Tightening Torque	6 Nm
Recommended Fixings	Countersunk Wood Screws 1 ½" x 10 and No 10 Wall Plugs (To be Purchased Separately)
Standards	IEC / EN / BS EN 62561-4

Type	TCH BCU 25X3 HCA	TCH CCU 25X3 HCA
Part No.	**118 077**	**118 083**
Material	**High Copper Alloy**	**High Copper Alloy**
Conductor Material	Bare Copper	PVC Covered Copper
Clamping range Fl	25 x 3 mm	25 x 3 mm
PVC Covering Thickness	–	approx. 1 mm
Clamping screw	CSK M5 x 2 Nos	CSK M5 x 2 Nos
PU	50 pc(s)	50 pc(s)

Type	TCH BCCU 25.31X3.6 HCA	TCH BCCU 40.50X3.6 HCA
Part No.	**118 049**	**118 059**
Material	**High Copper Alloy**	**High Copper Alloy**
Conductor Material	Bare and PVC Covered Copper	Bare and PVC Covered Copper
Clamping range Fl	W (20 - 31 mm) x T (3 - 6 mm)	W (40 - 50 mm) x T (3 - 6 mm)
PVC Covering Thickness	approx. 1 mm	approx. 1 mm
Clamping screw	Cross head M5 x 2 Nos	Cross head M5 x 2 Nos
PU	50 pc(s)	50 pc(s)

Type	TCH BAL 25X3 ALA	TCH CAL 25X3 ALA
Part No.	**118 071**	**118 073**
Material	**Aluminium Alloy**	**Aluminium Alloy**
Conductor Material	Bare Aluminium	PVC Covered Aluminium
Clamping range Fl	25 x 3 mm	25 x 3 mm
PVC Covering Thickness	–	approx. 1 mm
Clamping screw	CSK M5 x 2 Nos	CSK M5 x 2 Nos
PU	50 pc(s)	50 pc(s)

Tape Conductor Clips

Tape Conductor Clips used for securing bare and PVC covered flat conductors flush to building surfaces.



General technical data:	
Clamping range Fl	25 x 3 mm
Recommended Fixings	2 x Countersunk Wood Screws 1 ½" x 10 and No 10 Wall Plugs (To be Purchased Separately)
Standards	IEC / EN / BS EN 62561-4

Type	TCC BCU 25X3 CU	TCC CCU 25X3 CU
Part No.	118 086	118 085
Material	Copper	Copper
Conductor Material	Bare Copper	PVC Covered Copper
PVC Covering Thickness	–	approx. 1 mm
PU	100 pc(s)	100 pc(s)

Type	TCC BAL 25X3 ALA	TCC CAL 25X3 ALA
Part No.	118 075	118 076
Material	Aluminium Alloy	Aluminium Alloy
Conductor Material	Bare Aluminium	PVC Covered Aluminium
PVC Covering Thickness	–	approx. 1 mm
PU	100 pc(s)	100 pc(s)

Flat Strip / Round Conductor Holders with Thrust Piece

For wall mounting.
Thrust piece with M8 screw for installing flat strips up to 11 mm and round conductors 6-10 mm.

Distance from wall 11 mm



General technical data:	
Fixing	Ø15 / 9 x 20 mm
Slot width	12 mm
Material of screw	StSt
Standard	EN 62561-4

Type FRH 11 6.10 ...	WA11 B7 STTZN	WA11 B7 CU
Part No.	277 230	277 237
Material of conductor holder	St/tZn	Cu
PU	25 pc(s)	25 pc(s)

Type FRH 11 6.10 ...	WA11 B7 V2A
Part No.	277 239
Material of conductor holder	StSt
PU	25 pc(s)

Distance from wall 15 mm



Type FRH 11 6.10 ...	WA15 B7 STTZN	WA15 B7 V2A
Part No.	277 240	277 249
Material of conductor holder	St/tZn	StSt
Fixing	7 x 15 mm	Ø15 / 9 x 20 mm
Slot width	12 mm	12 mm
Material of screw	StSt	StSt
Pressure plate material	StSt	StSt
Standard	EN 62561-4	EN 62561-4
PU	25 pc(s)	25 pc(s)

Anchors for Rigid Foam Boards

For fixing conductor, flat strip and rod holders in external thermal insulation composite systems.
With star drive (TX40).
Mounting with wood screws Ø4.5 mm.

This anchor may only be used for fixing conductor holders if there is no additional traction on the down conductor.

Short design



Type HSPD HS4.5 ...	L50 PA
Part No.	**200 600**
Material	**PA**
Thickness of insulating material	60 mm
Anchoring depth / length	50 mm
PU	50 pc(s)

Long design



Type HSPD HS4.5 ...	L85 PA
Part No.	**200 601**
Material	**PA**
Thickness of insulating material	100 mm
Anchoring depth / length	85 mm
PU	50 pc(s)

Wood Screws with Threaded Head

Hanger bolt for fixing conductor, flat strip and rod holders with female thread.



Type HSC ...	8X32 AGM8X13 STGALZN	8X42 AGM8X13 STGALZN
Part No.	**528 850**	**528 870**
Material	**St/gal Zn**	**St/gal Zn**
Thread	M8	M8
Total length (l1)	53 mm	73 mm
Thread length (l2)	32 mm	42 mm
PU	1 pc(s)	1 pc(s)



Earth Entry Rod Set

Complete with disconnecting sleeve and connection clamps (KS screws).

Type St/tZn

With disconnecting sleeve (Part No. 450 000) and KS screws (Part No. 300 000).



Type EESS 16 1500 TM 2KS7.10 ...	STTZN
Part No.	**480 150**
Material	**St/tZn**
Standard	EN 62561-(1+2)
Length	1500 mm
Connection KS screw Rd	7-10 mm
Connection sleeve Rd / Rd	7-10 / 16 mm
PU	1 pc(s)

Type Cu

With disconnecting sleeve (Part No. 450 007) and KS screws (Part No. 300 007).



Type EESS 16 1500 TM 2KS7.10 ...	CU
Part No.	**480 157**
Material	Cu
Standard	EN 62561-(1+2)
Length	1500 mm
Connection KS screw Rd	6-10 mm
Connection sleeve Rd / Rd	7-10 / 16 mm
PU	1 pc(s)

Heat-Shrinkable Sleeve

Heat-shrinkable sleeve for coating Rd and Fl conductors, e.g. when leading terminal lugs out of the concrete or earth entries out of the ground.
UV-stabilised, customised length.



Typ	SCSC 16 FL30 L...M SW
Art.-Nr.	**554 011**
For Rd	16 mm
For Fl	30 mm
Material	**DERAY**
Colour	black ●
PU	1 m

Earth Entry Rods

For connecting down conductors to the earth-termination system.

Chamfered



General technical data:			
Standard			EN 62561-2
Diameter Ø			16 mm

Type	FS 16 1500 STTZN	FS 16 2000 STTZN
Part No.	**483 150**	**483 200**
Material	**St/tZn**	**St/tZn**
Length (l1)	1500 mm	2000 mm
PU	10 pc(s)	1 pc(s)

Type EES 16 ...	1000 V4A	1500 V4A	2000 V4A
Part No.	**104 903**	**104 905**	**104 906**
Material	StSt (V4A)	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316	316Ti / 316L / 316
Length (l1)	1000 mm	1500 mm	2000 mm
PU	1 pc(s)	10 pc(s)	1 pc(s)

Tapered

Notched conductor Ø10 mm, partly insulated (length approx. 700 mm).



General technical data:			
Material			**St/tZn**
Diameter Ø			16 / 10 mm

Type	EES 16.10 1500 STTZN	EES 16.10 1750 STTZN
Part No.	**480 018**	**480 019**
Total length (l1)	1500 mm	1750 mm
Partial length Ø16 mm (l2)	1000 mm	750 mm
Partial length Ø10 mm (l3)	500 mm	1000 mm
PU	10 pc(s)	10 pc(s)

Type	EES 16.10 2000 STTZN	EES 16.10 2500 STTZN
Part No.	**480 020**	**480 021**
Total length (l1)	2000 mm	2500 mm
Partial length Ø16 mm (l2)	1000 mm	1500 mm
Partial length Ø10 mm (l3)	1000 mm	1000 mm
PU	10 pc(s)	1 pc(s)

Straightened / Angled Connection Lugs

For connecting down conductors to the earth-termination system; made of corrosion-resistant stainless steel.

Round wires



General technical data:		
Material		StSt (V4A)
Material No.		1.4571 / 1.4404
ASTM / AISI:		316Ti / 316L
Dimensions		Ø10 mm
Cross-section		78 mm²
Standard		EN 62561-2

Type AF ...	10 V4A 1000	10 V4A 1500
Part No.	860 110	860 115
Length (l1)	1000 mm	1500 mm
PU	5 pc(s)	5 pc(s)

Type AF ...	10 V4A 2000	10 V4A 3000
Part No.	860 129	860 130
Length (l1)	2000 mm	3000 mm
PU	5 pc(s)	5 pc(s)

Flat strips



General technical data:		
Material		StSt (V4A)
Material No.		1.4571 / 1.4404
ASTM / AISI:		316Ti / 316L
Dimensions		30 x 3.5 mm
Cross-section		105 mm²
Standard		EN 62561-2

Type AF ...	30X3.5 V4A 1000	30X3.5 V4A 1500
Part No.	860 210	860 215
Length (l1)	1000 mm	1500 mm
PU	5 pc(s)	5 pc(s)

Type AF ...	30X3.5 V4A 3000	30X3.5 V4A 4000
Part No.	860 230	860 240
Length (l1)	3000 mm	4000 mm
PU	5 pc(s)	5 pc(s)

Flat strips with holes

Holes at intervals of 500 mm.



Type AF ...	30X3.5 V4A B6.5X12 3000
Part No.	860 430
Material	StSt (V4A)
Material No.	1.4571 / 1.4404
ASTM / AISI:	316Ti / 316L
Length (l1)	3000 mm
Dimensions	30 x 3.5 mm
Fixing	[6x] 6.5 x 12 mm
Hole distance	500 mm
Cross-section	105 mm²
Standard	EN 62561-2
PU	5 pc(s)

Flat strips, angled

For wall mounting (without a gap) with holes for countersunk head screws.



Type AF ...	30X3.5 V4A ZW 1500	30X3.5 V4A ZW 3000
Part No.	860 315	860 330
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404	1.4571 / 1.4404
ASTM / AISI:	316Ti / 316L	316Ti / 316L
Length (l1)	1500 mm	3000 mm
Dimensions	30 x 3.5 mm	30 x 3.5 mm
Connection	disconnecting clamp or KS connector	disconnecting clamp or KS connector
Fixing	[3x] Ø6.5 mm	[6x] Ø6.5 mm
Hole distance	500 mm	500 mm
Cross-section	105 mm²	105 mm²
Standard	EN 62561-2	EN 62561-2
PU	5 pc(s)	5 pc(s)

Other dimensions are available upon request.

Marker for Connection Lugs

Attached to round wires or strips to make them conspicuous (as required by DIN 18014) during the construction work.



Type	SK RD10 FL30X3.5 GRGE PVC
Part No.	478 099
Material	PVC
Diameter Ø	70 mm
Fits on Fl	30 x 3.5 mm
Fits on Rd	10 mm
Colour	green ● / yellow ●
PU	20 pc(s)

Conductor Holder with Saddle Clamp – Flat Design

Two-screw clamp with two M6 screws, for round and flat conductors.
With plastic cover disc (grey).

Pre-assembled with wood screw, plastic cover disc (grey) and plug



Type	LH ZS 7.10 FL30 AS KD8X40 V2A
Part No.	286 819
Conductor support Rd	7-10 mm
Conductor support Fl	30 mm
Height of conductor holder	10 mm
Material of conductor holder	StSt
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
Standard	EN 62561-4
PU	50 pc(s)

Conductor Holders DEHNhold

Conductor holder with a slotted saddle clamp for fixing round conductors, fixed conductor routing.
For use with different materials, e.g. Al, StSt, St/tZn and Cu.

With female thread



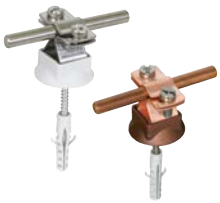
Type LH ZS ...	8.10 FL20 M8 V2A	8.10 FL20 M8 CU
Part No.	**274 110**	**274 117**
Material of conductor holder	StSt	StSt / gal Cu
Conductor support Rd	8-10 mm	8-10 mm
Conductor support Fl	20 mm	20 mm
Height of conductor holder	20 mm	20 mm
Thread of conductor holder	M8	M8
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

With female thread, pre-assembled with plastic base



Type LH ZS ...	8.10 FL20 M8 KS V2A
Part No.	**274 150**
Material of conductor holder	StSt
Conductor support Rd	8-10 mm
Conductor support Fl	20 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Standard	EN 62561-4
PU	50 pc(s)

With female thread, pre-assembled with screw, plastic base and plug



Type LH ZS ...	8.10 FL20 KS KD8X40 V2A	8.10 FL20 KS KD8X40 CU
Part No.	**274 160**	**274 167**
Material of conductor holder	StSt	StSt / gal Cu
Conductor support Rd	8-10 mm	8-10 mm
Conductor support Fl	20 mm	20 mm
Height of conductor holder	20 mm	20 mm
Thread of conductor holder	M8	M8
Plastic base	grey ●	brown ●
Screw	5 x 50 mm	5 x 50 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

With female thread, e.g. for round wire with plastic sheath



Type LH ZS ...	13 M8 V2A
Part No.	**274 113**
Material of conductor holder	StSt
Conductor support Rd	13 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
PU	50 pc(s)

Conductor Holders with Saddle Clamp and Flange

Complete unit with flange for installing conductors, fixed conductor routing.

With M8 female thread



Type LH ZS ...	7.10 IGM8 STTZN ZG
Part No.	**275 110**
Conductor support Rd	7-10 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamp	**St/tZn**
Material of base part	**ZDC**
Standard	EN 62561-4
PU	50 pc(s)

With female thread, pre-assembled with screw and plug



Type LH ZS ...	7.10 KD8X40 STTZN ZG
Part No.	**275 160**
Conductor support Rd	7-10 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamp	**St/tZn**
Material of base part	**ZDC**
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
Standard	EN 62561-4
PU	50 pc(s)

With female thread, e.g. for round wire with plastic sheath



Type LH ZS ...	13 IGM8 STTZN ZG
Part No.	**275 113**
Conductor support Rd	11-13 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamp	**St/tZn**
Material of base part	**ZDC**
PU	50 pc(s)

Rod Holders DEHNhold

For fixing air-termination and earth entry rods, with slotted saddle clamp, fixed conductor routing.
For use with different materials, e.g. Al, StSt, St/tZn and Cu.

With female thread



Type	LH ZS 16 M8 V2A
Part No.	**274 116**
Material of conductor holder	StSt
Conductor support Rd	16 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
PU	50 pc(s)

Pre-assembled with screw, plastic base and plug

With female thread.



Type	SH ZS 16 KS KD8X40 V2A
Part No.	**274 260**
Material of conductor holder	StSt
Conductor support Rd	16 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Screw	5 x 50 mm
Plastic dowel	Ø8 x 40 mm
PU	50 pc(s)

Rod Holders with Saddle Clamp and Flange

Complete unit with flange for installing air-termination and earth entry rods, fixed conductor routing.

With female thread



Type SH ZS 16 ...	M8 V2A
Part No.	**275 116**
Conductor support Rd	16 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of saddle clamp	**St/tZn**
Material of base part	**ZDC**
PU	50 pc(s)

Pre-assembled with screw and plug



Type SH ZS 16 ...	KD8X40 STTZN ZG
Part No.	**275 260**
Conductor support Rd	16 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of saddle clamp	**St/tZn**
Material of base part	**ZDC**
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
PU	50 pc(s)

Rod Holders DEHNfix

Two-in-one holder system (fixes the holder and the conductor), fixed conductor routing.
Only suitable for solid stone or concrete.



Type	SH DFI 16 STTZN H42 GR
Part No.	**252 000**
Material of saddle clamp	**St/tZn**
Material of base part	**plastic**
Colour of conductor holder	grey
Installation height of base part	42 mm
Conductor support Rd	16 mm
Nail plug	100 / 60 mm
Hole Ø for nail plug	10 mm
Drilling depth	60 mm
PU	50 pc(s)

Rod Holder with Claw

For wall mounting with M6 fixing screw, fixed conductor routing.



Type	SH KR 13.16 H28 B6.5 V2A
Part No.	**275 019**
Hole Ø	6.5 mm
Material of conductor holder	StSt
Height of conductor holder	28 mm
Conductor support Rd	13-16 mm
PU	50 pc(s)

Flat Strip Holders DEHNhold

For fixing flat conductors via a slotted clamp, fixed conductor routing.
For use with different materials, e.g. Al, StSt, St/tZn and Cu.

With female thread



Type FBH ZS 30 ...	M8 V2A
Part No.	**274 030**
Material of conductor holder	StSt
Conductor support Fl	30 x 3.5 mm
Conductor support Rd	6-10 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Standard	EN 62561-4
PU	50 pc(s)

Pre-assembled with screw, plastic base and plug



Type FBH ZS 30 ...	KS KD8X40 V2A
Part No.	**274 230**
Material of conductor holder	StSt
Conductor support Fl	30 x 3.5 mm
Conductor support Rd	6-10 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
Standard	EN 62561-4
PU	50 pc(s)

Flat Strip Holders with Clamping Plate – Flat Design

Two-screw clamp with M6 screws.

With slot (6.5 x 16 mm)



Type FBH ZS ...	30 B6.5X16 STTZN	40 B6.5X16 STTZN
Part No.	**284 030**	**284 040**
Height of conductor holder	10 mm	10 mm
Conductor support Fl	30 x 3.5 mm	40 x 4-5 mm
Material of conductor holder	**St/tZn**	**St/tZn**
Material of base part	**St/tZn**	**St/tZn**
Width of component (l1)	58 mm	70 mm
Standard	EN 62561-4	EN 62561-4
PU	100 pc(s)	100 pc(s)

With slot (6.5 x 16 mm) and pre-assembled wood screw



Type FBH ZS ...	30 B6.5X16 HS5X50 STTZN	30 B6.5X16 HS5X50 V2A
Part No.	**286 030**	**286 139**
Height of conductor holder	10 mm	8.5 mm
Conductor support Fl	30 x 3.5 mm	30 x 3.5 mm
Material of conductor holder	**St/tZn**	StSt
Material of base part	**St/tZn**	StSt
Screw	5 x 50 mm	5 x 50 mm
Width of component (l1)	58 mm	58 mm
Standard	EN 62561-4	EN 62561-4
PU	50 pc(s)	50 pc(s)

Flat Strip Holders with Clamping Plate and Flange

Complete unit with flange for installing flat strips.

With female thread



Type FBH ZS 30 IGM8 ...	STTZN ZG
Part No.	**275 030**
Conductor support Fl	30 x 3.5 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamping plate	**St/tZn**
Material of base part	**ZDC**
Standard	EN 62561-4
PU	50 pc(s)

With female thread, pre-assembled with screw and plug



Type FBH ZS 30 IGM8 ...	KD8X40STTZN ZG
Part No.	**275 230**
Conductor support Fl	30 x 3.5 mm
Thread of conductor holder	M8
Height of conductor holder	20 mm
Material of clamping plate	**St/tZn**
Material of base part	**ZDC**
Screw	5 x 50 mm
Plastic plug	Ø8 x 40 mm
Standard	EN 62561-4
PU	50 pc(s)

Flat Strip / Round Conductor Holders with Thrust Piece

For wall mounting.
Thrust piece with M8 screw for installing flat strips up to 11 mm and round conductors 6-10 mm.

Distance from wall 11 mm



General technical data:		
Fixing		Ø15 / 9 x 20 mm
Slot width		12 mm
Material of screw		StSt
Standard		EN 62561-4

Type FRH 11 6.10 ...	WA11 B7 STTZN	WA11 B7 CU
Part No.	**277 230**	**277 237**
Material of conductor holder	**St/tZn**	**Cu**
PU	25 pc(s)	25 pc(s)

Type FRH 11 6.10 ...	WA11 B7 V2A
Part No.	**277 239**
Material of conductor holder	StSt
PU	25 pc(s)

Distance from wall 15 mm



Type FRH 11 6.10 ...	WA15 B7 STTZN	WA15 B7 V2A
Part No.	**277 240**	**277 249**
Material of conductor holder	**St/tZn**	StSt
Fixing	7 x 15 mm	Ø15 / 9 x 20 mm
Slot width	12 mm	12 mm
Material of screw	StSt	StSt
Pressure plate material	StSt	StSt
Standard	EN 62561-4	EN 62561-4
PU	25 pc(s)	25 pc(s)

FIX Test Joint

With insulating piece and disconnetion lug.



Type	FTS 8.10 FL30.40 IS STTZN
Part No.	**453 100**
Material	**St/tZn**
Clamping range Rd / Fl	8-10 / 30-40 mm
Insulating piece	**plastic** grey
Standard	EN 62561-1
PU	10 pc(s)

Version for conductor Rd / Rd 8-10 mm part no. 453 102 available upon request.
*) For exact assignment, see test certificate.

UF Test Joint Boxes

For underground installation, for disconnecting the down conductor from the earth-termination system for measuring purposes.

Type GCI – with integrated, easily accessible test joint

Detachable with a key, including terminal for the down conductor and the earthing conductor, open (without bottom).



Type UFTSK ...	7.10 FL40 300X220X120 GG
Part No.	**549 001**
Material	**GCI**
Colour	black (varnished) ●
Dimensions	300 x 220 x 120 mm
Clamping range Rd / Fl	7-10 / 30-40 mm
Max. permissible load	40 kN
PU	1 pc(s)

Type GCI – without test joint

Open (without bottom).



Type UFTSK ...	300X220X120 GG
Part No.	**549 000**
Material	**GCI**
Colour	black (varnished) ●
Dimensions	300 x 220 x 120 mm
Max. permissible load	40 kN
PU	1 pc(s)

Type plastic – with integrated, easily accessible test joint

Detachable with a key, including terminal for the down conductor and the earthing conductor, open (without bottom).



Type UFTSK ...	7.10 FL40 197X197X204 K
Part No.	**549 050**
Material	**plastic**
Colour	grey ●
Dimensions	197 x 197 x 204 mm
Clamping range Rd / Fl	7-10 / 30-40 mm
Max. permissible load	15 kN
PU	1 pc(s)

Type plastic – without test joint

Open (without bottom).



Type UFTSK ...	197X197X204 K
Part No.	**549 051**
Material	**plastic**
Colour	grey ●
Dimensions	197 x 197 x 204 mm
Max. permissible load	15 kN
PU	1 pc(s)

Type StSt – with integrated, easily accessible test joint

Detachable with a key, including terminal for the down conductor and the earthing conductor, open (without bottom).



Type UFTSK ...	7.10 FL40 200X200X105 V2A
Part No.	**549 090**
Material	StSt
Dimensions	200 x 200 x 105 mm
Clamping range Rd / Fl	7-10 / 30-40 mm
Max. permissible load	40 kN
PU	1 pc(s)

Type StSt – without test joint

Open (without bottom).



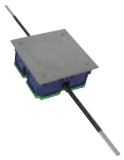
Type UFTSK ...	200X200X105 V2A
Part No.	**549 091**
Material	StSt
Dimensions	200 x 200 x 105 mm
Max. permissible load	40 kN
PU	1 pc(s)

Test Joint Boxes

For concrete construction with integrated test joint and special construction markings.

With rigid connection lugs

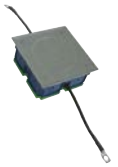
Rd 8 and Rd 10 mm, approx. 200 mm long (insulated).



Type TSK 140X140 V2A ...	AF8 10 L200 STTZN
Part No.	**476 010**
Material of box	**plastic**
Dimensions of box	140 x 140 x 68 mm
Material of cover	StSt
Dimensions of cover	160 x 160 mm
Standard	EN 62561-1
PU	1 pc(s)

With flexible connection cables

Made from CU (16 mm²) and cable lug made out of Cu/gal Sn (hole 10.5 mm).



Type TSK 140X140 V2A ...	AL16CU
Part No.	**476 016**
Material of box	**plastic**
Dimensions of box	140 x 140 x 68 mm
Material of cover	StSt
Dimensions of cover	160 x 160 mm
Standard	EN 62561
PU	1 pc(s)

Test Joint Box for External Thermal Insulation Composite Systems

The telescopic test joint box is particularly designed for external thermal insulation composite systems (full thermal insulation).
It is continuously adjustable from 90-140 mm. Thanks to the additional spacer, the test joint box can be used for insulation material thicknesses up to 320 mm.

Test joint box with spacer

For insualtion material thicknesses between 140 mm and 320 mm.



Type	TSKS WDVS 185X140X88 AH50.200 K V2A
Part No.	**476 055**
Material of box	**PC / ABS**
Dimensions of box	185 x 145 mm
Material of cover	StSt
Material of spacer	**PP**
Dimensions of spacer	120 x 120 x 200 mm
Installation depth	90-320 mm
PU	1 pc(s)

Test joint box

For insulation material thicknesses between 90 mm and 140 mm.



Type	TSK WDVS 180X140X88 K V2A
Part No.	**476 050**
Material of box	**PC / ABS**
Dimensions of box	185 x 145 mm
Material of cover	StSt
Installation depth	90-140 mm
PU	1 pc(s)

Separate spacer

With styrofoam core (no heat bridge) for combination with the test joint box. Can be shortened by 50 - 200 mm at 10 mm intervals.



Type	AH TSK WDVS 50.200 K
Part No.	**476 053**
Material of spacer	**PP**
Dimensions of spacer	120 x 120 x 200 mm
PU	1 pc(s)

Inspection Doors

For flush-mounted test joints.

Type StSt with square spanner

For screw mounting (holes Ø8-10 mm) with detachable door.



Type RTUP ...	290X230 VKS V2A
Part No.	476 020
Material	StSt
Mounting dimensions	200 x 140 mm
Dimensions	290 x 230 mm
PU	1 pc(s)

Type St/tZn with square spanner

For walling in / plastering, with claws (length 60 mm, distance 100 mm).



Type RTUP ...	230X180 VKS STTZN
Part No.	476 001
Material	St/tZn
Mounting dimensions	205 x 155 mm
Dimensions	230 x 180 mm
PU	10 pc(s)

Type St/tZn with snap lock

Light design for walling in / plastering, with claws (length 60 mm, distance 100 mm).



Type RTUP ...	230X180 SV STTZN
Part No.	476 100
Material	St/tZn
Mounting dimensions	205 x 155 mm
Dimensions	230 x 180 mm
PU	10 pc(s)

Carrier Plate for VDB Test Badge

For attaching the test badge to the down conductor or earth entry.



For round / flat conductors

Type	TS 7.10 FL30 PP V2A
Part No.	480 113
Material	StSt
Clamping range Rd / Fl	7-10 / 30 mm
Dimensions	84 x 58 x 1 mm
PU	50 pc(s)

Two-Screw Clamp

With M6 thread, for combination with the "Attention! Equipotential bonding" sign (Part No. 480 599) or e.g. with number plates.



Type ZSUEL ...	7.10 2XM6 LA38 AL
Part No.	480 291
Material	Al
Clamping range Rd / Fl	7-10 / 30 mm
PU	100 pc(s)

Variable Number Plates

Test joints, down conductors and connection lugs can be marked using the variable number plate. On site, the individual pre-embossed numbers can be quickly inserted into the plate without additional tools. This ensures uniform marking.

Assortment case for number plate, variable

Sortimo assortment case with number marking set.



Content:
100x each of number inset "0", "1", "2", "3", "4", "5", "6", "7", "8", "9"
100x number inset without embossment
100x variable number plate with slot
300x combination head screw StSt M6 x 16 mm
50x carrier plate StSt for VDB test badge
50x saddle clamp Al Rd 7-10 mm
50x saddle clamp Al Rd 16 mm

Type	NS SOB 0.9
Part No.	490 999
Material	Plastic
Dimensions	450 x 360 x 120 mm
PU	1 pc(s)

Variable number plate for round / flat conductors

Consisting of a number plate with slots (Part No. 490 100), a saddle clamp (Part No. 480 291) and two combination head screws (Part No. 490 020).



Type	NST 7.10 FL30 ON AL
Part No.	490 110
Material of plate	Al
Material of saddle clamp	Al
Clamping range Rd / Fl	7-10 / 30 mm
Material of screw	StSt
Screw	M6 x 16 mm
PU	50 pc(s)

Variable number plate for earth entry rods

Consisting of a number plate with slots (Part No. 490 100), a saddle clamp (Part No. 490 022) and two combination head screws (Part No. 490 020).



Type	NST 16 ON AL
Part No.	490 116
Material of plate	Al
Material of saddle clamp	Al
Clamping range Rd	16 mm
Material of screw	StSt
Screw	M6 x 16 mm
PU	50 pc(s)

Number plate with slots

Number plate to hold (un)embossed number insets (e.g. Part No. 490 001).



Type	NST ON AL
Part No.	490 100
Material	Al
PU	100 pc(s)

"Customised versions with company name and address are available on request."

Embossed number inset



Embossed number inset for slotting into the number plate (Part No. 490 100, 490 110, 490 116) without tools.

General technical data:	
Material	StSt

Type	NSE 0 V2A	NSE 1 V2A
Part No.	490 000	490 001
Number	0	1
PU	100 pc(s)	100 pc(s)

Type	NSE 2 V2A	NSE 3 V2A
Part No.	490 002	490 003
Number	2	3
PU	100 pc(s)	100 pc(s)

Type	NSE 4 V2A	NSE 5 V2A
Part No.	490 004	490 005
Number	4	5
PU	100 pc(s)	100 pc(s)

Type	NSE 6 V2A	NSE 7 V2A
Part No.	490 006	490 007
Number	6	7
PU	100 pc(s)	100 pc(s)

Type	NSE 8 V2A	NSE 9 V2A
Part No.	490 008	490 009
Number	8	9
PU	100 pc(s)	100 pc(s)

Plain number inset



Plain number inset for slotting into the number plate (Part No. 490 100, 490 110, 490 116) without tools.

Type	NSE BLANK AL
Part No.	490 900
Material	StSt
PU	100 pc(s)

Carrier plate for VDB test badge



For fixing the test badge on the down conductor or earth entry rod.

Type	TS 16 FL30 PP V2A
Part No.	490 021
Material	StSt
Dimensions	84 x 58 x 1 mm
PU	50 pc(s)

Combination head screw



Type	KSS M6X16 V2A
Part No.	490 020
Material	StSt
Screw	M6 x 16 mm
PU	100 pc(s)

Saddle clamp for number plate



Type	ZSUEL 7.10 2XM6 LA38 AL	ZSUEL 16 2XM6 LA38 V2A
Part No.	480 291	490 022
Material	Al	Al
Clamping range Rd / Fl	7-10 / 30 mm	–
Clamping range Rd	–	16 mm
PU	100 pc(s)	100 pc(s)

Accessories for Variable Number Plates

Assortment case, empty



Assortment case with inset boxes in different sizes for sorting the content, and with fast click system for safe transportation.

Type	NS SOB L
Part No.	490 099
Material	Plastic
Dimensions (l x w x h)	450 x 360 x 120 mm
PU	1 pc(s)

All number plates are available with different numbes or lettering on request!

Earth Rod Seals

Earth Rod Seals create a watertight sealing of the Earth Rod installation, available in various sizes to acommodate our Earth Rod Portfolio.

Double Flange



General technical data:	
Material	High density Polyethylene
Dimensions (Ø x h)	366 x 1280 mm
Tube Dimensions (Ø x h)	50 x 1200 mm
Standards	IEC / EN / BS EN 62561-5
Assembly instructions	Refer Instructions (2211)

Type ER SEAL 2FLANGE ...	5/8"PL	3/4"PL
Part No.	138 315	138 316
Rod Diameter	14.2 mm	17.2 mm
Rod type	5/8" Copper Bonded Earth Rod	3/4" Copper Bonded Earth Rod
PU	1 pc(s)	1 pc(s)

Type ER SEAL 2FLANGE ...	15 PL	16 PL
Part No.	138 320	138 321
Rod Diameter	15 mm	16 mm
Rod type	Copper / Nickel plated copper	Copper / Nickel plated copper / Stainless steel
PU	1 pc(s)	1 pc(s)

Type ER SEAL 2FLANGE ...	20 PL
Part No.	138 322
Rod Diameter	20 mm
Rod type	Copper / Nickel plated copper / Stainless steel
PU	1 pc(s)

Note : Earth Rod to be purchased separately.

Number plates that can be marked

Numbers from 1 to 999 and also certain combinations, such as A01, b02, C03, d04, etc., can be created with the 7-segment number plate and the accompanying paint marker. The special black paint marker has been tried and tested over a long period of time in use with the number plate, is highly opaque, dries quickly, is weatherproof and extremely light-resistant, as well as abrasion-resistant. Other paints or pens cannot be recommended.
The number plate without pre-embossing can be used for on-site marking with punched numbers 10 mm in size.



Number plate with 7-segment embossing for round / flat conductors

For on-site marking with a paint marker



Type NS ...	7.10 FL30 7SEG AL
Part No.	484 000
Material	Al
Clamping range Rd / Fl	7-10 / 30 mm
PU	50 pc(s)

Number plate with 7-segment embossing for earth entry rods

For on-site marking with a paint marker



Type NS ...	16 7SEG AL
Part No.	484 001
Material	Al
Clamping range Rd	16 mm
PU	50 pc(s)

Accessories for Number plates that can be marked

Edding Paint Marker

Paint marker for labelling the number plates with 7-segment embossment.



Type	EDD 780 SW
Part No.	484 010
Colour	black ●
PU	1 pc(s)

Without number for round / flat conductors

For on-site labelling with punched numbers 0-9, size 10 mm.



Type NS ...	7.10 FL30 OZ AL
Part No.	480 003
Material	Al
Clamping range Rd / Fl	7-10 / 30 mm
PU	50 pc(s)

Without number for earth entry rods

For on-site labelling with punched numbers 0-9, size 10 mm.



Type NS ...	16 OZ AL
Part No.	480 004
Material	Al
Clamping range Rd	16 mm
PU	50 pc(s)

All number plates are available with different numbes or lettering on request!

Earth Pits and Bonding Bars

The concrete inspection pit is classfied for heavy duty usage, suitable for most types of earthing and lightning protection installations.

Concrete Earth Pit

The concrete inspection pit is classfied for heavy duty usage, suitable for most types of earthing and lightning protection installations.



Type	ER INSPIT 320 160 CL
Part No.	138 091
Material	Concrete
Dimensions (l x w x h)	320 x 320 x 160 mm
Load Stress Classification	Class H
Load Capacity	50kN
Standards	IEC / EN / BS EN 62561-5
PU	1 pc(s)

Polymer Earth Pit

The polymer inspection pit is classfied for heavy duty usage, suitable for most types of earthing and lightning protection installations.



Type	ER INSPIT 308 308 214 PLL
Part No.	138 097
Material	Polymer Plastic
Dimensions (l x w x h)	308 x 308 x 214 mm
Load Stress Classification	Class H
Load Capacity	50kN
Standards	IEC / EN / BS EN 62561-5
PU	1 pc(s)

Earth Pit Bonding Bars

5-Hole Earth Bars can be installed in the slots of the Concrete and Polymer Earth Pits providing multiple conductor connections.



Type EB ...	SH 25X6 M10 285 CU
Part No.	138 094
Material	Copper
Number of Connections	5
Dimensions W x T	25 x 6 mm
Length L	285 mm
Hole size	M10
Recommended Fixings	Mounted in Earth Pit
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA
PU	1 pc(s)



MV Clamps

Multipurpose connecting clamp (**M**ehrzweck**V**erbindungs-Klemme) for universal use as a cross clamp, T clamp and parallel clamp; two-piece.

With hexagon screw

Thread in the base part.



General technical data:		
Standard		EN 62561-1

Type	MVK 8.10 SKM10X30 STTZN	MVK 8.10 SKM10X30 AL
Part No.	**390 050**	**390 051**
Material of clamp	**St/tZn**	**Al**
Clamping range Rd	8-10 mm	8-10 mm
Screw	M10 x 30 mm	M10 x 30 mm
Material of screw / nut	**St/tZn**	**StSt**
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	7.3 kA	–
PU	50 pc(s)	50 pc(s)

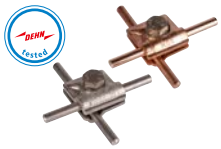
Type	MVK 8.10 SKM10X30 V2A	MVK 8 SKM10X30 CU
Part No.	**390 059**	**390 057**
Material of clamp	**StSt**	**Cu**
Clamping range Rd	8-10 mm	8 mm
Clamping range (stranded / cable)	–	25-70 mm²
Screw	M10 x 30 mm	M10 x 30 mm
Material of screw / nut	**StSt**	**StSt**
PU	50 pc(s)	50 pc(s)

Type	MVK 10 SKM10X35 STTZN	MVK 10 SKM10X35 V2A
Part No.	**391 050**	**391 059**
Material of clamp	**St/tZn**	**StSt**
Clamping range Rd	10 mm	10 mm
Screw	M10 x 35 mm	M10 x 35 mm
Material of screw / nut	**St/tZn**	**StSt**
PU	50 pc(s)	50 pc(s)

Type	MVK 8.10 SKM10X35 V4A	MVK 10 SKM10X35 V4A
Part No.	**390 079**	**391 058**
Material of clamp	**StSt (V4A)**	**StSt (V4A)**
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Clamping range Rd	8-10 mm	10 mm
Connection (solid / stranded)	35-70 mm²	–
Screw	M10 x 35 mm	M10 x 35 mm
Material of screw / nut	**StSt (V4A)**	**StSt (V4A)**
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	4.7 kA	–
PU	50 pc(s)	50 pc(s)

With hexagon screw and spring washer

Thread in the base part.



General technical data:		
Standard		EN 62561-1

Type	MVK 8.10 SKM10X30 FSC STTZN	MVK 8.10 SKM10X30 FSC AL
Part No.	**390 550**	**390 551**
Material of clamp	**St/tZn**	**Al**
Clamping range Rd	8-10 mm	8-10 mm
Screw	M10 x 30 mm	M10 x 30 mm
Material of screw / nut	**St/tZn**	**StSt**
PU	50 pc(s)	50 pc(s)

Type	MVK 8.10 SKM10X35 FSC STBL	MVK 8.10 SKM10X30 FSC V2A
Part No.	**390 553**	**390 559**
Material of clamp	**St/bare**	**StSt**
Clamping range Rd	8-10 mm	8-10 mm
Screw	M10 x 35 mm	M10 x 30 mm
Material of screw / nut	**St/bare**	**StSt**
PU	50 pc(s)	50 pc(s)

Type	MVK 8 SKM10X30 FSC CU	MVK 10 SKM10X35 FSC STTZN
Part No.	**390 557**	**391 550**
Material of clamp	**Cu**	**St/tZn**
Clamping range Rd	8 mm	10 mm
Screw	M10 x 30 mm	M10 x 35 mm
Material of screw / nut	**StSt**	**St/tZn**
PU	50 pc(s)	50 pc(s)

With hexagon screw and spring washer for air-termination rods

Thread in the base part



Type	MVK 8.10 16 SKM10X40 FSC STTZN	MVK 8.10 16 SKM10X40 FSC V2A
Part No.	**392 050**	**392 059**
Material of clamp	**St/tZn**	StSt
Clamping range Rd	8-10 / 16 mm	8-10 / 16 mm
Screw	M10 x 40 mm	M10 x 40 mm
Material of screw / nut	**St/tZn**	StSt
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

With truss head screw for air-termination rods

and anti-rotation protection (square hole in the upper part).



Type	MVK 8.10 16 FRM10X40 STTZN	MVK 8.10 16 FRM10X40 V2A
Part No.	**392 060**	**392 069**
Material of clamp	**St/tZn**	StSt
Clamping range Rd	8-10 / 16 mm	8-10 / 16 mm
Screw	M10 x 40 mm	M10 x 40 mm
Material of screw / nut	**St/tZn**	StSt
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

Bimetallic MV clamp

For connecting conductors made of different materials, with intermediate plate (Cupal) and thread in the base part.



Type	ZMMVK 8 8.10 SKM10X30 CU AL
Part No.	**390 657**
Material of clamp	Cu / Al
Clamping range Rd Cu	8 mm
Clamping range Rd Al	8-10 mm
Screw	M10 x 30 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	50 pc(s)

With truss head screw

and anti-rotation protection (square hole in the upper part).



General technical data:	
Standard	EN 62561-1

Type	MVK 8.10 FRM10X35 STTZN	MVK 8.10 FRM10X35 AL
Part No.	**390 060**	**390 061**
Material of clamp	**St/tZn**	Al
Clamping range Rd	8-10 mm	8-10 mm
Screw	M10 x 35 mm	M10 x 35 mm
Material of screw / nut	**St/tZn**	**St/tZn**
PU	50 pc(s)	50 pc(s)

Type	MVK 8 FRM10X35 CU	MVK 10 FRM10X35 STTZN
Part No.	**390 067**	**391 060**
Material of clamp	Cu	**St/tZn**
Clamping range Rd	8 mm	10 mm
Clamping range (stranded / cable)	25-70 mm²	–
Screw	M10 x 35 mm	M10 x 35 mm
Material of screw / nut	StSt	**St/tZn**
PU	50 pc(s)	50 pc(s)

Type	MVK 10 FRM10X35 V2A	MVK 8.10 FRM10X35V2A STTZN
Part No.	**391 069**	**390 063**
Material of clamp	StSt	**St/tZn**
Clamping range Rd	10 mm	8-10 mm
Screw	M10 x 35 mm	M10 x 35 mm
Material of screw / nut	StSt	StSt
PU	50 pc(s)	50 pc(s)

Type	MVK 10 FRM10X45 V4A	MVK 10 FRM10X35 V4A
Part No.	**391 068**	**391 066**
Material of clamp	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Clamping range Rd	10 mm	10 mm
Screw	M10 x 45 mm	M10 x 35 mm
Material of screw / nut	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
PU	50 pc(s)	50 pc(s)

MV clamps, with locking lug

Multi-purposeconnecting clamp with locking lug for universal use as a cross clamp, T clamp and parallel clamp; two-part

- Secure locking of the MV clamp in a cross arrangement
- Time saving during installation due to screw-in technology

With truss head screw



Multi-purpose connecting clamp for universal use as a cross clamp, T clamp and parallel clamp for aboveground and underground connections.
The locking lug is used to lock the MV clamp securely in a cross arrangement.

Type MVK AR 8.10 ...	FRM10X40 V4A
Part No.	**391 070**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd	8-10 mm
Screw	M10 x 40 mm
Material of screw / nut	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	9.8 *) kA
PU	50 pc(s)

With hexagon screw



Multi-purpose connecting clamp for universal use as a cross clamp, T clamp and parallel clamp for aboveground and underground connections.
The locking lug is used to lock the MV clamp securely in a cross arrangement.

Type MVK AR 8.10 ...	SKM10X40 V4A
Part No.	**391 079**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd	8-10 mm
Clamping range (stranded / cable)	35-70 mm²
Screw	M10 x 40 mm
Material of screw / nut	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	9.8 *) kA
PU	50 pc(s)

MMV Clamps

Mini multipurpose connecting clamp (Mini-Mehr-zweckVerbindungs-Klemme) for universal use as a cross clamp, T clamp and parallel clamp, with anti-rotation protection.

With truss head screw

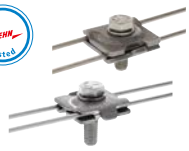


General technical data:	
Clamping range Rd	6-8 mm
Standard	EN 62561-1

Type	MMVK 6.8 FRM10X35 STTZN	MMVK 6.8 FRM10X35 CU
Part No.	**390 250**	**390 257**
Material of clamp	**St/tZn**	**Cu**
PU	50 pc(s)	50 pc(s)

Type	MMVK 6.8 FRM10X35 V2A
Part No.	**390 259**
Material of clamp	StSt
PU	50 pc(s)

With hexagon screw



Type	MMVK 3.5 8.10 SKM8X30 STBLANK	MMVK 3.5 8.10 SKM8X30 V4A
Part No.	**390 565**	**540 271**
Material of clamp	**St/bare**	StSt (V4A)
Material No.	–	1.4571 / 1.4404 / 1.4401
Clamping range Rd	–	3-10 mm
Connection (solid/ stranded)	–	16 mm²
Clamping range Rd / Rd	8-10 / 3-5 mm	–
Clamping range Rd / Rd	3-5 / 3-5 mm	–
Standard	EN 62561-1	based on EN 62561-1
PU	50 pc(s)	50 pc(s)

Bimetallic MMV clamp



For connecting conductors made of different materials, with intermediate plate (Cupal).

Type	ZMMVK 6.8 FRM10X35 CU STTZN
Part No.	**390 267**
Material of clamp	**Cu / St/tZn**
Clamping range Rd Cu	6-8 mm
Clamping range Rd St/tZn	6-8 mm
Standard	EN 62561-1
PU	50 pc(s)

MAXI MV Clamps

MAXI multipurpose connecting clamp (**M**AXI-**M**ehr-zweck**V**erbindungs-Klemme) for universal use as cross clamp, T clamp and parallel clamp, for connecting earth rods or reinforcements; three-part, with thread in the base part.

With hexagon screw



Type MAMVK ...	8.16 15.25 STTZN	8.16 15.25 STBL
Part No.	**308 041**	**308 040**
Material of clamp	**St/tZn**	**St/bare**
Clamping range Rd	8-16 / 15-25 mm	8-16 / 15-25 mm
Material thickness	3.0 / 2.0 mm	3.0 / 2.0 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	6.2 kA	10.2 kA
Approvals	–	UL 467
Stock No.	5999-12-362-1557	–
PU	20 pc(s)	20 pc(s)

With defined tightening torque

Same design as Part No. 308 041, but with StSt (V2A) M12x65 mm AF10 tear-off screw, with tear-off torque 35 +/-3 Nm, instead of standard hexagon head screw



- Reliable mounting quality due to constant torque and defined clamping force
- Easy mounting without torque spanner
- Enormously time saving compared to exothermic welding
- No welding smoke hazard for the installer
- No environmental risk

Type MAMVK 8.16 15.25 ...	STTZN ARS35NM PAR 20P
Part No.	**308 044**
Material of clamp	**St/tZn**
Clamping range Rd	8-16 / 15-25 mm
Material thickness	3.0 / 2.0 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	6.2 kA
PU	20 pc(s)

Clamping Piece Variants

For example as a connection with end piece for constructions or downpipe clamps.
Clamping piece with square hole 11 mm and truss head screw.



General technical data:	
Clamping range Rd	6-10 mm
Screw	M10 x 35 mm
Standard	EN 62561-1

Type KB 6.10 FRM10X35 ...	STTZN	CU
Part No.	**390 150**	**390 157**
Material of clamp	**St/tZn**	**Cu**
Clamping range (stranded / cable)	–	35-120 mm²
Material of screw / nut	**St/tZn**	**StSt**
PU	100 pc(s)	1 pc(s)

Type KB 6.10 FRM10X35 ...	V2A
Part No.	**390 159**
Material of clamp	**StSt**
Material of screw / nut	**StSt**
PU	100 pc(s)

KS Connectors

Clamping screw connector (KlemmSchrau-ben-Verbinder) for lightning current carrying connec-tion of round conductors, e.g. to flat profiles, downpipe clamps or other parts of the lightning protection system.

One-piece, St/tZn

With screw and nut M10.



Type	KSV 7.10 STTZN	KSV 7.10 FER STTZN
Part No.	**301 000**	**301 010**
Material of clamping screw	**St/tZn**	**St/tZn**
Material of clamp	**ZDC**	**ZDC**
Clamping range Rd	7-10 mm	7-10 mm
Type	–	+ spring washer
Standard	EN 62561-1	EN 62561-1
PU	100 pc(s)	100 pc(s)

One-piece, Cu

With screw and nut M10.



Type	KSV 6.10 CU	KSV 6.10 FER CU
Part No.	**301 007**	**301 017**
Material of clamping screw	**Cu**	**Cu**
Material of clamp	**high copper alloy**	**high copper alloy**
Clamping range Rd	6-10 mm	6-10 mm
Connection (single-wire / multi-wire)	16-50 mm²	25-70 mm²
Type	–	+ spring washer
Standard	EN 62561-1	EN 62561-1
PU	100 pc(s)	100 pc(s)

One-piece, StSt

With screw and nut M10.



General technical data:	
Clamping range Rd	6-10 mm
Standard	EN 62561-1

Type	KSV 6.10 V2A	KSV 6.10 V4A
Part No.	**301 009**	**301 089**
Material of clamping screw	**StSt**	**StSt (V4A)**
Material of clamp	**StSt**	**StSt (V4A)**
Connection (single-wire / multi-wire)	25-70 mm²	25-70 mm²
PU	100 pc(s)	100 pc(s)

Type	KSV 6.10 FER V2A	KSV 6.10 FER V4A
Part No.	**301 019**	**301 099**
Material of clamping screw	**StSt**	**StSt (V4A)**
Material of clamp	**StSt**	**StSt (V4A)**
Connection (single-wire / multi-wire)	25-70 mm²	25-70 mm²
Type	+ spring washer	+ spring washer
PU	100 pc(s)	100 pc(s)

Type	UKSV 6.10 AQ16 50 V4A
Part No.	**540 122**
Material of clamping screw	**StSt (V4A)**
Material of clamp	**StSt (V4A)**
Connection (single-wire / multi-wire)	16-50 mm²
Type	+ spring washer
PU	25 pc(s)

One-piece, long, StSt

With screw and nut M10, length 60 mm.

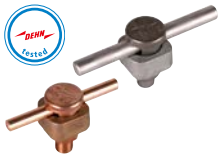


Type	KSVL 6.10 FER V2A
Part No.	**301 020**
Material of clamping screw	StSt
Material of clamp	StSt
Clamping range Rd	6-10 mm
Connection (single-wire / multi-wire)	25-70 mm²
Type	+ spring washer
Standard	EN 62561-1
PU	50 pc(s)

*) For exact classification, see test certificate.

Heavy design

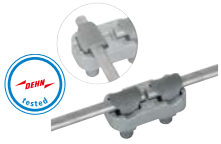
With screw and nut M12.



Type	KSV 8.12.5 STTZN	KSV 8.12.5 CU
Part No.	**300 002**	**300 017**
Material of clamping screw	St/tZn	Cu
Material of clamp	MCI	high copper alloy
Clamping range Rd	8-12.5 mm	8-12.5 mm
Connection (single-wire / multi-wire)	50-95 mm²	50-95 mm²
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	1 pc(s)

Two-piece, gap 30 mm

With screw and nut M10.



Type	KSV 2X7.10 STTZN
Part No.	**302 010**
Material of clamping screw	St/tZn
Material of clamp	ZDC
Clamping range Rd	7-10 mm
Standard	EN 62561-1
PU	50 pc(s)

Two-piece, gap 40 mm

With screw and nut M10.



Type	AP 2X6.10 V2A
Part No.	**301 229**
Material of clamping screw	StSt
Material of clamp	StSt
Clamping range Rd	6-10 mm
Type	+ spring washer
Standard	EN 62561-1
PU	1 pc(s)

*) For exact classification, see test certificate.

Connectors

For connecting round conductors in T and longitudinal arrangements.

EST connector

One-screw T connector.



Type	ESTV 8 RG
Part No.	**310 008**
Material of clamp	ZDC
Clamping range Rd	8 mm
Standard	EN 62561-1
PU	50 pc(s)

ES connectors

One-screw connectors for longitudinal arrangements.



Type	ESV 8 ZG	ESV 8 RG
Part No.	**309 008**	**309 087**
Material of clamp	ZDC	high copper alloy
Clamping range Rd	8 mm	8 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

ES Disconnecting Clamp

Single-screw disconnecting clamp (Ein-Schrauben-Trennklemme) for connecting down conductors with earth entries.



Type	ESTK 8.10 ZG
Part No.	**463 010**
Material	ZDC
Clamping range Rd / Rd	8 / 10 mm
Standard	EN 62561-1
PU	50 pc(s)

Universal Connector

For connecting round conductors in cross, T, and parallel arrangements and for twin conductor connection.



Type	UV 8.10 KTP V2A
Part No.	**315 119**
Material of clamp	StSt
Clamping range Rd	8-10 mm
Standard	EN 62561-1
PU	50 pc(s)

Parallel Connectors

For connecting two conductors in parallel arrangement.

For equal diameters with one screw



Type PV ...	7.10 FRM10X35 STTZN	7.10 FRM10X35 V4A
Part No.	**306 020**	**306 029**
Material of clamp	**St/tZn**	**StSt (V4A)**
Material No.	–	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	–	316Ti / 316L / 316
Clamping range Rd / Rd	7-10 mm	7-10 mm
Clamping range (stranded / cable)	–	25-120 mm²
Standard	EN 62561-1	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	4.0 kA	2.9 kA
PU	50 pc(s)	50 pc(s)

For equal diameters with two screws



Type PV ...	7.10 SKM8X20 STTZN	7.10 SKM8X20 CU
Part No.	**307 000**	**307 007**
Material of clamp	**St/tZn**	**Cu**
Clamping range Rd / Rd	7-10 mm	7-10 mm
Clamping range (stranded / cable)	–	16-95 mm²
Standard	EN 62561-1	EN 62561-1
Stock No.	5999-12-158-2303	–
PU	50 pc(s)	50 pc(s)

For different diameters with one screw



Type PV ...	6.22 FRM10X40 STBLANK	6.22 FRM10X40 STTZN
Part No.	**306 121**	**306 122**
Material of clamp	**St/bare**	**St/tZn**
Clamping range Rd / Rd	6-22 / 6-22 mm	6-22 / 6-22 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	6.1 kA	6.1 kA
PU	50 pc(s)	50 pc(s)

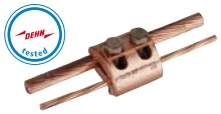
For different diameters 4-10 mm with two scews



Type PV ...	4.10 SKM8X30 STTZN	4.10 SKM8X30 CU
Part No.	**305 000**	**305 007**
Material of clamp	**St/tZn**	**Cu**
Clamping range Rd / Rd	4-10 mm	4-10 mm
Clamping range (stranded / cable)	–	10-70 mm²
Standard	EN 62561-1	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	–	13.6 kA
PU	50 pc(s)	50 pc(s)

For equal and different cable diameters, small

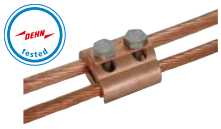
With thread in the base part and lock nut M8.
Specified short-circuit current applies to 70 mm² Cu cable.



Type PV ...	5.12.5 SKM8X45 CU
Part No.	**306 100**
Material of clamp	**Cu**
Clamping range Rd / Rd	5-12.5 mm
Clamping range (stranded / cable)	16-95 mm²
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	13.6 kA
PU	25 pc(s)

For equal and different cable diameters, large

With thread in the base part and lock nut M10.
Specified short-circuit current applies to 70 mm² Cu cable.



Type PV ...	5.16 SKM10X50 CU
Part No.	**306 101**
Material of clamp	**Cu**
Clamping range Rd / Rd	5-16 mm
Clamping range (stranded / cable)	16-150 mm²
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	13.6 kA
PU	25 pc(s)

Connecting Sleeves

For longitudinal connection of two round conductors with four screws.

ZDC 8



Type VM ...	8 SKM6X10 ZG
Part No.	**385 203**
Material of clamp	**ZDC**
Clamping range Rd	8 mm
Screw	M6 x 10 mm
Standard	EN 62561-1
PU	50 pc(s)

ZDC 7-10



Type VM ...	7.10 SKM6X12 ZG
Part No.	**385 202**
Material of clamp	**ZDC**
Clamping range Rd	7-10 mm
Screw	M6 x 12 mm
Standard	EN 62561-1
PU	50 pc(s)

Al 8



Type VM ...	8 SKM6X8 AL
Part No.	385 213
Material of clamp	Al
Clamping range Rd	8 mm
Screw	M6 x 8 mm
Standard	EN 62561-1
PU	50 pc(s)

Cu 8



Type VM ...	8 SKM6X8 CU
Part No.	385 207
Material of clamp	Cu
Clamping range Rd	8 mm
Screw	M6 x 8 mm
Standard	EN 62561-1
PU	50 pc(s)

Cross Units for Aboveground Connections

of conductors in cross, parallel and T arrangement.

Without intermediate plate



Type KS 8.10 8.10 FL30 OV ...	STTZN	CU
Part No.	314 300	314 307
Material of clamp	St/tZn	Cu
Clamping range Rd / Rd	8-10 / 8-10 mm	8-10 / 8-10 mm
Clamping range Rd / Fl	8-10 / 30 mm	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
Clamping range (stranded / cable)	–	35-70 mm²
Dimensions	50 x 50 x 2.5 mm	50 x 50 x 2.5 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

With intermediate plate



Type KS 8.10 8.10 FL30 OV ...	ZP STTZN
Part No.	314 310
Material of clamp	St/tZn
Clamping range Rd / Rd	8-10 / 8-10 mm
Clamping range Rd / Fl	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm
Dimensions	50 x 50 x 2.5 mm
Standard	EN 62561-1
PU	50 pc(s)

Cross Units for Aboveground and Underground Connections

of conductors in cross, parallel and T arrangement.

With intermediate plate, for round and flat conductors



General technical data:		
Clamping range Rd / Rd		8-10 / 8-10 mm
Clamping range Rd / Fl		8-10 / 30 mm
Clamping range Fl / Fl		30 / 30 mm
Dimensions		60 x 60 x 3 mm
Standard		EN 62561-1

Type KS ...	8.10 8.10 FL30 ZP STTZN	8.10 8.10 FL30 ZP CU
Part No.	319 201	319 207
Material of clamp	St/tZn	Cu
Clamping range (stranded / cable)	–	35-70 mm²
ASTM / AISI:	–	316Ti / 316L / 316
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	14 kA	29 kA
PU	25 pc(s)	25 pc(s)

Type KS ...	8.10 8.10 FL30 ZP V4A
Part No.	319 209
Material of clamp	StSt (V4A)
Clamping range (stranded / cable)	35-70 mm²
ASTM / AISI:	316Ti / 316L / 316
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	7 kA
PU	25 pc(s)

With intermediate plate, for round and flat conductors up to 40 mm



Type KS ...	8.10 FL40 STTZN	8.10 FL40 CU
Part No.	321 045	321 047
Material of clamp	St/tZn	Cu
Clamping range Rd / Fl	8-10 / 30-40 mm	8-10 / 30-40 mm
Clamping range Fl / Fl	30-40 / 30-40 mm	30-40 / 30-40 mm
Clamping range (stranded / cable)	–	35-120 mm²
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions	70 x 70 x 3 mm	70 x 70 x 3 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	12.6 kA	35.1 kA
PU	25 pc(s)	25 pc(s)

With intermediate plate, for two round and flat conductors up to 40 mm



Type KS ...	7.10 7.10 FL40 ZP V4A
Part No.	319 229
Material of clamp	StSt (V4A)
Clamping range Rd / Rd	7-10 / 7-10 mm
Clamping range Rd / Fl	7-10 / 30-40 mm
Clamping range Fl / Fl	30-40 / 30-40 mm
Clamping range (stranded / cable)	35-95 mm²
ASTM / AISI:	316Ti / 316L / 316
Dimensions	70 x 70 x 3 mm
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	5.0 kA
PU	25 pc(s)

With intermediate plate, for earth entries / air-termination rods



Type KS ...	8.10 16 FL30 ZP STTZN	8.10 16 FL30 ZP V4A
Part No.	**319 202**	**319 219**
Material of clamp	**St/tZn**	StSt (V4A)
Clamping range Rd / Rd	16 / 8-10 mm	16 / 8-10 mm
Clamping range Rd / Fl	16 / 30 mm	16 / 30 mm
Clamping range (stranded / cable)	–	35-120 mm²
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions	60 x 60 x 3 mm	60 x 60 x 3 mm
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Without intermediate plate, for round and flat conductors



General technical data:	
Clamping range Rd / Fl	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm
Dimensions	60 x 60 x 3 mm
Standard	EN 62561-1

Type KS ...	8.10 FL30 STTZN	8.10 FL30 CU
Part No.	**318 201**	**318 207**
Material of clamp	**St/tZn**	Cu
Clamping range (stranded / cable)	–	35-120 mm²
ASTM / AISI:	–	316Ti / 316L / 316
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	14 kA	29 kA
PU	25 pc(s)	1 pc(s)

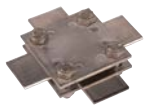
Type KS ...	8.10 FL30 V4A
Part No.	**318 209**
Material of clamp	StSt (V4A)
Clamping range (stranded / cable)	35-120 mm²
ASTM / AISI:	316Ti / 316L / 316
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	7.4 kA
PU	25 pc(s)

Without intermediate plate, for two round and flat conductors



Type KS ...	8.10 8.10 FL30 STTZN	8.10 8.10 FL30 V4A
Part No.	**318 251**	**318 219**
Material of clamp	**St/tZn**	StSt (V4A)
Clamping range Rd / Rd	8-10 / 8-10 mm	8-10 / 8-10 mm
Clamping range Rd / Fl	8-10 / 30 mm	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
Clamping range (stranded / cable)	–	35-120 mm²
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions	60 x 60 x 3 mm	60 x 60 x 3 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	14 kA	7.4 kA
PU	25 pc(s)	25 pc(s)

Without intermediate plate, for two flat conductors



Type KS ...	FL30 STTZN	FL30 V4A
Part No.	**318 033**	**318 233**
Material of clamp	**St/tZn**	StSt (V4A)
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions	60 x 60 x 3 mm	60 x 60 x 3 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	8.4 kA	7.0 kA
PU	25 pc(s)	25 pc(s)

Without intermediate plate, for two flat conductors up to 40 mm



Type KS ...	FL40 STTZN
Part No.	**320 044**
Material of clamp	**St/tZn**
Clamping range Fl / Fl	30-40 / 30-40 mm
Dimensions	70 x 70 x 3 mm
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	12.6 kA
PU	25 pc(s)

Cross Units with Truss Head Screws for Aboveground and Underground Connections

of conductors in cross, parallel and T arrangement. Version with anti-rotation protection for mounting with a tool.

With intermediate plate for round and flat conductors



Type KS 8.10 ...	8.10 FL30 ZP FRSM8 STTZN	8.10 FL30 ZP FRSM8 V4A
Part No.	**318 203**	**318 229**
Material of clamp	**St/tZn**	StSt (V4A)
ASTM / AISI:	–	316Ti / 316L / 316
Clamping range Rd / Rd	8-10 / 8-10 mm	8-10 / 8-10 mm
Clamping range Rd / Fl	8-10 / 30 mm	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
Clamping range (stranded / cable)	–	35-70 mm²
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions	60 x 60 x 3 mm	60 x 60 x 3 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	14 kA	7 kA
PU	1 pc(s)	25 pc(s)

Without intermediate plate for round and flat conductors



Type KS 8.10 ...	FL30 FRSM8 STTZN	FL30 FRSM8 V4A
Part No.	**318 205**	**318 239**
Material of clamp	**St/tZn**	StSt (V4A)
ASTM / AISI:	–	316Ti / 316L / 316
Clamping range Rd / Fl	8-10 / 30 mm	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
Clamping range (stranded / cable)	–	35-120 mm²
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions	60 x 60 x 3 mm	60 x 60 x 3 mm
Standard	EN 6561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	14 kA	7.4 kA
PU	25 pc(s)	25 pc(s)

SV Clamps for Underground Connections

SV (angled connector) clamps for cross, parallel and T connections.



Type	SVK 6.28 FL30 STBL
Part No.	**308 062**
Material of clamp	**St/bare**
Clamping range Rd / Fl	6-28 / 30 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	7.3 kA
PU	50 pc(s)

SV Clamps for Aboveground and Underground Connections

SV (angled connector) clamps for cross, parallel and T connections, with anti-rotation protection of the screws.

For flat and round conductors



General technical data:		
Clamping range Rd / Rd		7-10 / 7-10 mm
Screw		M10 x 30 mm
Standard		EN 62561-1

Type SVK ...	7.10 7.10 FL30 STTZN	7.10 7.10 FL30 V4A
Part No.	**308 220**	**308 229**
Material of clamp	**St/tZn**	StSt (V4A)
Clamping range Rd / Fl	7-10 / 30 mm	7-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions (l1 x d1)	94 x 4 mm	94 x 3 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	7.3 kA	3.2 kA
PU	25 pc(s)	25 pc(s)

Type SVK ...	7.10 7.10 FL40 STTZN	7.10 7.10 FL40 V4A
Part No.	**308 320**	**308 329**
Material of clamp	**St/tZn**	StSt (V4A)
Clamping range Rd / Fl	7-10 / 30-40 mm	7-10 / 30-40 mm
Clamping range Fl / Fl	30-40 / 30-40 mm	30-40 / 30-40 mm
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions (l1 x d1)	108 x 4 mm	108 x 3 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	14.0 kA	14.0 kA
PU	25 pc(s)	25 pc(s)

For one flat and round conductor or two flat conductors



Type SVK ...	7.10 FL30 V4A
Part No.	**308 249**
Material of clamp	StSt (V4A)
Clamping range Rd / Fl	7-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm
Screw	M10 x 30 mm
ASTM / AISI:	316Ti / 316L / 316
Dimensions (l1 x d1)	94 x 3 mm
Standard	EN 62561-1
PU	25 pc(s)

For flat conductors



Type SVK ...	FL30 STTZN	FL30 V4A
Part No.	**308 230**	**308 239**
Material of clamp	**St/tZn**	StSt (V4A)
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
Screw	M10 x 30 mm	M10 x 30 mm
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions (l1 x d1)	94 x 4 mm	94 x 3 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	8.2 kA	3.9 kA
PU	25 pc(s)	25 pc(s)

For flat conductors, round conductors and earth entry rods



Type SVK ...	7.10 16 FL40 STTZN
Part No.	**308 330**
Material of clamp	**St/tZn**
Clamping range Rd / Rd	7-10 / 16 mm
Clamping range Rd / Fl	16 / 30-40 mm
Screw	M10 x 30 mm
Dimensions (l1 x d1)	108 x 4 mm
Standard	EN 62561-1
PU	25 pc(s)

SVP Clamps for Aboveground and Underground Connections

Diagonal and parallel connecting clamps (Schräg-Verbinder-Parallel-Klemmen) for cross and parallel connections, with slotted upper part (no need to detach the screws).



Type SVPK 8.10 8.10 ...	FL30 STTZN	FL30 V4A
Part No.	**308 060**	**308 069**
Material of clamp	**St/tZn**	StSt (V4A)
Clamping range Rd / Rd	8-10 / 8-10 mm	8-10 / 8-10 mm
Clamping range Rd / Fl	8-10 / 30 mm	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

Connection Clamps

For connection to steel constructions and steel sheets.

Lengthwise or crosswise connection



Type AK 7.10 ...	FRM10X45 KBF0.4 12 TGTZN	FRM10X45 KBF0.4 12 RG
Part No.	**371 009**	**371 007**
Clamping range	0.4-12 mm	0.4-12 mm
Material of clamp	**MCI/tZn**	**high copper alloy**
Clamping range Rd	7-10 mm	7-10 mm
Standard	EN 62561-1	EN 62561-1
PU	20 pc(s)	1 pc(s)

Connection Clamps for Steel Girders

Heavy design, for connection to steel constructions.

Vertical design, with clamping piece

Lengthwise or crosswise connection with clamping piece.



General technical data:	
Clamping range Rd	6-10 mm
Standard	EN 62561-1

Type AK ...	6.10 KB S KBF3 18 STTZN	6.10 KB S KBF3 18 V2A
Part No.	**372 110**	**372 119**
Clamping range	3-18 mm	3-18 mm
Material of clamp	**St/tZn**	**StSt**
PU	25 pc(s)	25 pc(s)

Type AK ...	6.10 KB S KBF18 35 STTZN	6.10 KB S KBF18 35 V2A
Part No.	**372 140**	**372 149**
Clamping range	18-35 mm	18-35 mm
Material of clamp	**St/tZn**	**StSt**
PU	25 pc(s)	25 pc(s)

Horizontal design, with clamping piece

Lengthwise or crosswise connection with clamping piece.



General technical data:	
Clamping range Rd	6-10 mm
Standard	EN 62561-1

Type AK ...	6.10 KB W KBF3 18 STTZN	6.10 KB W KBF3 18 V2A
Part No.	**372 210**	**372 219**
Clamping range	3-18 mm	3-18 mm
Material of clamp	**St/tZn**	**StSt**
PU	25 pc(s)	25 pc(s)

Type AK ...	6.10 KB W KBF18 35 STTZN	6.10 KB W KBF18 35 V2A
Part No.	**372 240**	**372 249**
Clamping range	18-35 mm	18-35 mm
Material of clamp	**St/tZn**	**StSt**
PU	25 pc(s)	1 pc(s)

Vertical design, with KS connector

Lengthwise or crosswise connection with KS connector.



General technical data:	
Standard	EN 62561-1

Type AK ...	7.10 KSV S KBF3 18 STTZN	6.10 KSV S KBF3 18 V2A
Part No.	**372 120**	**372 129**
Clamping range	3-18 mm	3-18 mm
Material of clamp	**St/tZn**	**StSt**
Clamping range Rd	7-10 mm	6-10 mm
PU	25 pc(s)	25 pc(s)

Type AK ...	7.10 KSV S KBF18 35 STTZN	6.10 KSV S KBF18 35 V2A
Part No.	**372 150**	**372 159**
Clamping range	18-35 mm	18-35 mm
Material of clamp	**St/tZn**	**StSt**
Clamping range Rd	7-10 mm	6-10 mm
PU	25 pc(s)	25 pc(s)

Horizontal design, with KS connector

Lengthwise or crosswise connection with KS connector.



General technical data:	
Standard	EN 62561-1

Type AK ...	7.10 KSV W KBF3 18 STTZN	6.10 KSV W KBF3 18 V2A
Part No.	**372 220**	**372 229**
Clamping range	3-18 mm	3-18 mm
Material of clamp	**St/tZn**	**StSt**
Clamping range Rd	7-10 mm	6-10 mm
PU	25 pc(s)	25 pc(s)

Type AK ...	7.10 KSV W KBF18 35 STTZN	6.10 KSV W KBF18 35 V2A
Part No.	**372 250**	**372 259**
Clamping range	18-35 mm	18-35 mm
Material of clamp	**St/tZn**	**StSt**
Clamping range Rd	7-10 mm	6-10 mm
PU	25 pc(s)	25 pc(s)

Connection Clamps with Thrust Piece

For connection to steel constructions and steel sheets with a single-screw technique.

Small design
Lengthwise or crosswise connection.



Type AK 6.10 DS ...	KBF5 18 STTZN	KBF5 18 V2A
Part No.	**372 018**	**372 019**
Clamping range	5-18 mm	5-18 mm
Material of clamp	**St/tZn**	**StSt**
Clamping range Rd	6-10 mm	6-10 mm
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Large design
Lengthwise or crosswise connection.

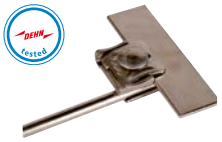


Type AK 6.10 DS ...	KBF18 35 STTZN
Part No.	**372 035**
Clamping range	18-35 mm
Material of clamp	**St/tZn**
Clamping range Rd	6-10 mm
Standard	EN 62561-1
PU	25 pc(s)

Seam Clamps

For connecting conductors with seams of the same or of different materials.

With clamping piece
Longitudinal or cross conductor routing.

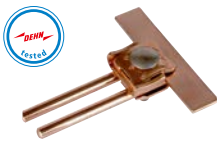


General technical data:	
Clamping range of seam	0.7-8 mm
Clamping range Rd	6-10 mm
Standard	EN 62561-1

Type	FK KB 6.10 KBF0.7 8 STTZN	FK KB 6.10 KBF0.7 8 AL
Part No.	**365 030**	**365 031**
Material of clamp	**St/tZn**	**Al**
PU	50 pc(s)	50 pc(s)

Type	FK KB 6.10 KBF0.7 8 CU	FK KB 6.10 KBF0.7 8 V2A
Part No.	**365 037**	**365 039**
Material of clamp	**Cu**	**StSt**
PU	50 pc(s)	50 pc(s)

With double clamp
Longitudinal or cross conductor routing.



General technical data:	
Clamping range of seam	0.7-8 mm
Clamping range Rd	8-10 mm
Standard	EN 62561-1

Type	FK DUL 8.10 KBF0.7 8 STTZN	FK DUL 6.10 KBF0.7 8 AL
Part No.	**365 010**	**365 011**
Material of clamp	**St/tZn**	**Al**
PU	50 pc(s)	50 pc(s)

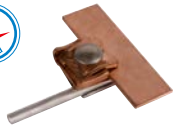
Type	FK DUL 8.10 KBF0.7 8 CU	FK DUL 6.10 KBF0.7 8 V2A
Part No.	**365 017**	**365 019**
Material of clamp	**Cu**	**StSt**
PU	50 pc(s)	50 pc(s)

With clamping piece, for hooking under seams
Which are close to a roof or wall surface.
Longitudinal or cross conductor routing.



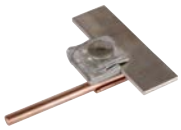
Type	FK KB 6.10 KBF0.7 10 STTZN	FK KB 6.10 KBF0.7 10 CU
Part No.	**365 020**	**365 027**
Clamping range of seam	0.7-10 mm	0.7-10 mm
Material of clamp	**St/tZn**	**Cu**
Clamping range Rd	6-10 mm	6-10 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

Bimetallic, for Cu seams, with intermediate plate (Cupal)



Type	ZMFK KB 6.10 KBF0.7 8 STTZN CU
Part No.	**365 117**
Clamping range of seam	0.7-8 mm
Material of clamp	**St/tZn / Cu**
Clamping range Rd	6-10 mm
Standard	EN 62561-1
PU	50 pc(s)

Bimetallic, for St/tZn seams, with intermediate plate (Cupal)



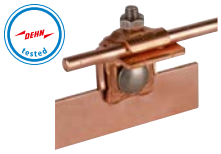
Type	ZMFK KB 6.10 KBF0.7 8 CU STTZN
Part No.	**365 127**
Clamping range of seam	0.7-8 mm
Material of clamp	**Cu / St/tZn**
Clamping range Rd	6-10 mm
PU	1 pc(s)

Saddle Clamps with Enlarged Contact Surface

For connecting conductors with seams; enlarged contact surface.

Angled design

Longitudinal or cross conductor routing.



General technical data:	
Clamping range of seam	0.7-8 mm
Clamping range Rd	6-10 mm
Standard	EN 62561-1

Type FK ...	KB 6.10 KBF0.7 8 W STTZN	KB 6.10 KBF0.7 8 W AL
Part No.	365 050	365 051
Material of clamp	St/tZn	Al
PU	50 pc(s)	50 pc(s)

Type FK ...	KB 6.10 KBF0.7 8 W CU	KB 6.10 KBF0.7 8 W V2A
Part No.	365 057	365 059
Material of clamp	Cu	StSt
PU	50 pc(s)	50 pc(s)

Straight design

Longitudinal or cross conductor routing.



General technical data:	
Clamping range of seam	0.7-10 mm
Clamping range Rd	8-10 mm
Standard	EN 62561-1

Type FK ...	MV 8.10 KBF0.7 10 STTZN	MV 8.10 KBF0.7 10 AL
Part No.	365 220	365 221
Material of clamp	St/tZn	Al
PU	50 pc(s)	50 pc(s)

Type FK ...	MV 8.10 KBF0.7 10 CU	MV 8.10 KBF0.7 10 V2A
Part No.	365 227	365 229
Material of clamp	Cu	StSt
PU	50 pc(s)	50 pc(s)

Gutter Clamps with Single-screw Technique

For connecting conductors with gutters.

With clamping piece



Type DRK ...	KB 8.10 W16.22 EST STTZN	KB 8.10 W16.22 EST AL
Part No.	339 100	339 101
Clamping range bead	16-22 mm	16-22 mm
Material of clamp	St/tZn	Al
Clamping range Rd	8-10 mm	8-10 mm
Width	40 mm	40 mm
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	1 pc(s)

With double clamping piece



Type DRK ...	DUL 8.10 W16.22 EST STTZN	DUL 8.10 W16.22 EST AL
Part No.	339 110	339 111
Clamping range bead	16-22 mm	16-22 mm
Material of clamp	St/tZn	Al
Clamping range Rd	8-10 mm	8-10 mm
Width	40 mm	40 mm
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Gutter Clamps

For connecting conductors to gutters.

With clamping piece

Longitudinal or cross conductor routing.



General technical data:	
Clamping range bead	16-22 mm
Clamping range Rd	6-10 mm
Standard	EN 62561-1

Type	DRK KB 6.10 W16.22 STTZN	DRK KB 6.10 W16.22 AL
Part No.	339 060	339 061
Material of gutter clamp	St/tZn	Al
Material of conductor clamp	St/tZn	Al
Width / material thickness	40 mm	40 / 3 mm
Material of screw	St/tZn	StSt
PU	25 pc(s)	25 pc(s)

Type	DRK KB 6.10 W16.22 CU	DRK KB 6.10 W16.22 V2A
Part No.	339 067	339 069
Material of gutter clamp	Cu	StSt
Material of conductor clamp	Cu	StSt
Width / material thickness	40 / 2 mm	40 / 2 mm
Material of screw	StSt	StSt
PU	25 pc(s)	25 pc(s)

With double clamp

Longitudinal or cross conductor routing.



General technical data:	
Clamping range bead	16-22 mm
Clamping range Rd	8-10 mm
Standard	EN 62561-1

Type	DRK DUL 8.10 W16.22 STTZN	DRK DUL 8.10 W16.22 AL
Part No.	339 050	339 051
Material of gutter clamp	St/tZn	Al
Material of conductor clamp	St/tZn	StSt
Width / material thickness	40 / 2 mm	40 / 3 mm
Material of screw	St/tZn	StSt
PU	25 pc(s)	25 pc(s)

Type	DRK DUL 8.10 W16.22 CU	DRK DUL 8.10 W16.22 V2A
Part No.	339 057	339 059
Material of gutter clamp	Cu	StSt
Material of conductor clamp	Cu	StSt
Width / material thickness	40 / 2 mm	40 / 2 mm
Material of screw	StSt	StSt
PU	25 pc(s)	25 pc(s)

Bimetallic, for gutters (Cu), with clamping piece (St/tZn) and intermediate plate (Cupal)



Type	ZMDRK KB 6.10 W16.22 CU STTZN
Part No.	**339 167**
Clamping range bead	16-22 mm
Material of gutter clamp	Cu / St/tZn
Clamping range Rd	6-10 mm
Material of screw	StSt
Standard	EN 62561-1
PU	1 pc(s)

Bimetallic, for gutters (Cu), with double clamp (St/tZn) and intermediate plate (Cupal)



Type	ZMDRK DUL 8.10 W16.22 CU STTZN
Part No.	**339 157**
Clamping range bead	16-22 mm
Material of gutter clamp	Cu / St/tZn
Clamping range Rd	8-10 mm
Material of screw	StSt
Standard	EN 62561-1
PU	25 pc(s)

With two-screw clamp, width 40 mm

Longitudinal conductor routing.



General technical data:	
Clamping range bead	13-25 mm
Clamping range Rd	7-10 mm
Material of screw	StSt
Standard	EN 62561-1

Type	DRK ZS 7.10 W13.25 STTZN	DRK ZS 7.10 W13.25 AL
Part No.	**338 000**	**338 001**
Material of gutter clamp	St/tZn	Al
Material of conductor clamp	St/tZn	Al
Width / material thickness	40 / 3 mm	40 / 3 mm
PU	25 pc(s)	25 pc(s)

Type	DRK ZS 7.10 W13.25 CU	DRK ZS 7.10 W13.25 V2A
Part No.	**338 007**	**338 009**
Material of gutter clamp	Cu	StSt
Material of conductor clamp	Cu	StSt
Width / material thickness	40 / 3 mm	40 / 2,5 mm
PU	25 pc(s)	25 pc(s)

With two-screw clamp, width 60 mm

Longitudinal conductor routing.



Type	DRK ZS 7.10 W13.25 B60 STTZN
Part No.	**339 010**
Clamping range bead	13-25 mm
Material of gutter clamp	St/tZn
Clamping range Rd	7-10 mm
Material of conductor clamp	St/tZn
Width / material thickness	60 / 2.5 mm
Material of screw	StSt
Standard	EN 62561-1
PU	25 pc(s)

Snow Guard Clamps

For connecting conductors to snow guards, longitudinal connection with two-screw clamp.



Type SGK ZS 7.10 ...	KB3.13 STTZN	KB3.13 CU
Part No.	**343 000**	**343 007**
Clamping range	3-13 mm	3-13 mm
Material of clamp	St/tZn	Cu
Width	90 mm	90 mm
Clamping range Rd	7-10 mm	7-10 mm
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	1 pc(s)

Connection Brackets

For connecting metal cladding using blind rivets or screws.

With square hole

Dimensions 11 x 11 mm (e.g. for M10 KS connector), longitudinal or cross connection.



General technical data:	
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Standard	EN 62561-1

Type AL ZF B11.11 B5.2 ...	6.5 L81 AL	6.5 L81 CU	6.5 L81 V2A
Part No.	**377 005**	**377 017**	**377 009**
Material of bracket	Al	Cu	StSt
PU	50 pc(s)	50 pc(s)	50 pc(s)

With clamping piece

Longitudinal or cross connection.



Type AL ZF KB 6.10STTZN ...	B5.2 6.5 L81 AL
Part No.	**377 100**
Material of bracket	Al
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Material of clamping piece	St/tZn
Clamping range Rd	6-10 mm
Standard	EN 62561-1
PU	50 pc(s)

With double clamp

Longitudinal or cross connection.



General technical data:	
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Clamping range Rd	8-10 mm
Standard	EN 62561-1

Type AL ZF ...	DUL 6.10 B5.2 6.5 L81 AL	DUL 6.10 B5.2 6.5 L81 STTZN
Part No.	**377 200**	**377 201**
Material of bracket	Al	HDG steel
Material of double clamp	Al	HDG steel
PU	50 pc(s)	50 pc(s)

Type AL ZF DUL ...	6.10 B5.2 6.5 L81 V2A
Part No.	**377 209**
Material of bracket	StSt
Material of double clamp	StSt
PU	50 pc(s)

Clamping Shoes

For connecting conductors to structural parts.

With hole



Type KS ...	8 B11 STTZN	10 B11 STTZN
Part No.	**345 008**	**345 010**
Clamping range Rd	8 mm	10 mm
Material	**St/tZn**	**St/tZn**
Fixing hole Ø	11 mm	11 mm
PU	100 pc(s)	100 pc(s)

With screws



Type KS ...	7.10 B10.5 AL
Part No.	**347 205**
Clamping range Rd	7-10 mm
Material	Al
Fixing hole Ø	10.5 mm
Standard	EN 62561-1
PU	100 pc(s)

Clamping Piece

For connecting flat material to structural parts or, for example, connection clamps for steel girders (without a hole in the flat strip).



Type	KS B11.11 FL30X4 V2A
Part No.	**380 129**
Clamping range Fl	up to 30 x 4 mm
Material	StSt
Fixing	square hole 11 x 11 mm
Standard	EN 62561-1
PU	50 pc(s)

FS Clamps (Air-termination Rod Clamps)

For connecting air-termination rods/tips to one or two conductors.
Connection of two conductors improves the lightning current distribution and thus reduces the separation distance.

For air-termination tip 10 mm

With truss head screw, plate, nut and double conductor clamp.



Type FSK ...	3X8.10 FRM10X50 AL
Part No.	**380 110**
Material of clamp	Al
Clamping range of air-termination tip	8-10 mm
Clamping range Rd	2x 8-10 mm
Material of plate	StSt
Standard	EN 62561-1
PU	50 pc(s)

For air-termination rod 16 mm

With truss head screw, plate, nut and double conductor holder.



Type FSK ...	2X8.10 16 FRM10X50 AL
Part No.	**380 116**
Material of clamp	Al
Clamping range of air-termination rod	16 mm
Clamping range Rd	2x 8-10 mm
Material of plate	StSt
Standard	EN 62561-1
PU	50 pc(s)

Rod Clamps

For connecting air-termination rods to conductors, for longitudinal connection of all conductor materials. Cross connection (cross arrangement) only St/tZn and StSt.



Type FSK 8.10 16 ...	SKM10X25 STTZN	SKM10X25 V2A
Part No.	**380 020**	**380 029**
Material of clamp	**St/tZn**	StSt
Clamping range Rd / Rd	8-10 / 16 mm	8-10 / 16 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

Connecting Sleeve for Air-Termination Rods

With embossings (stop) for connecting longer air-termination rods (transport length).
When using the connecting sleeve, the air-termination rod must be additionally fixed above the sleeve.



Type	VM 16 SKM8X12 AL
Part No.	**385 216**
Material	Al
Clamping range Rd / Rd	16 / 16 mm
Screw	M8 x 12 mm
Material of screw	StSt
Outside diameter Ø	28 mm
Standard	EN 62561-1
PU	10 pc(s)

MV Clamps for Air-Termination Rods

Multi-purpose connecting clamp for universal use as a cross clamp, T clamp and parallel clamp; two-piece.

With hexagon screw, spring washer and thread in the base part



Type MVK 8.10 16 ...	SKM10X40 FSC STTZN	SKM10X40 FSC V2A
Part No.	**392 050**	**392 059**
Material of clamp	**St/tZn**	StSt
Clamping range Rd	8-10 / 16 mm	8-10 / 16 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

With truss head screw and anti-rotation protection



Type MVK 8.10 16 ...	FRM10X40 STTZN	FRM10X40 V2A
Part No.	**392 060**	**392 069**
Material of clamp	**St/tZn**	StSt
Clamping range Rd	8-10 / 16 mm	8-10 / 16 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

Cupal Sleeves

For corrosion-resistant connection of steel or aluminium with copper.

Pushed onto cut conductors

Note: Rd 8 mm = 50 mm²



General technical data:		
Material thickness		1.0 mm

Type CUPAH ...	GL Q25 L29 AL CU	GL Q35 L32 AL CU
Part No.	**562 250**	**562 035**
Material outside	Al	Al
Material inside	Cu	Cu
Cross-section	25 mm²	35 mm²
Length	29 mm	32 mm
Inside diameter Ø	6.3 mm	7.5 mm
Outside diameter Ø	8.3 mm	9.5 mm
PU	100 pc(s)	100 pc(s)

Type CUPAH ...	GL Q50 L40 AL CU	GL Q35 L32 CU AL
Part No.	**562 050**	**562 135**
Material outside	Al	Cu
Material inside	Cu	Al
Cross-section	50 mm²	35 mm²
Length	40 mm	32 mm
Inside diameter Ø	8.2 mm	7.5 mm
Outside diameter Ø	10.0 mm	9.5 mm
PU	100 pc(s)	100 pc(s)

Type CUPAH ...	GL Q50 L40 CU AL
Part No.	**562 150**
Material outside	Cu
Material inside	Al
Cross-section	50 mm²
Length	40 mm
Inside diameter Ø	8.2 mm
Outside diameter Ø	10.0 mm
PU	100 pc(s)

Attached to uncut conductors

Note: Rd 8 mm = 50 mm²



Type CUPAH ...	UGL Q50 L60 AL CU	UGL Q50 L60 CU AL
Part No.	**562 001**	**562 101**
Material outside	Al	Cu
Material inside	Cu	Al
Cross-section	50 mm²	50 mm²
Length	60 mm	60 mm
Inside diameter Ø	8.5 mm	8.5 mm
Outside diameter Ø	9.5 mm	9.5 mm
Material thickness	0.5 mm	0.5 mm
PU	100 pc(s)	100 pc(s)

Cupal Sheets

Metal strips for corrosion-resistant connection of steel or aluminium with copper.



Type CUPAB ...	500X40X0.5 AL CU	500X60X0.5 AL CU
Part No.	**562 440**	**562 460**
Material	Al / Cu	Al / Cu
Dimensions	500 x 40 x 0.5 mm	500 x 60 x 0.5 mm
PU	1 pc(s)	1 pc(s)

UNI Disconnecting Clamps

For connecting down conductors with earth entries or for connecting conductors made of different materials.

With intermediate plate for two round conductors



Type	UTK 8.10 8.10 ZP V2A	UTK 8.10 8.10 ZP CU
Part No.	**459 129**	**459 127**
Material	StSt	Cu
Clamping range Rd / Rd	8-10 / 8-10 mm	8-10 / 8-10 mm
Distance between screws	40 mm	40 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	1 pc(s)

Bimetallic, for two round conductors (Cu and St/tZn or StSt (V4A))



Type	ZMTK 8.10 8.10 CU STTZN
Part No.	**460 517**
Material	Cu / St/tZn
Clamping range Rd / Rd	8-10 / 8-10 mm
Distance between screws	40 mm
Standard	EN 62561-1
PU	50 pc(s)

With intermediate plate for a round and a flat conductor



Type	UTK 8.10 FL30 ZP V2A
Part No.	**459 139**
Material	StSt
Clamping range Rd / Fl	8-10 / 30 mm
Distance between screws	40 mm
Standard	EN 62561-1
PU	50 pc(s)

Bimetallic, for a round Cu conductor and a flat St/tZn or StSt (V4A) conductor



Type	ZMTK 8.10 FL30 CU STTZN
Part No.	**460 557**
Material	Cu / St/tZn
Clamping range Rd / Fl	8-10 / 30 mm
Distance between screws	40 mm
Standard	EN 62561-1
PU	50 pc(s)

With intermediate plate for earth entry rods



Type	UTK 8.10 16 ZP V2A
Part No.	459 119
Material	StSt
Clamping range Rd / Rd	8-10 / 16 mm
Distance between screws	40 mm
Standard	EN 62561-1
PU	50 pc(s)

Bimetallic, for a round Cu conductor and a St/tZn or StSt (V4A) earth entry rod



Type	ZMTK 8.10 16 CU STTZN
Part No.	460 507
Material	Cu / St/tZn
Clamping range Rd / Rd	8-10 / 16 mm
Distance between screws	40 mm
Standard	EN 62561-1
PU	1 pc(s)

With intermediate plate for two round conductors, narrow design



Type	UTK 7.10 7.10 S ZP STTZN
Part No.	459 003
Material	St/tZn
Clamping range Rd / Rd	7-10 / 7-10 mm
Distance between screws	30 mm
Standard	EN 62561-1
PU	50 pc(s)

With intermediate plate for earth entry rods, narrow design



Type	UTK 7.10 16 S ZP STTZN
Part No.	459 000
Material	St/tZn
Clamping range Rd / Rd	7-10 / 16 mm
Distance between screws	30 mm
Standard	EN 62561-1
PU	50 pc(s)

With intermediate plate for an earth entry rod and a flat conductor



Type	UTK 16 FL30 ZP V2A
Part No.	459 159
Material	StSt
Clamping range Rd / Fl	16 / 30 mm
Distance between screws	40 mm
Standard	EN 62561-1
PU	50 pc(s)

Without intermediate plate for two round conductors



Type	UTK 8.10 8.10 V2A	UTK 8.10 8.10 STTZN
Part No.	459 029	459 020
Material	StSt	St/tZn
Clamping range Rd / Rd	8-10 / 8-10 mm	8-10 / 8-10 mm
Distance between screws	40 mm	40 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

Without intermediate plate for a round and a flat conductor



Type	UTK 8.10 FL30 V2A	UTK 8.10 FL30 STTZN
Part No.	459 039	459 030
Material	StSt	St/tZn
Clamping range Rd / Fl	8-10 / 30 mm	8-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm	–
Distance between screws	40 mm	40 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

Without intermediate plate for earth entry rods



Type	UTK 8.10 16 V2A	UTK 8.10 16 STTZN
Part No.	459 019	459 010
Material	StSt	St/tZn
Clamping range Rd / Rd	8-10 / 16 mm	8-10 / 16 mm
Distance between screws	40 mm	40 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	1 pc(s)

Disconnecting Clamp – Austrian Standard

With connecting screw, for round conductors.



Type	OENTK 7.10 7.10 ZG
Part No.	460 213
Material	ZDC
Clamping range Rd / Rd	7-10 / 7-10 mm
Standard	EN 62561-1
PU	50 pc(s)

Connecting / Disconnecting Clamps

Two-piece or three-piece connection system with thread in the base part.

Two-piece, for a round and a flat conductor



Type VTK ...	7.10 FL30.40 STTZN	7.10 FL30.40 CU
Part No.	**454 100**	**454 107**
Material	**St/tZn**	**Cu**
Clamping range Rd / Fl	7-10 / 30-40 mm	7-10 / 30-40 mm
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Three-piece, (with intermediate plate) for a round and a flat conductor



Type VTK ...	5.10 FL30.40 ZP STTZN
Part No.	**454 000**
Material	**St/tZn**
Clamping range Rd / Fl	5-10 / 30-40 mm
Standard	EN 62561-1
PU	25 pc(s)

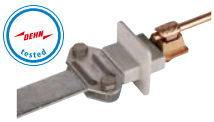
Two-piece, for two flat conductors



Type VTK ...	FL30 TGTZN
Part No.	**455 000**
Material	**MCI/tZn**
Clamping range Fl / Fl	30 / 30 mm
Standard	EN 62561-1
PU	1 pc(s)

Bimetallic Disconnecting Clamp with Shield

Bimetallic version for connecting conductors made of different materials.



Type	ZMTK 6.10 FL30.40 CU STTZN
Part No.	**460 147**
Material	**Cu / St/tZn**
Clamping range Rd / Fl	6-10 / 30-40 mm
Shield	**plastic** grey
Standard	EN 62561-1
PU	1 pc(s)

Disconnecting Sleeves

For connecting down conductors with earth entry rods.

Open design for earth entry rods



Type TM ...	7.10 16 ZG	7.10 16 RG
Part No.	**450 000**	**450 007**
Material	**ZDC**	**high copper alloy**
Clamping range Rd / Rd	7-10 / 16 mm	7-10 / 16 mm
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	1 pc(s)

Open design for earth entry rods



Type TM ...	7.10 16 AL
Part No.	**450 001**
Material	**Al**
Clamping range Rd / Rd	8-10 / 16 mm
Standard	EN 62561-1
PU	50 pc(s)

Closed design for earth entry rods



Type TM ...	G 7.10 16 ZG
Part No.	**450 011**
Material	**ZDC**
Clamping range Rd / Rd	7-10 / 16 mm
Standard	EN 62561-1
PU	50 pc(s)

Open design for wires



Type TM ...	8.10 8 AL
Part No.	**450 101**
Material	**Al**
Clamping range Rd / Rd	8-10 / 8 mm
Standard	EN 62561-1
PU	50 pc(s)

Connecting components 200 kA (10/350 µs)

For use in class of LPS I and II (LPL I, II).
Clamps are tested with a 200 kA (10/350 µs) lightning impulse current, based on EN 62561-1.

UNI disconnecting clamp for two round conductors



Type	UTK 200 2X10 FL30 ZP V2A
Part No.	459 200
Material	StSt
Clamping range Rd / Rd	10 / 10 mm
Clamping range Rd / Fl	10 / 30 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

UNI disconnecting clamp for earth entry rods



Type	UTK 200 8.10 16 ZP V2A
Part No.	459 219
Material	StSt
Clamping range Rd / Rd	8-10 / 16 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

Clamping piece



Type	KS 200 B11.11 FL30X4 V2A
Part No.	380 209
Material	StSt
Clamping range Fl	30 x 4 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

KS connector



Type	KSV 200 10 FER V2A
Part No.	301 209
Material	StSt
Clamping range Rd	10 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

MV clamp for round conductors



Type	MVK 200 8.10 SKM10X30 V2A
Part No.	390 209
Material	StSt
Clamping range Rd / Rd	8-10 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

MV clamp for air-termination rods



Type	MVK 200 8.10 16 SKM10X40 FSC V2A
Part No.	392 209
Material	StSt
Clamping range Rd / Rd	8-10 / 16 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

Square Conductor Clamps

Square Tape Clamps for interconnecting various sizes of flat conductors in parallel, cross, and T connection arrangements to form a continuous network. Equipped with a countersunk hole for fixing the clamp to structural surfaces. The Clamps have a high resistance to corrosion and show high mechanical strength to ensure a lasting connection.

Square Tape Clamps

Square Tape Clamps for interconnecting flat tapes in parallel, cross, and T connection arrangements to form a continuous network.



General technical data:	
Material of Clamp Fixings	Stainless Steel
Tightening Torque	6 Nm
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA

Type STC ...	BCU FL 25X3 HCA	BCU FL 20.31X2.5.6 HCA
Part No.	118 202	118 208
Material	High Copper Alloy	High Copper Alloy
Conductor Material	Bare Copper	Bare Copper
Clamping range Fl / Fl	25 x 3 / 25 x 3 mm	W (20-31 mm) x T (2.5-6 mm) / W (20-31 mm) x T (2.5-6 mm)
PU	15 pc(s)	15 pc(s)

Type STC ...	BCU FL 40.50X2.5.6 HCA	BAL FL 25X3 ALA
Part No.	118 219	118 209
Material	High Copper Alloy	Aluminium Alloy
Conductor Material	Bare Copper	Bare Aluminium
Clamping range Fl / Fl	W (40-50 mm) x T (2.5-6 mm) / W (40-50 mm) x T (2.5-6 mm)	25 x 3 / 25 x 3 mm
PU	15 pc(s)	15 pc(s)

Type STC ...	BAL FL 25X3.6 ALA
Part No.	118 218
Material	Aluminium Alloy
Conductor Material	Bare Aluminium
Clamping range Fl / Fl	W (25 mm) x T (3-6 mm) / W (25 mm) x T (3-6 mm)
PU	15 pc(s)

Square Cable Clamps



Square Cable Clamps for interconnecting stranded cables in cross and T connection arrangements to form a continuous network. The Clamps have a high resistance to corrosion and show high mechanical strength to ensure a lasting connection.

General technical data:	
Material	High Copper Alloy
Conductor Material	Copper
Material of Clamp Fixings	Stainless Steel
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA

Type	SCC BCCU SC 16.70 HCA	SCC BCCU SC 35.150 HCA
Part No.	118 628	118 634
Clamping range Stranded cable / Stranded cable	16 - 70 mm² / 16 - 70 mm²	35 - 150 mm² / 35 - 150 mm²
Tightening Torque	5 Nm	12 Nm
PU	9 pc(s)	5 pc(s)

Type	SCC BCCU SC 70.300 HCA
Part No.	118 635
Clamping range Stranded cable / Stranded cable	70 - 300 mm² / 70 - 300 mm²
Tightening Torque	12 Nm
PU	2 pc(s)

Note: Clamp can be used as a conductor holder for stranded PVC covered cables

Multipurpose Square Conductor Clamps



Square Conductor Clamps for interconnecting various sizes of flat, round and stranded conductors in parallel, cross, and T connection arrangements to form a continuous network. Equipped with a countersunk hole for fixing the clamp to structural surfaces. The Clamps have a high resistance to corrosion and show high mechanical strength to ensure a lasting connection.

Type	STRCC FLRDSC 25X3/8.10-50.120 HCA	STRCC FLRDSC 25X3/8.10-50.120 ALA
Part No.	118 606	118 620
Material	High Copper Alloy	Aluminium Alloy
Conductor Material	Copper	Aluminium
Clamping range Fl / Rd	25 x 3 mm / 8-10 mm	25 x 3 mm / 8-10 mm
Clamping range Fl / Stranded cable	25 x 3 mm / 50 - 120 mm²	25 x 3 mm / 50 - 120 mm²
Material of Clamp Fixings	Stainless Steel	Stainless Steel
Tightening Torque	6 Nm	6 Nm
Standards	IEC / EN / BS EN 62561-1	IEC / EN / BS EN 62561-1
Classification	Class H	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA	I_{imp} 100 kA
PU	1 pc(s)	1 pc(s)

Test Clamps, Metal Bonding Clamps & Bimetallic Connectors

Test Clamps form a disconnecting joint in parallel or inline arrangements between the air-termination and down conductor network and/or down conductor network and earthing network. Equipped with countersunk hole for fixing the clamp to structural surfaces. The Clamps have a high resistance to corrosion and show high mechanical strength to ensure a lasting connection.

Test Clamps



Test or Junction clamps are used to form a disconnecting joint between the air-termination and down conductor network and/or down conductor network and earthing network. The base of the clamp has got counter sunk holes for fixing the clamp to the surface of the structure.

General technical data:	
Material of screw	Stainless steel
Tightening Torque	15 Nm
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA

Type	TJC FL 25X3 HCA	TJC FL 25X3 ALA
Part No.	118 281	118 252
Material	High Copper Alloy	Aluminium Alloy
Conductor Material	Copper	Aluminium
Clamping range Fl / Fl	25 x 3 / 25 x 3 mm	25 x 3 / 25 x 3 mm
Clamping screw	Hex head screw M8 x 2 Nos	Hex head screw M8 x 2 Nos
PU	12 pc(s)	12 pc(s)

Type	TJC FL 25.50X3.6 HCA	TJC FLRDSC 25X3/8.10/50.70 HCA
Part No.	118 268	118 285
Material	High Copper Alloy	High Copper Alloy
Conductor Material	Copper	Copper
Clamping range Fl / Fl	W (25-50) x T (3-6) / W (25-50) x T (3-6) mm	–
Clamping range Fl / Rd	–	25 x 3 / 8 - 10 mm
Clamping range Fl / Stranded cable	–	25 x 3 mm / 50 - 70 mm²
Clamping screw	Hex head screw M8 x 2 Nos	Hex head screw M8 x 2 Nos
Conductor Fixing screw	Hex head screw M10 x 2 Nos	Hex head screw M8 x 2 Nos
PU	4 pc(s)	2 pc(s)

Type TJC ...	FLRDSC 25X3/ 8.10/50.70 ALA	RDSC 50.70/ 8.10 HCA	FLRD 31X3.5/ 8.10 STST
Part No.	118 286	118 283	118 256
Material	Aluminium Alloy	High Copper Alloy	Stainless Steel (StSt)
Conductor Material	Aluminium	Copper	Copper, Aluminium, St/tZn, StSt
Clamping range Fl / Fl	–	–	31 x 3.5 / 31 x 3.5 mm
Clamping range Fl / Rd	25 x 3 / 8 - 10 mm	–	31 x 3.5 / 8 - 10 mm
Clamping range Rd / Rd	–	–	8 - 10 / 8 - 10 mm
Clamping range Fl / Stranded cable	25 x 3 mm / 50 - 70 mm²	–	
Clamping range Rd / Rd	–	8 - 10 / 8 - 10 mm	–
Clamping range Rd / Stranded cable	–	8 - 10 mm / 50 - 70 mm²	–
Clamping range Stranded cable / Stranded cable	–	50 - 70 / 50 - 70 mm²	–
Clamping screw	Hex head screw M8 x 2 Nos	–	Hex head screw M6 x 2 Nos
Conductor Fixing screw	Hex head screw M8 x 2 Nos	Hex head screw M8 x 2 Nos	Hex head screw M6 x 2 Nos
PU	10 pc(s)	12 pc(s)	5 pc(s)

Metal Work Bonding Clamps



Metal Work Bonding Clamps for connecting flat, round and stranded conductors in parallel connection arrangement to form a continuous network. Equipped with accessories for fixing the clamp to metal surfaces. The Clamps have a high resistance to corrosion and show high mechanical strength to ensure a lasting connection.

General technical data:	
Clamping range Fl	25 x 3 mm
Clamping screw / Recommended fixings	Hex Head Screw M10
Material of screw	Stainless Steel
Tightening Torque	20 Nm
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA

Type MWBC ...	FLSC 25X3/50 HCA	FL 25X3 HCA
Part No.	**118 272**	**118 273**
Material	High Copper Alloy	High Copper Alloy
Conductor Material	Copper	Copper
Clamping range (Stranded / Cable)	50 mm²	–
PU	20 pc(s)	20 pc(s)

Type	MWBC FL 25X3 ALA
Part No.	**118 275**
Material	Aluminium Alloy
Conductor Material	Aluminium
Clamping range (Stranded / Cable)	–
PU	20 pc(s)

Bimetallic Connectors



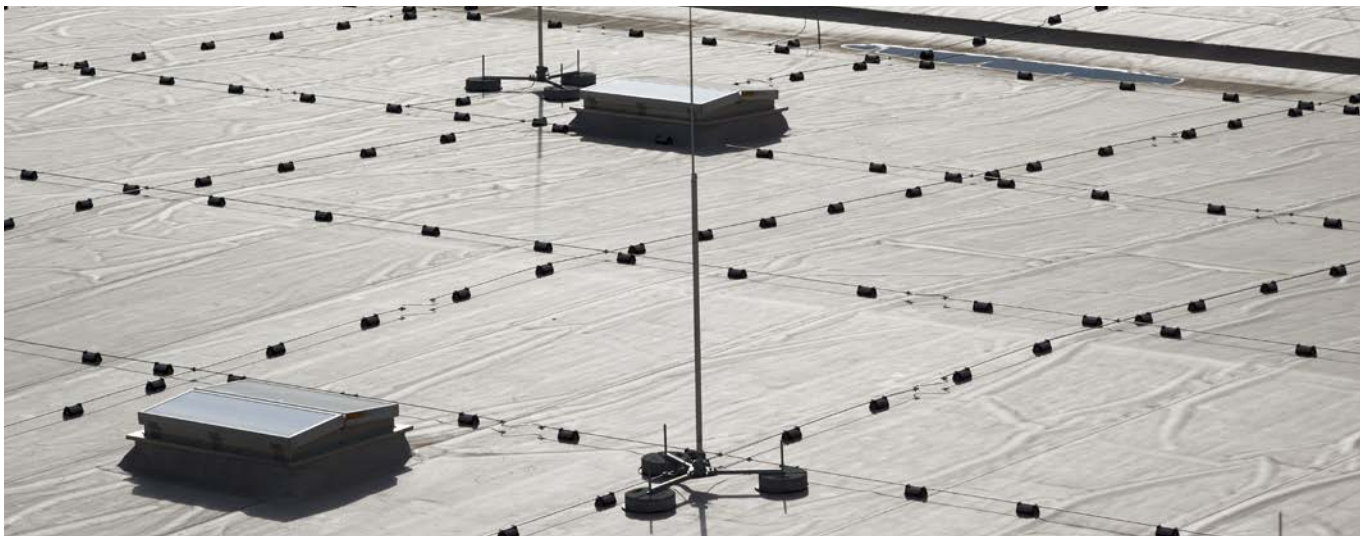
Available in a range of configurations providing interconnection between various conductor types such as flat tape to flat tape, solid conductor to flat tape, stranded conductor to flat tape, solid conductor to solid conductor. These connectors avoid bimetallic corrosion and are mechanically strong to ensure a lasting connection. The Clamps are designed with a central mounting hole for fixing the clamp to the structure.

General technical data:	
Material	Stainless Steel (StSt)
Material of screw	Stainless steel
Tightening Torque	15 Nm
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA

Type BMC ...	FL 25X3 STST	RD 8 STST
Part No.	**118 313**	**118 314**
Conductor Material	Copper, Aluminium	Copper, Aluminium, Stainless Steel, Galvanised Steel
Clamping range Fl / Fl	25 x 3 / 25 x 3 mm	–
Clamping range Fl / Rd	–	–
Clamping range Fl / Stranded cable	–	–
Clamping range Rd / Rd	–	8 / 8 mm
Clamping range Rd / Stranded cable	–	–
Clamping range Stranded cable / Stranded cable	–	–
Clamping screw	Hex Head Bolt, plain & spring washer M8 x 2 Nos	Hex Head Bolt M8 x 2 Nos
PU	20 pc(s)	15 pc(s)

Type BMC ...	FLRDSC 25X3/8-50 STST
Part No.	**118 315**
Conductor Material	Copper, Aluminium, Stainless Steel, Galvanised Steel
Clamping range Fl / Fl	–
Clamping range Fl / Rd	25 x 3 / 8 mm
Clamping range Fl / Stranded cable	25 x 3 mm / 50 mm²
Clamping range Rd / Rd	–
Clamping range Rd / Stranded cable	–
Clamping range Stranded cable / Stranded cable	–
Clamping screw	Hex Head Bolt, plain & spring washer M8 x 2 Nos
PU	15 pc(s)

Note: For clamping stranded conductors use Loctite 242 – "apply several drops on thread of clamping screw"



When installing air-termination rods in a concrete base, the information shown opposite and the maximum gust wind speeds must be taken into account. This information applies to the usual materials used for air-termination rods (Al, St/tZn, Cu and StSt).
For protecting roof structures, chimneys, etc., also for installation with a concrete base. Depending on the gust wind speed, additional fastenings, e.g. DEHNiso spacers, are required.

Height	Concrete bases Part No. 102 075 1x 8.5 kg	Concrete bases Part No. 102 010 1x 17 kg	Concrete bases Part No. 102 010 2x 17 kg
1.0 m (Ø10 mm)	135 km/h	–	–
1.5 m (Ø16/10 mm)	–	150 km/h	185 km/h
2.0 m (Ø16/10 mm)	–	105 km/h	155 km/h
2,5 m (Ø16/10 mm)	–	–	120 km/h

Air-Termination Rods / Tips

For protecting roof-mounted structures, chimneys, etc., also for erection with concrete base.
Additional fasteners, e.g. DEHNiso spacers, are necessary depending on the gust wind speed.

Note: Permissible roof loads have to be considered and checked with the constructor where required.

Diameter 10 mm, chamfered

Especially for concrete base (8.5 kg) with fixing wedge (Part No. 102 075) or for fixing using conductor holders.



General technical data:	
Total length (l1)	1000 mm
Diameter Ø	10 mm
Standard	EN 62561-2

Type	FS 10 1000 AL	FS 10 1000 V2A
Part No.	101 000	101 009
Material	AlMgSi	StSt
PU	20 pc(s)	20 pc(s)

Type	FS 10 1000 CU
Part No.	101 007
Material	Cu
PU	20 pc(s)

With forged lug

And clamping screw for connecting Rd 7-10 mm.



Type	FSS 16 1000 KS STTZN	FSS 16 1500 KS STTZN
Part No.	100 100	100 150
Total length (l1)	1000 mm	1500 mm
Material	St/tZn	St/tZn
Diameter Ø	16 mm	16 mm
Terminal clamping range	7-10 mm	7-10 mm
Standard	EN 62561-(1+2)	EN 62561-(1+2)
PU	10 pc(s)	10 pc(s)

Diameter 16 mm, chamfered



General technical data:	
Diameter Ø	16 mm
Standard	EN 62561-2

Type	FS 16 1500 AL	FS 16 2000 AL
Part No.	104 150	104 200
Total length (l1)	1500 mm	2000 mm
Material	AlMgSi	AlMgSi
PU	10 pc(s)	10 pc(s)

Type	FS 16 2500 AL	FS 16 3000 AL
Part No.	104 250	104 300
Total length (l1)	2500 mm	3000 mm
Material	AlMgSi	AlMgSi
PU	10 pc(s)	10 pc(s)

Type	FS 16 1000 STTZN	FS 16 1250 STTZN
Part No.	483 100	483 125
Total length (l1)	1000 mm	1250 mm
Material	St/tZn	St/tZn
PU	10 pc(s)	10 pc(s)

Type	FS 16 1500 STTZN	FS 16 2000 STTZN
Part No.	483 150	483 200
Total length (l1)	1500 mm	2000 mm
Material	St/tZn	St/tZn
PU	10 pc(s)	1 pc(s)

Diameter 16 mm, cut to length on site



Type	FS 16 6000 AL
Part No.	104 600
Total length (l1)	6000 mm
Material	AlMgSi
Diameter Ø	16 mm
Standard	EN 62561-2
PU	1 pc(s)

With tapering, chamfered

Length of tapering 1000 mm.



General technical data:	
Material	AlMgSi
Diameter Ø	16 / 10 mm
Type	chamfered
Standard	EN 62561-2

Type	FS 16 10 1500 AL	FS 16 10 2000 AL
Part No.	103 210	103 220
Total length (l1)	1500 mm	2000 mm
PU	10 pc(s)	10 pc(s)

Type	FS 16 10 2500 AL	FS 16 10 3000 AL
Part No.	103 230	103 240
Total length (l1)	2500 mm	3000 mm
PU	10 pc(s)	10 pc(s)

Type	FS 16 10 3500 AL	FS 16 10 4000 AL
Part No.	103 250	103 260
Total length (l1)	3500 mm	4000 mm
PU	10 pc(s)	10 pc(s)

Type		FS 16 10 5000 AL
Part No.		103 280
Total length (l1)		5000 mm
PU		10 pc(s)

Tubular air-termination rods with tapering 16 / 10 mm

Light design; length of tapering 1000 mm.



General technical data:	
Diameter Ø	16 / 10 mm
Standard	EN 62561-2

Type	RFS 16 10 1500 AL	RFS 16 10 2000 AL
Part No.	103 410	103 420
Total length (l1)	1500 mm	2000 mm
Material	AlMgSi	AlMgSi
PU	10 pc(s)	10 pc(s)

Type	RFS 16 10 2500 AL	RFS 16 10 3000 AL
Part No.	103 430	103 440
Total length (l1)	2500 mm	3000 mm
Material	AlMgSi	AlMgSi
PU	10 pc(s)	10 pc(s)

Type	RFS 16 10 3500 AL	RFS 16 10 4000 AL
Part No.	103 450	103 460
Total length (l1)	3500 mm	4000 mm
Material	AlMgSi	AlMgSi
PU	10 pc(s)	10 pc(s)

Type	RFS 16 10 5000 AL	RFS 16 10 1500 CU
Part No.	103 480	103 417
Total length (l1)	5000 mm	1500 mm
Material	AlMgSi	Cu
PU	10 pc(s)	10 pc(s)

Type	RFS 16 10 1500 V2A	RFS 16 10 2000 V2A
Part No.	103 419	103 429
Total length (l1)	1500 mm	2000 mm
Material	StSt	StSt
PU	10 pc(s)	10 pc(s)

Type	RFS 16 10 2500 V2A	RFS 16 10 3000 V2A
Part No.	103 439	103 449
Total length (l1)	2500 mm	3000 mm
Material	StSt	StSt
PU	10 pc(s)	10 pc(s)

With tapering, M16 thread

Length of tapering 1000 mm.



General technical data:	
Material	AlMgSi
Diameter Ø	16 / 10 mm
Type	M16
Standard	EN 62561-2

Type	FS M16 10 1500 AL	FS M16 10 2000 AL
Part No.	103 211	103 221
Total length (l1)	1500 mm	2000 mm
PU	10 pc(s)	10 pc(s)

Type	FS M16 10 2500 AL	FS M16 10 3000 AL
Part No.	103 231	103 241
Total length (l1)	2500 mm	3000 mm
PU	10 pc(s)	10 pc(s)

Type	FS M16 10 3500 AL	FS M16 10 4000 AL
Part No.	103 251	103 261
Total length (l1)	3500 mm	4000 mm
PU	10 pc(s)	10 pc(s)

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Rod Holders DEHNhold

For fixing air-termination and earth entry rods, with slotted saddle clamp, fixed conductor routing.
For use with different materials, e.g. Al, StSt, St/tZn and Cu.

With female thread



Type	LH ZS 16 M8 V2A
Part No.	274 116
Material of conductor holder	StSt
Conductor support Rd	16 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
PU	50 pc(s)

Pre-assembled with screw, plastic base and plug

With female thread.



Type	SH ZS 16 KS KD8X40 V2A
Part No.	274 260
Material of conductor holder	StSt
Conductor support Rd	16 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Screw	5 x 50 mm
Plastic dowel	Ø8 x 40 mm
PU	50 pc(s)

Self-supporting Air-Termination Rods 2.5 to 3.5 m

Concrete bases	Plastic base plates
8.5 kg, Part No. 102 075	Part No. 102 060
17 kg, Part No. 102 010	Part No. 102 050

With tripod for protecting roof-mounted structures, adjustable to a roof inclination up to max. 10°.

The concrete base (Part No. 102 075 or 102 010) and the base plate (Part No. 102 060 or 102 050) have to be ordered separately.

Note: Permissible roof loads have to be considered and checked with the constructor where required.



For air-termination rods Ø22 mm

General technical data:	
Radius	320 mm
Space required for tripod with 3 bases, 8.5 kg each (l x w)	730 x 800 mm
Space required for tripod with 3 bases, 17 kg each (l x w)	850 x 930 mm
Material of air-termination rod	Al
Material of tripod	St/tZn
Standard	EN 62561-(1+2)

Type FS ...	22 16 10 2500 AL DBS R320 STTZN	22 16 10 3000 AL DBS R320 STTZN
Part No.	105 525	105 530
Height	2500 mm	3000 mm
PU	1 pc(s)	1 pc(s)

Type FS ...	22 16 10 3500 AL DBS R320 STTZN
Part No.	105 535
Height	3500 mm
PU	1 pc(s)

Note:
The small, space-saving tripod Part No. 105 357 can be used with Ø40 mm arrester rods in addition to the two sets up to heights of 5.0 m.
The tripods and arrester rods must be ordered separately. See the wind load table on page xx.



For air-termination rods Ø40 mm

Type FS ...	D40 16 10 3000 AL DBS KB STTZN	D40 16 10 3500 AL DBS KB STTZN
Part No.	105 531	105 536
Height	3000 mm	3500 mm
Radius	220 mm	220 mm
Space required for tripod (l x w)	668 x 718 mm	668 x 718 mm
Material of air-termination rod	Al	Al
Material of tripod	St/tZn	St/tZn
Standard	EN 62561-(1+2)	EN 62561-(1+2)
PU	1 pc(s)	1 pc(s)

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Self-supporting Air-Termination Rods 4 to 9 m

With hinged tripod for protecting larger roof-mounted structures, adjustable to the roof inclination up to max. 10°.
The stackable concrete base (Part No. 102 010) and the base plate (Part No. 102 050) have to be ordered separately.

Note: Permissible roof loads have to be considered and checked with the constructor where required.



Height up to 5.5 m

General technical data:	
Radius	560 mm
Space required for tripod	1210 x 1340 mm
Material of tripod	St/tZn
Material of air-termination rod	Al
Standard	EN 62561-(1+2)

Type FS D40 ...	16 10 4000 AL DBS KB STTZN	22 16 10 4500 AL DBS KB STTZN
Part No.	105 400	105 450
Height	4000 mm	4500 mm
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 5000 AL DBS KB STTZN	22 16 10 5500 AL DBS KB STTZN
Part No.	105 500	105 550
Height	5000 mm	5500 mm
PU	1 pc(s)	1 pc(s)

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Height up to 9 m with adjustable StSt braces Ø10 mm



General technical data:		
Radius		1435 mm
Space required for tripod		2530 x 2850 mm
Material of tripod		**St/tZn**
Material of air-termination rod		**Al**
Standard		EN 62561-(1+2)

Type FS D40 ...	**16 10 6000 AL DBS KB STTZN**	**22 16 10 6500 AL DBS KB STTZN**
Part No.	**105 600**	**105 650**
Height	6000 mm	6500 mm
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	**16 10 7000 AL DBS KB STTZN**	**22 16 10 7500 AL DBS KB STTZN**
Part No.	**105 700**	**105 750**
Height	7000 mm	7500 mm
PU	1 pc(s)	1 pc(s)

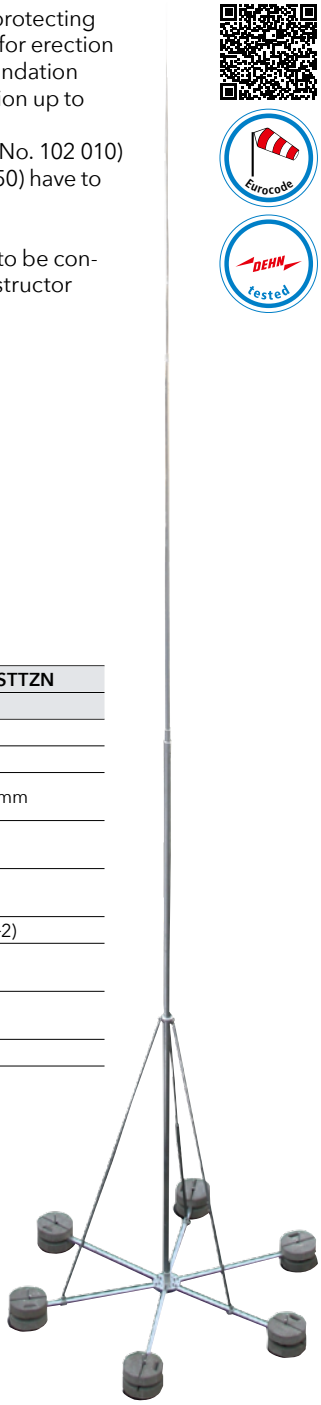
Type FS D40 ...	**16 10 8000 AL DBS KB STTZN**	**22 16 10 8500 AL DBS KB STTZN**
Part No.	**105 800**	**105 850**
Height	8000 mm	8500 mm
PU	1 pc(s)	1 pc(s)

Type FS D40 ...		**22 16 10 9000 AL DBS KB STTZN**
Part No.		**105 900**
Height		9000 mm
PU		1 pc(s)

Self-supporting Air-Termination Rods 10 and 11 m

With hinged six-legged stand for protecting larger roof-mounted structures or for erection on compacted ground without foundation works, adjustable to a roof inclination up to max. 10°
The stackable concrete base (Part No. 102 010) and the base plate (Part No. 102 050) have to be ordered separately.

Note: Permissible roof loads have to be considered and checked with the constructor where required.



Free height 10 m

Type FS D60 10 ...	**10M AL SBS STTZN**
Part No.	**105 910**
Height	10000 mm
Radius	1200 mm
Space required for six-legged stand	2900 x 2560 mm
Material of six-legged stand	**St/tZn**
Material of air-termination mast/air-termination rod	**Al**
Standard	EN 62561-(1+2)
Surface load with 12 bases, 17 kg each	268 kg
Surface load with 18 bases, 17 kg each	370 kg
PU	1 pc(s)

Free height 11 m

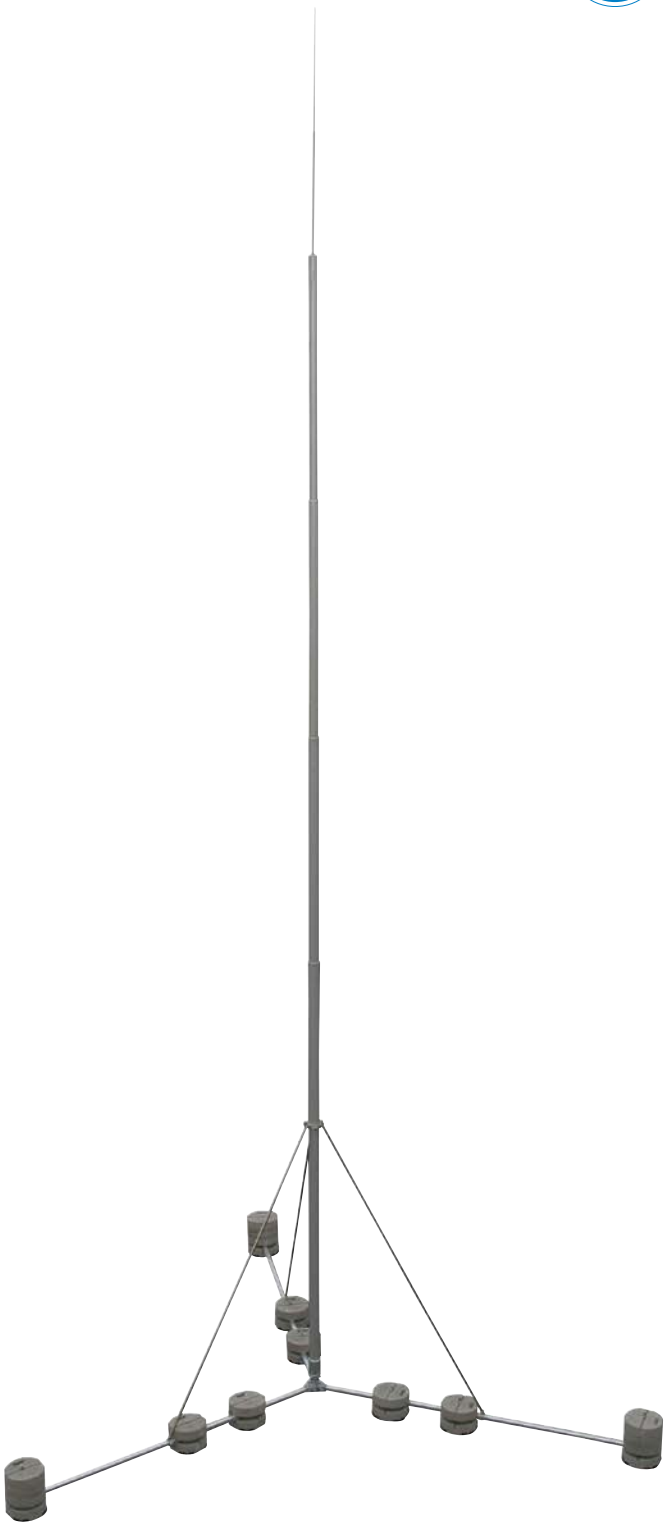
Type FS D60 10 ...	**11M AL SBS STTZN**
Part No.	**105 911**
Height	11000 mm
Radius	1200 mm
Space required for six-legged stand	2900 x 2560 mm
Material of six-legged stand	**St/tZn**
Material of air-termination mast/air-termination rod	**Al**
Standard	EN 62561-(1+2)
Surface load with 12 bases, 17 kg each	269 kg
Surface load with 18 bases, 17 kg each	371 kg
PU	1 pc(s)

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Self-supporting Air-Termination Rods 12 to 14 m

With hinged tripod for protecting larger roof-mounted structures or for erection on compacted ground without foundation works.
Adjustable to a roof inclination of max. 5°.
The stackable concrete block (Part No. 102 010) and the base plate (Part No. 102 050) have to be ordered separately.

Note: Permissible roof loads have to be considered and checked with the constructor where required.



Free height 12 m

Type FS D100 10 ...	12M AL DBS STTZN
Part No.	**105 922**
Height	12000 mm
Radius	3000 mm
Space required for tripod	4920 x 5640 mm
Material of tripod	**St/tZn**
Material of air-termination mast /air-termination rod	**Al**
Standard	EN 62561-(1+2)
Surface load with 18 bases, 17 kg each	approx. 420 kg
Surface load with 21 bases, 17 kg each	approx. 475 kg
Surface load with 24 bases, 17 kg each	approx. 525 kg
PU	1 pc(s)

Free height 13 m

Type FS D100 10 ...	13M AL DBS STTZN
Part No.	**105 923**
Height	13000 mm
Radius	3000 mm
Space required for tripod	4920 x 5640 mm
Material of tripod	**St/tZn**
Material of air-termination mast /air-termination rod	**Al**
Standard	EN 62561-(1+2)
Surface load with 18 bases, 17 kg each	approx. 421 kg
Surface load with 21 bases, 17 kg each	approx. 476 kg
Surface load with 24 bases, 17 kg each	approx. 526 kg
PU	1 pc(s)

Free height 14 m

Type FS D100 10 ...	14M AL DBS STTZN
Part No.	**105 924**
Height	14000 mm
Radius	3000 mm
Space required for tripod	4920 x 5640 mm
Material of tripod	**St/tZn**
Material of air-termination mast /air-termination rod	**Al**
Standard	EN 62561-(1+2)
Surface load with 18 bases, 17 kg each	approx. 430 kg
Surface load with 21 bases, 17 kg each	approx. 481 kg
Surface load with 24 bases, 17 kg each	approx. 532 kg
PU	1 pc(s)

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

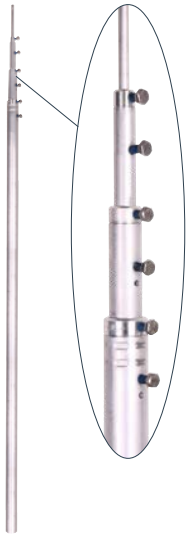
Telescopic air-termination rods

Can be used in three and four-legged stands and for fixing on to, for example, walls or other structures.

The respective wind loads and the quantity of concrete bases can be found in the installation instructions.

The maximum free length refers to the distance between the rod tip and the upper holder (fixing point).
For reasons of stability, the centre holder (3 fixing points) should be mounted directly below the upper holder if possible. The distance must not be more than 15 cm. The lower holder (fixing point) has to be installed within a range of ≤ 15 cm at the end of the air-termination rod.

Height 1.5-5.2 m



Type FS T ...	D40 1500 5200 AL
Part No.	**105 185**
Total length	5200 mm
Air-termination tip (Ø length)	10-1000 mm
Termination mast (Ø length)	40/30/20-4200 mm
Transport length	1650 mm
Mast segments	4
Foot Ø	40 mm
Max. free length with air-termination rod	4200 mm
Clamping length	500 mm and 1000 mm
Number of fixings	2
Material of air-termination rod	Al
Standard	DIN EN 62561-(1+2)
PU	1 pc(s)

Height 1.6-6.5 m

Type FS T ...	D50 1600 6500 AL
Part No.	**105 186**
Total length	6500 mm
Air-termination tip (Ø length)	10-1000 mm
Termination mast (Ø length)	50/40/30/20-5500 mm
Transport length	1650 mm
Mast segments	5
Foot Ø	50 mm
Max. free length with air-termination rod	5200 mm
Clamping length	1000 mm and 1300 mm
Number of fixings	2-3
Material of air-termination rod	Al
Standard	DIN EN 62561-(1+2)
PU	1 pc(s)

Height 1.8-8 m

Type FS T ...	D60 1800 8000 AL
Part No.	**105 188**
Total length	8000 mm
Air-termination tip (Ø length)	10-1000 mm
Termination mast (Ø length)	50/60/50/40/30/20-7000 mm
Transport length	1850 mm
Mast segments	6
Foot Ø	60 mm
Max. free length with air-termination rod	6300 mm
Clamping length	1700 mm
Number of fixings	3
Material of air-termination rod	Al
Standard	DIN EN 62561-(1+2)
PU	1 pc(s)

Accessories for Telescopic air-termination rods

Connection bracket

Connection bracket as per DIN EN 62561-1, to connect round conductors to air-termination rods using KS connectors.



Type	AS D40 KSV 6.10 V2A
Part No.	**105 374**
Material	StSt
Clamping range Rd	6-10 mm
Type for air-termination rods	Ø40 mm
Standard	DIN EN 62561-1
PU	1 pc(s)

Connection bracket

Connection bracket as per DIN EN 62561-1, to connect round conductors to air-termination rods using KS connectors.



Type	AS D50 KSV 6.10 V2A
Part No.	**105 375**
Material	StSt
Clamping range Rd	6-10 mm
Type for air-termination rods	Ø50 mm
Standard	DIN EN 62561-1
PU	1 pc(s)

Telescopic, self-supporting air-termination rods up to 8 m

Self-supporting air-termination rod with hinged three or four-legged stand for protecting larger roof-mounted structures, adjustable to the roof slope up to max. 10°.

The stackable concrete base (weight 17 kg / part no. 102 010) and the plastic base plate (part no. 102 050) have to be ordered separately.

Note: Permissible roof loads have to be considered and checked with the constructor where required.

With HDG steel stand



General technical data:	
Air-termination tip (Ø length)	10-1000 mm
Stand material	**HDG steel (St/tZn)**
Air-termination mast material	**Al**
Standard	DIN EN 62561-(1+2)

Type FS T ...	D40 1.5 5.2M AL DBS RA560 STTZN	D50 1.6 6.5M AL DBS RA1435 STTZN
Part No.	**105 711**	**105 713**
Height	5200 mm	6500 mm
Termination mast (Ø length)	40/30/20-4200 mm	50/40/30/20-5500 mm
Radius	560 mm	1435 mm
Space required for stand	1210 x 1340 mm	2850 x 2530 mm
PU	1 pc(s)	1 pc(s)

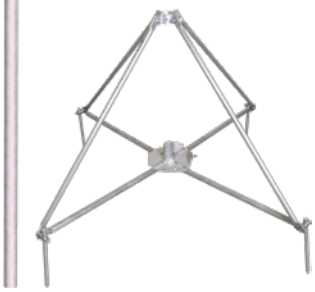
Type FS T ...	D50 1.8 8.0M AL DBS RA1435 STTZN
Part No.	**105 716**
Height	8000 mm
Termination mast (Ø length)	50/60/50/40/30/20-7000 mm
Radius	1435 mm
Space required for stand	2850 x 2530 mm
PU	1 pc(s)

With stainless steel stand

Tripod
Part No. 105 710



Four-legged stand
Part No. 105 712
Part No. 105 714
Part No. 105 715



General technical data:	
Air-termination tip (Ø length)	10-1000 mm
Stand material	**StSt**
Air-termination mast material	**Al**
Standard	DIN EN 62561-(1+2)

Type FS T ...	D40 1.5 5.2M AL DBS RA680 V2A	D50 1.6 6.5M AL VBS RA680 V2A
Part No.	**105 710**	**105 712**
Height	5200 mm	6500 mm
Termination mast (Ø length)	40/30/20-4200 mm	50/40/30/20-5500 mm
Radius	680 mm	680 mm
Space required for stand	1400 x 1600 mm	1400 x 1400 mm
PU	1 pc(s)	1 pc(s)

Type FS T ...	D50 1.8 8.0M AL VBS RA680 V2A	D50 1.8 8.0M AL VBS RA1330 V2A
Part No.	**105 714**	**105 715**
Height	8000 mm	8000 mm
Termination mast (Ø length)	50/60/50/40/30/20-7000 mm	50/60/50/40/30/20-7000 mm
Radius	680 mm	1330 mm
Space required for stand	1400 x 1400 mm	2300 x 2300 mm
PU	1 pc(s)	1 pc(s)

Accessories for Telescopic, self-supporting air-termination rods up to 8 m

Concrete base

With fixing wedge, stackable, for erecting tripods and air-termination rods Ø16 mm, chamfered or tapered, DEHNiso spacer Ø16 mm or conductor holder (Part No. 253 279).



Type	BES 17KG KT16 D337 SET
Part No.	**102 010**
Weight	17 kg
Support	with fixing wedge Ø16 mm
Diameter Ø	337 mm
Material	**concrete (C45/55)**
Material of wedge / adapter	**StSt**
PU	54 pc(s)

Concrete base

Concrete base without wedge for the erection of tripods and four-legged stands



Type	BES 17KG KT16 D337
Part No.	**102 012**
Weight	17 kg
Support	Ø16 mm
Diameter Ø	337 mm
Material	**concrete (C45/55)**
PU	54 pc(s)

Air-Termination Rods D40

For fixing on to, for example, walls or other structures.

The maximum free length refers to the distance between the rod tip and the upper holder (fixing point).
For reasons of stability, the centre holder (3 fixing points) should be mounted directly below the upper holder if possible. The distance must not be more than 15 cm. The lower holder (fixing point) has to be installed within a range of ≤ 15 cm at the end of the air-termination rod.



Al

General technical data:		
Material of air-termination rod		Al
Standard		EN 62561-(1+2)

Type FS D40 ...	16 10 4000 KSV AL	22 16 10 4500 KSV AL
Part No.	105 170	105 175
Total length (l1)	4000 mm	4500 mm
Max. free length with air-termination rod (l2)	3500 mm	4000 mm
Clamping length (l3)	500 mm	500 mm
Number of fixings	2	2
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 5000 KSV AL	22 16 10 5500 KSV AL
Part No.	105 171	105 176
Total length (l1)	5000 mm	5500 mm
Max. free length with air-termination rod (l2)	4000 mm	4500 mm
Clamping length (l3)	1000 mm	1000 mm
Number of fixings	2	2
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 6000 KSV AL	22 16 10 6500 KSV AL
Part No.	105 172	105 177
Total length (l1)	6000 mm	6500 mm
Max. free length with air-termination rod (l2)	4500 mm	5000 mm
Clamping length (l3)	1500 mm	1500 mm
Number of fixings	3	3
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 7000 KSV AL	22 16 10 7500 KSV AL
Part No.	105 173	105 178
Total length (l1)	7000 mm	7500 mm
Max. free length with air-termination rod (l2)	5500 mm	5500 mm
Clamping length (l3)	1500 mm	2000 mm
Number of fixings	3	3
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 8000 KSV AL	22 16 10 8500 KSV AL
Part No.	105 174	105 179
Total length (l1)	8000 mm	8500 mm
Max. free length with air-termination rod (l2)	5500 mm	5500 mm
Clamping length (l3)	2500 mm	3000 mm
Number of fixings	3	3
PU	1 pc(s)	1 pc(s)

StSt

General technical data:		
Material of air-termination rod		StSt
Standard		EN 62561-(1+2)

Type FS D40 ...	16 10 4000 KSV V2A	22 16 10 4500 KSV V2A
Part No.	105 190	105 195
Total length (l1)	4000 mm	4500 mm
Max. free length with air-termination rod (l2)	3500 mm	4000 mm
Clamping length (l3)	500 mm	500 mm
Number of fixings	2	2
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 5000 KSV V2A	22 16 10 5500 KSV V2A
Part No.	105 191	105 196
Total length (l1)	5000 mm	5500 mm
Max. free length with air-termination rod (l2)	4000 mm	4500 mm
Clamping length (l3)	1000 mm	1000 mm
Number of fixings	2	2
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 6000 KSV V2A	22 16 10 6500 KSV V2A
Part No.	105 192	105 197
Total length (l1)	6000 mm	6500 mm
Max. free length with air-termination rod (l2)	4500 mm	5000 mm
Clamping length (l3)	1500 mm	1500 mm
Number of fixings	3	3
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 7000 KSV V2A	22 16 10 7500 KSV V2A
Part No.	105 193	105 198
Total length (l1)	7000 mm	7500 mm
Max. free length with air-termination rod (l2)	5500 mm	5500 mm
Clamping length (l3)	1500 mm	2000 mm
Number of fixings	3	3
PU	1 pc(s)	1 pc(s)

Type FS D40 ...	16 10 8000 KSV V2A	22 16 10 8500 KSV V2A
Part No.	105 194	105 199
Total length (l1)	8000 mm	8500 mm
Max. free length with air-termination rod (l2)	5500 mm	5500 mm
Clamping length (l3)	2500 mm	3000 mm
Number of fixings	3	3
PU	1 pc(s)	1 pc(s)

Shorter transport lengths (separable pipe) are available upon request. Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Stands for air-termination rods D40 and GRP/Al supporting tubes

For erection with concrete bases (weight 17 kg). Adjustable to the roof slope up to max. 10° using a variable fixing on the base holder. The D40 air-termination rods / supporting tubes must be ordered separately.

The stackable concrete bases, the plastic base plates, the base holder set for holding additional concrete bases and the adapter set for D40 air-termination rods are each available separately in the accessories.

Tripod, small



For air-termination rods D40, DEHNiso Combi supporting tubes with air-termination rod / tip or HVI Conductor installed in / on the supporting tube.
Connection with double clamp for 2x Rd 8–10 mm [lightning-current-carrying capability 100 kA (10/350 µs)].

Type	DBS KB D50 RA680 V2A
Part No.	**107 390**
Material of tripod	StSt
Support	50 and 40*) mm
Radius	680 mm
Space required for tripod	1175 x 1020 mm
PU	1 pc(s)

*) Only with adapter set part no. 107 399.

Tripod, large



For air-termination rods D40, DEHNiso Combi supporting tubes with air-termination rod / tip or HVI Conductor installed in / on the supporting tube.
Connection with double clamp for 2x Rd 8–10 mm [lightning-current-carrying capability 100 kA (10/350 µs)].

Type	DBS KB D50 RA1330 V2A
Part No.	**107 391**
Material of tripod	StSt
Support	50 and 40*) mm
Radius	1330 mm
Space required for tripod	2300 x 1995 mm
PU	1 pc(s)

*) Only with adapter set part no. 107 399.

Four-legged stand, small



For air-termination rods D40, D50 and D60, DEHNiso Combi supporting tubes with air-termination rod / tip or HVI Conductor installed in / on the supporting tube.
Connection with double clamp for 2x Rd 8–10 mm [lightning-current-carrying capability 100 kA (10/350 µs)].

Type	VBS KB D50 RA680 V2A
Part No.	**107 490**
Material of tripod	StSt
Support	50 and 40*) mm
Radius	680 mm
Space required for tripod	960 x 960 mm
PU	1 pc(s)

*) Only with adapter set part no. 107 399.

Four-legged stand, large



For air-termination rods D40, D50 and D60, DEHNiso Combi supporting tubes with air-termination rod / tip or HVI Conductor installed in / on the supporting tube.
Connection with double clamp for 2x Rd 8–10 mm [lightning-current-carrying capability 100 kA (10/350 µs)].

Type	VBS KB D50 RA1330 V2A
Part No.	**107 491**
Material of tripod	StSt
Support	50 and 40*) mm
Radius	1330 mm
Space required for tripod	1880 x 1880 mm
PU	1 pc(s)

*) Only with adapter set part no. 107 399.

Hinged design, St/tZn



For air-termination rods Ø40 mm or supporting tubes Ø50 mm, length 3200 mm (e.g. Part No. 105 440 or 105 300) without additional fixing to structural elements.
Connection with double clamp for 2x Rd 8-10 mm [lightning current carrying capability 100 kA (10/350 µs)].

Type DBS KB D40.50 ...	RA560 STTZN	RA620 STTZN
Part No.	**105 200**	**105 351**
Support	Ø40 / 50 mm	40 / 50 mm
Radius	560 mm	620 mm
Space required for tripod	1200 x 1330 mm	1300 x 1450 mm
Standard	EN 62561-1	–
PU	1 pc(s)	1 pc(s)

Accessories for Stands for air-termination rods D40 and GRP/Al supporting tubes

Set of base support rods for tripods



Type	SOH 3 200 V2A
Part No.	**107 396**
For tripod	Part No. 107 390 / 107 391
Number of concrete bases	1 to 2
Material	StSt
Diameter	16 mm
Length	200 mm
PU	1 pc(s)

Set of base support rods for four-legged stands



Type	SOH 4 200 V2A
Part No.	**107 496**
For four-legged stand	Part No. 107 490 / 107 491
Number of concrete bases	1 to 2
Material	StSt
Diameter	16 mm
Length	200 mm
PU	1 pc(s)

Adapter set



Adapter set for reducing the diameter from 50 mm to 40 mm for tripods and four-legged stands.

Type	RED D40 V2A DBS VBS
Part No.	**107 399**
For tripod	Part No. 107 390 / 107 391
For four-legged stand	Part No. 107 490 / 107 491
Material	StSt
PU	1 pc(s)

Supporting tube stand for GRP/Al supporting tubes and Ø40 air-termination rods

For erection by means of a counter plate on wire mesh cable trays and steel girders or other structures. The adapter set for Ø40 air-termination rods is available separately in the accessories.
The D40 air-termination rods / supporting tubes must be ordered separately.



Type	SRS D50 300 300 H500 STTZN
Part No.	**105 244** NEW
Material	**HDG steel**
Support	Ø50 mm and Ø40 mm *)
Fixing	4x 13 x 30 mm
Plate dimensions	300 x 300 x 8 mm
Height	500 mm
PU	1 pc(s)

*) For holding Ø40-mm air-termination rods, only possible with adapter kit, part no. 107 399, and the holding of Ø40-mm HVI supporting tubes, only possible with adapter, part no. 819 799.

Accessories for Supporting tube stand for GRP/Al supporting tubes and Ø40 air-termination rods

Counter plate for supporting tube stands Ø50



Type	GP 300 300 T8 STTZN
Part No.	**105 243** NEW
Material	**HDG steel**
Fixing	4x 13 x 30 mm
Dimensions	300 x 300 x 8 mm
PU	1 pc(s)

Adapter set

Adapter set for reducing the diameter from 50 mm to 40 mm for tripods and four-legged stands.



Type	RED D40 V2A DBS VBS
Part No.	**107 399**
For tripod	Part No. 107 390 / 107 391
For four-legged stand	Part No. 107 490 / 107 491
Material	StSt
PU	1 pc(s)

Adapter



Type	AD 50 40 L110 STTZN
Part No.	**819 799**
Material	**HDG steel**
PU	1 pc(s)

Concrete bases

For air-termination rods, for protecting small roof-mounted structures on flat roofs and for installing spacers from the DEHNiso spacer product line, e.g. for isolated ring conductors or for self-supporting air-termination rods in the tripod (only with a weight of 17 kg).

Note: Please contact us to find out whether the material of the roof conductor holder or base plate is compatible with the roof elements.

Weight 17 kg, with fixing wedge

Stackable, for air-termination rods Ø16 mm, chamfered, tapered, or for DEHNiso spacers Ø16 mm.



Type BES ...	17KG KT16 D337 SET
Part No.	**102 010**
Weight	17 kg
Support	wedge Ø16 mm
Diameter Ø	337 mm
Material	**concrete (C45/55)**
Material of wedge	StSt
PU	54 pc(s)

Weight 17 kg, concrete base with fixing wedge and adapted base plate

Stackable



Type BES ...	17KG KT16 ULP D337 SET
Part No.	**102 340**
Weight	17 kg
Support	with fixing wedge Ø16 mm
Diameter Ø	337 mm
Material	**concrete (C45/55)**
Material of wedge	StSt
PU	54 pc(s)

Weight 17 kg, with threaded adapter

For air-termination rods with M16 thread.



Type BES ...	17KG M16 D337
Part No.	**102 002**
Weight	17 kg
Support	M16 thread
Diameter Ø	337 mm
Material	**concrete (C45/55)**
Material of adapter	**plastic**
PU	54 pc(s)

Weight 17 kg

Concrete base without wedge for the erection of tripods and four-legged stands with M16 base support rods (e.g. part no. 107 390 + 107 396 ...).



Type BES ...	17KG KT16 D337
Part No.	**102 012**
Weight	17 kg
Support	Ø16 mm
Diameter Ø	337 mm
Material	**concrete (C45/55)**
PU	54 pc(s)

Weight 8.5 kg, with fixing wedge



For air-termination tips Ø10 mm, length 1000 mm, or DEHNiso spacers Ø16 mm, length up to 675 mm (distance 0.8 m), or conductor holders (Part No. 253 279).

Type BES ...	8.5KG KT10 16 D240 SET
Part No.	**102 075**
Weight	8.5 kg
Support	wedge Ø10 / 16 mm
Diameter Ø	240 mm
Material	**concrete (C45/55)**
Material of wedge	StSt
PU	120 pc(s)

Weight 8.5 kg, with threaded adapter



For air-termination rods with thread and additional fixing, e.g. with DEHNiso spacers.

Type BES ...	8.5KG M16 D240
Part No.	**102 003**
Weight	8.5 kg
Support	M16 thread
Diameter Ø	240 mm
Material	**concrete (C45/55)**
Material of adapter	**plastic**
PU	120 pc(s)

Accessories for Concrete bases

Wedge for Concrete Base



Type	KEIL BES NIRO
Part No.	**102 019**
Material	StSt
Dimension (l x w x d)	60 x 18 x 1.5 mm
PU	54 pc(s)

Support tool



Aluminium support tool with safety bow made of stainless steel, for concrete bases of 8.5 kg and 17 kg.

Type	TG AL SB A2 BES 17KG
Part No.	**590 000** NEW
Material	Al / StSt
Diameter	16 mm
PU	1 pc(s)

Plastic base plates

To protect the roof sheeting under the concrete base.

Large



For concrete bases (Part Nos. 102 010, 102 002), weight 17 kg.

Type ULP KS ...	D370 SW
Part No.	**102 050**
Outside diameter Ø	370 mm
Inside diameter Ø	360 mm
Material	**EVA**
Colour	black ●
PU	1 pc(s)

Small



For concrete bases (Part No. 102 075, 102 003), weight 8.5 kg.

Type ULP KS ...	D280 SW
Part No.	**102 060**
Outside diameter Ø	280 mm
Inside diameter Ø	270 mm
Material	**EVA**
Colour	black ●
PU	1 pc(s)

Mounting Bracket for Air-Termination Systems on Metal Roofs

Stainless steel mounting bracket for installing HVI air-termination systems or air-termination rods on metal roofs:

Mounting bracket suitable for vertical mounting of air-termination systems on metal roofs with a max. roof slope of up to 53°.

For fixing Ø40/50 air-termination rods and for top-mounting HVI light plus and HVI supporting tubes with inside conductor routing.

Note: Mounting conditions on site must be clarified with the builder. You can find more information on max. gust wind speeds at www.dehn-international.com



Type	MDH D48 VB550.900 V2A
Part No.	**105 241**
Material	StSt
Adjustment range	550-900 mm
Roof inclination	5-53°
Standard	EN 62561-1
PU	1 pc(s)

Accessories for Mounting Bracket for Air-Termination Systems on Metal Roofs

C-mounting rail for mounting bracket for installation on metal roofs



C mounting rails with holes for fixing the mounting bracket on roofs with large batten distances (> 600 mm).

Type	MSC MDH V4A L1000 MZ V2A	MSC MDH V4A L1500 MZ V2A
Part No.	**123 050**	**123 051**
Material of the rail	StSt (V4A)	StSt (V4A)
Dimensions of the rail (l x w x h)	[2x] 1000 x 41 x 41 mm	[2x] 1500 x 41 x 41 mm
PU	1 pc(s)	1 pc(s)

Type	MSC MDH V4A L2000 MZ V2A
Part No.	**123 052**
Material of the rail	StSt (V4A)
Dimensions of the rail (l x w x h)	[2x] 2000 x 41 x 41 mm
PU	1 pc(s)

Air-Termination Rods for Metal Roofs

For protecting roof-mounted structures, domelights, etc.
It is fixed at the end of the braces (Ø11-mm holes) by four holders for metal roofs.
The holders must be selected according to the roof profile (round standing seam part no. 123 040, clamping seam part no. 123 041, standing seam 123 042, without seam for riveting or screwing 123 043).

Height 2000 mm
With M16 threaded bolts.



Type FS ...	16 10 2000 MD AL V2A
Part No.	**123 021**
Total length (Ø16 / 10 mm)	2000 mm
Max. gust wind speed	184 km/h
Profile distance	230-520 mm
Fixing	[4x] Ø11 mm
Material of braces	StSt
Material of air-termination rod	Al
Standard	EN 62561-(1+2)
PU	1 pc(s)

Height up to 3500 mm
Adjustable to a roof inclination up to max. 10°.



General technical data:	
Profile distance	230-520 mm
Fixing	[4x] Ø11 mm
Material of braces	StSt
Standard	EN 62561-(1+2)

Type FS ...	22 16 10 2500 SK AL V2A	22 16 10 3000 SK AL V2A
Part No.	**123 425**	**123 430**
Total length (Ø22 / 16 / 10 mm)	2500 mm	3000 mm
Max. gust wind speed	185 km/h	149 km/h
Material of air-termination rod	Al	Al
PU	1 pc(s)	1 pc(s)

Type FS ...	22 16 10 3500 SK AL V2A
Part No.	**123 435**
Total length (Ø22 / 16 / 10 mm)	3500 mm
Max. gust wind speed	114 km/h
Material of air-termination rod	Al / StSt
PU	1 pc(s)

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Accessories for Mounting Bracket for Air-Termination Systems on Metal Roofs

Holder for metal roofs with round standing seam
Screw with self-locking nut.



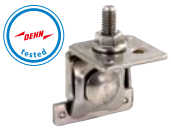
Type	HA M8 RSF20.25 V2A
Part No.	**123 040**
Material of holder	StSt
Clamping range	Ø20-25 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Holder for metal roofs with clamping seam (e.g. RIB-ROOF Speed 500 from Zambelli)
Screw with self-locking nut.



Type	HA M8 KF18.22 V2A
Part No.	**123 041**
Material of holder	StSt
Clamping range	approx. 18 / 22 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Holder for metal roofs with standing seam
Screw with self-locking nut.



Type	HA M8 SF0.7 8 V2A
Part No.	**123 042**
Material of holder	StSt
Clamping range	0.7-8 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Holder for metal roofs for riveting or screwing
Screw lock using self-locking nut with serrated bearing.
Note: The leak-tightness of the roof must be ensured during installation; e.g. by using waterproof cup rivets. You might need to consult with the trade people responsible.



Type	HA M8 AL ZF B5.2 6.5 V2A
Part No.	**123 043**
Material of holder	StSt
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Air-Termination Rod for Trapezoidal Roofs

For protecting roof-mounted structures, domelights etc.
The air-termination rod is placed in the gap between the trapezoidal seams profile.
The variable base frame can be adjusted to all trapeziodal profiles.
The special holder for the air-termination rod can compensate roof inclinations up to 10°.



Type with a length of 1500 mm (with Part No. 103 210) is available upon request.

Type	FS 16 10 2000 TD AL V2A K
Part No.	**123 032**
Total length (Ø16 / 10 mm)	2000 mm
Max. gust wind speed	137 km/h
Profile distance	600-770 mm
Material of air-termination rod	Al
Material of bases	plastic
Standard	EN 62561-2
PU	1 pc(s)

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Supports for Air-Termination Rods D40

Wall mounting bracket for horizontal mounting, flat



Type	WB D40 WA V2A
Part No.	**105 140**
Material	StSt
Fixing	[8x] Ø5.1 / [4x] 11 x 20 mm
Distance from wall	80 mm
Clamping range for air-termination rod	40 mm
PU	1 pc(s)

Wall mounting bracket for vertical mounting



Type	WB D40.50 SE WA46 V2A	WB D40.50 SE WA110 V2A
Part No.	**105 342**	**105 348**
Material	StSt	StSt
Fixing	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm
Distance from wall	46 mm	110 mm
Clamping range for air-termination rod	40-50 mm	40-50 mm
PU	1 pc(s)	1 pc(s)

Wall mounting bracket, adjustable from 150-200 mm

For attaching supporting tubes or air-termination rods D40 / D50, with double clamp for connecting 2x Rd 8-10 mm.



Type	WB D40.50 V150.200 V2A
Part No.	**105 344**
Material	StSt
Fixing	[4x] 12 x 26 mm
Distance from wall	150-200 mm
Clamping range Rd	8-10 mm
Clamping range for air-termination rod	40-50 mm
Standard	EN 62561-1
PU	1 pc(s)

Wall mounting bracket, adjustable from 230-1300 mm



Type	WB D40.50 V230.400 STTZN V2A	WB D40.50 V400.700 STTZN V2A
Part No.	**105 347**	**105 343**
Material	St/tZn / StSt	St/tZn / StSt
Distance from wall	230-400 mm	400-700 mm
PU	1 pc(s)	1 pc(s)

Railing clamp



Type	BS D40.50 D48.60 V2A
Part No.	**105 354**
Material	StSt
Clamping range Ø of pipe	48-60 mm (1 1/2-2")
Clamping range for air-termination rod	40-50 mm
PU	5 pc(s)

Railing clamp with spacer

With spacer for adjusting e.g. antenna supports.



Type	BSC D40 DS95 D45.65 V2A
Part No.	**105 162**
Material	StSt
Clamping range Ø of pipe	45-65 mm (1 1/2-2")
Clamping range for air-termination rod	40-50 mm
Length of spacer	95 mm
Standard	EN 62561-1
PU	1 pc(s)

Fixing clamp with tensioning strap

Two fixing clamps ensure mechanical stability and a lightning current carrying capability of 100 kA (10/350 µs).



Type	BSC D40.50 SB50.300 V2A
Part No.	**105 160**
Material	StSt
Clamping range Ø of pipe	50-300 mm
Clamping range for air-termination rod	40-50 mm
Dimensions of strap (w x d)	25 x 0.3 mm
Standard	EN 62561-1
PU	1 pc(s)

Fixing clamp with tensioning strap and spacer

With additional long spacer for adjusting sector antenna supports on the mast.



Type	BS D40.50 DS95 SB50.300 V2A
Part No.	**105 163**
Material	StSt
Clamping range Ø of pipe	50-300 mm
Clamping range for air-termination rod	40-50 mm
Dimensions of strap (w x d)	25 x 3.0 mm
Length of spacer	95 mm
PU	1 pc(s)

Telescopic Lightning Protection Mast with Screw Foundation

Air-termination mast for protecting special facilities such as biogas plants and free field PV systems against direct lightning strikes.
The masts are erected in a screw foundation.
No digging or foundation work necessary.
The screw foundation is screwed into the natural ground and fixed in place by three earth rods Ø20 mm, length 1500 mm (Part No. 620 151). These must be ordered separately.
The air-termination masts are designed according to Eurocode.
These calculations are based on a natural ground pressure of 0.02 kN/cm² (e.g. loamy, sandy, gravelly soil of medium density).



General technical data:	
Standard	EN 62561-(1+2)

Type TBM ...	6M SCFU STTZN AL	7M SCFU STTZN AL
Part No.	103 121	103 122
Material	St/tZn / Al / StSt	St/tZn / Al
Height above ground level (l1)	6000 mm	7000 mm
PU	1 pc(s)	1 pc(s)

Type TBM ...	8M SCFU STTZN AL	9M SCFU STTZN AL
Part No.	103 123	103 124
Material	St/tZn / Al / StSt	St/tZn / Al
Height above ground level (l1)	8000 mm	9000 mm
PU	1 pc(s)	1 pc(s)

Type TBM ...	10M SCFU STTZN AL	11M SCFU STTZN AL
Part No.	103 125	103 126
Material	St/tZn / Al / StSt	St/tZn / Al
Height above ground level (l1)	10000 mm	11000 mm
PU	1 pc(s)	1 pc(s)

Mast holder, heavy version

For erecting air-termination systems on installations, such as biogas plants

The heavy version of the mast holder enables the mounting of air-termination masts with a diameter of Ø55–100 mm.



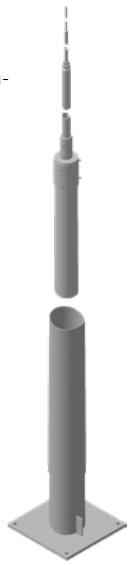
Type	WB D55.100 SE WA150 STTZN
Part No.	105 352 NEW
Material	HDG steel
Fixing	[4x] Ø14 mm
Distance from wall	106 mm
Clamping range (Ø mast)	55-100 mm
Material of threaded rod / nut / washer	StSt
PU	1 pc(s)

Telescopic Lightning Protection Mast for Bucket or Concrete Foundations

Air-termination mast for protecting facilities – such as biogas plants and free field PV systems, systems located in a hazardous area and ammunition depots – against direct lightning strikes.
The masts are erected in a bucket foundation (pre-fabricated) or an on-site concrete foundation with foundation basket (to be ordered separately).
For detailed information on the plug-in system, foundation and erection, please see the installation instructions.
Advantages of the air-termination mast system:

- Excavation work can be completed in advance
- Erection in (prefabricated) bucket foundation on site with comparatively little effort, or
- Erection in on-site concrete foundations with foundation basket (concrete curing time to be observed for scheduling and erection)
- Version with flange plate for fast mounting
- Easily adjustable with M24 threaded bolts
- Detailed mounting instructions
- Verifiable statics (upon request)
- Components:
- Air-termination rod, HDG steel, Ø42 / 25 / 15 mm, length 2400 or 5400 mm, with M20 thread and lock nut
- Conic mast segments
- Flange plate with terminal lug for earth connection borehole Ø12 mm (for Ø10-mm round conductor, e.g. with KS connector, part no. 301 019)

Max. transport length 6 m.



General technical data:	
Material	St/tZn
Standard	EN 62561-(1+2)

Type TBM ...	13.35M FP400 STTZN	16.35M FP400 STTZN
Part No.	103 013	103 016
Height above ground level	13380 mm	16380 mm
Mast segments	2	2
Dimensions of flange plate	400 x 400 mm	400 x 400 mm
Flange plate	4x Ø27 mm for 4x M24 (300 x 300 mm)	4x Ø27mm for 4x M24 (300 x 300 mm)
Dim. of on-site concrete foundation (l x w x h)	1400 x 1400 x 900 mm	1400 x 1400 x 900 mm
Weight	approx. 228 kg	approx. 230 kg
PU	1 pc(s)	1 pc(s)

Type TBM ...	19.35M FP565 STTZN	22.35M FP565 STTZN
Part No.	103 019	103 022
Height above ground level	19380 mm	22380 mm
Mast segments	3	4
Dimensions of flange plate	400 x 400 mm	565 x 565 mm
Flange plate	4x Ø27 mm for 4x M24 (300 x 300 mm)	8x Ø27 mm for 8x M24 (490 x 490 mm)
Dim. of on-site concrete foundation (l x w x h)	1600 x 1600 x 900 mm	1800 x 1800 x 900 mm
Weight	approx. 310 kg	approx. 450 kg
PU	1 pc(s)	1 pc(s)

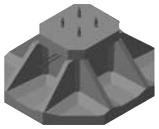
Type TBM ...	24.85M FP565 STTZN
Part No.	103 025
Height above ground level	24880 mm
Mast segments	5
Dimensions of flange plate	565 x 565 mm
Flange plate	8x Ø27 mm for 8x M24 (490 x 490 mm)
Dim. of on-site concrete foundation (l x w x h)	2000 x 2000 x 900 mm
Weight	approx. 550 kg
PU	1 pc(s)

Bucket Foundations for Telescopic Lightning Protection Masts

Prefabricated element for easy erection of telescopic lightning protection masts.
No concreting on site.
For detailed information on the telescopic system, foundation and erection, please see he installation instructions.

Type KöFU I

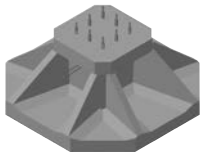
For masts with a height above ground level from 13.35 m to 19.35 m (Part No. 103 013 / 103 016 / 103 019).
Flange plate 400 x 400 mm.



Type KÖFU ...	I TBM FP400
Part No.	**103 030**
Material	**concrete (C50/60)**
Dimensions	1800 x 2000 x 850 mm
Weight	approx. 2.5 t
PU	1 pc(s)

Type KöFU II

For masts with a height of 22.35 m to 24.85 m above ground (part no. 103 022 or 103 025).
Flange plate 565 x 565 mm.



Type KÖFU ...	II TBM FP565
Part No.	**103 031**
Material	**concrete (C50/60)**
Dimensions	2400 x 2400 x 1010 mm
Weight	approx. 4.9 t
PU	1 pc(s)

Foundation Basket for On-site Concrete Foundations

With threaded bolts for setting in concrete, suitable for the flange plate of telescopic lightning protection masts.
For detailed information on the telescopic system, foundation and erection, see the installation instructions.

Small design

For masts with a height above ground level from 13.35 m to 19.35 m (Part No. 103 013 / 103 016 / 103 019).
Flange plate 400 x 400 mm.



Type AKO TBM ...	FP400
Part No.	**103 040**
Material	**steel**
Dimensions	472 x 324 x 870 mm
Type of threaded bolt	4x M24 (300 x 300 mm)
PU	1 pc(s)

Large design

For masts with a height above ground level from 22.35 m to 24.85 m (Part No. 103 022 or 103 025).
Flange plate 565 x 565 mm.



Type AKO TBM ...	FP565
Part No.	**103 041**
Material	**steel**
Dimensions	662 x 662 x 870 mm
Type of threaded bolt	8x M24 (490 x 490 mm)
PU	1 pc(s)

Air-Termination Rod for Ridge and Hip Tiles

For protecting solar thermal modules, photovoltaic generators or other roof-mounted structures on steep roofs.
The clamping bracket must be adjusted to the diameter of the ridge tiles before it is used to secure the air-termination rod.



Type	FS 10 1000 FG AL V2A
Part No.	123 109
Material of air-termination rod	Al
Length	1000 mm
Clamping range	120-240 mm
Standard	EN 62561-2
PU	1 pc(s)

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Holders for Air-Termination Systems on Ridge and Hip Tiles

For air-termination rods or spacer bars with conductor holder, for protecting solar thermal modules, photovoltaic generators or other roof-mounted structures on steep roofs.
The holder is mounted using a tensioning strap. One clip is permanently fixed to one end of the tensioning strap. The holder can be adjusted to various types of ridge tiles using the adjustable clip at the other end.

Air-termination tips / rods or spacer bars have to be ordered separately.

Single design

For air-termination tips (length 1000 mm) or spacer bars (GRP, Ø10 mm).



Type HA ...	10 1F FG120.300 V2A
Part No.	123 110
Clamping range Rd	10 mm
Tensioning range	120-300 mm
Material of fixing bush	StSt
PU	1 pc(s)

Double design

For air-termination rods Ø16 / 10 mm, max. length of 1.5 m, incl. clamping piece for connecting round conductors Rd 6-10 mm.



Type HA ...	16 2F FG120.300 V2A
Part No.	123 116
Clamping range Rd	16 mm
Tensioning range	120-300 mm
Mounting distance (l1)	approx. 280 / 350 / 420 mm
Material of fixing bush	StSt
PU	1 pc(s)

Accessories for Holders for Air-Termination Systems on Ridge and Hip Tiles

Air-termination tips

For protecting roof-mounted structures, chimneys.



Type	FS 10 1000 AL	FS 10 1000 V2A
Part No.	101 000	101 009
Total length	1000 mm	1000 mm
Material	Al	StSt
Standard	EN 62561-2	EN 62561-2
Diameter Ø	10 mm	10 mm
PU	20 pc(s)	20 pc(s)

Tubular air-termination rods

For protecting roof-mounted structures.



Type	RFS 16 10 1500 AL
Part No.	103 410
Total length (l1)	1500 mm
Material	AlMgSi
Diameter Ø	16 / 10 mm
Max. gust wind speed	175 km/h
PU	10 pc(s)

Spacer bar with conductor holder

For insertion into the holder for air-termination systems on ridge and hip tiles. For raised conductor routing, loose conductor routing.



Type	DILH 8 DS10 L280 K GR GFK	DILH 8 DS10 L420 K GR GFK
Part No.	253 315	253 325
Conductor support Rd	8 mm	8 mm
Material of conductor holder	plastic	plastic
Length (l1)	280 mm	420 mm
Insulating clearance	220 mm	360 mm
Permanent temperature range	-30 °C ... +80 °C	-30 °C ... +80 °C
Standard	Based on DIN IEC/ TS 62561-8 (VDE V 0185-561-8)	Based on DIN IEC/ TS 62561-8 (VDE V 0185-561-8)
PU	24 pc(s)	24 pc(s)

Rod Holder for Gable Roofs

Base for fixing air-termination rods on steep roofs, with anti-rotation protection (toothed lock washer) and lock nut as well as boreholes for screwing the brace onto the roof battens.
At the chimney, the air-termination rod requires additional fixing e.g. by means of DEHNiso spacer.



Type	SH BB16 L475 WS V2A STTZN
Part No.	223 005
Material of brace	St/tZn
Material of bolt	StSt
Length of brace	475 mm
Conductor support Rd	16 mm
PU	1 pc(s)

Pipe Clamp for Air-Termination Rods

For fixing as well as lightning current carrying contact of the air-termination rod, e.g. on metal substructures of photovoltaic (PV) installations (square hollow profile); typically installed on steel frame or reinforced concrete structures. When mounted on pipes, the pressure plate (flat plate 2x angled) has to be removed. Two pipe clamps have to be installed on each air-termination rod.

The maximum free length of the respective air-termination rod according to the wind load must be considered for installation.



Type	BRS 50.300 BB16 8 V2A
Part No.	**540 105**
Material of head / strap	StSt
Clamping range of square hollow profile	40 x 60 to 70 x 70 mm
Clamping range of pipe	50-300 mm
Connection Rd	16 mm
Dimensions of tensioning strap	1100 x 25 x 0.3 mm
Standard	EN 62561-1
PU	1 pc(s)

Angled Air-Termination Tips

For protecting, e.g. free field photovoltaic systems or carports with a PV system against direct lightning strikes.
A distance of 15-20 cm between the seam clamps and the free length of 80-85 cm should be ensured.
The air-termination tip is adjustable to the inclination angle of the PV system. The standard type is 55° angled which corresponds to a PV system inclination of 35°.

Air-termination tip with two seam clamps (Part No. 365 031)

Clamping range of the seam clamps 0.7-8 mm.



Type	FSPS 10 1000 W55 FK AL
Part No.	**101 110**
Total length	1000 mm
Material	Al
Diameter Ø	10 mm
PU	1 pc(s)

Separate air-termination tip

Can be combined, e.g. with connection clamps for steel girders.



Type	FSP 10 1000 W55 AL
Part No.	**101 010**
Total length	1000 mm
Material	Al
Diameter Ø	10 mm
PU	10 pc(s)

Special lengths of all air-termination rods / self-supporting air-termination rods are available upon request.

Air-Termination Stud

For installing meshed air-termination systems, for accessible flat roofs, e.g. parking decks.
The air-termination stud and the conductors may either be installed in concrete or in the joints between the decks.



Type	FP D80 ET70 8.10 V2A
Part No.	**108 009**
Material of clamp	StSt
Material of stud	StSt
Connection Rd	8-10 mm
Installation depth	min. 70 mm
Levelling range	18 mm
PU	1 pc(s)

Air-Termination Tips

End cap for air-termination conductors.

For steel or aluminium conductors



Type FS ...	7.10 ZG
Part No.	**110 000**
Material	ZDC
Conductor Rd	7-10 mm
Length	29 mm
Outside diameter Ø	15 mm
PU	50 pc(s)

For copper conductors



Type FS ...	8 MSGALCU
Part No.	**110 017**
Material	Brass/gal Cu
Conductor Rd	8 mm
Length	29 mm
Outside diameter Ø	14 mm
PU	10 pc(s)

Air-Termination Rods, Bases and Accessories

Air-termination rods manufactured from 99% copper, designed to be mounted in the flat, multi-purpose and ridge air-terminal bases. To protect structures and buildings from direct lightning strikes, designed as per the latest EN 62561-2 and EN 62561-1 standards. These air-termination rods are suitable for mounting multi point holders and air-termination spikes.

M16 Copper Air-Termination Rods



General technical data:	
Material	Copper
Size T	M16
Nominal Diameter D	15 mm
Accessories	M16 Lock Nut
Standards	IEC / EN IEC / BS EN IEC 62561-2

Type	AR 15 M16 500 CU	AR 15 M16 600 CU
Part No.	117 430	117 431
Length L	500 mm	600 mm
PU	10 pc(s)	10 pc(s)

Type	AR 15 M16 1000 CU	AR 15 M16 1500 CU
Part No.	117 432	117 433
Length L	1000 mm	1500 mm
PU	10 pc(s)	10 pc(s)

Type	AR 15 M16 2000 CU	AR 15 M16 3000 CU
Part No.	117 434	117 435
Length L	2000 mm	3000 mm
PU	10 pc(s)	5 pc(s)

M10 Copper Air-Termination Rods



General technical data:	
Material	Copper
Size T	M10
Nominal Diameter D	10 mm
Accessories	M10 Lock Nut
Standards	IEC / EN IEC / BS EN IEC 62561-2

Type AR 10 M10 ...	1000 CU	600 CU	500 CU
Part No.	117 441	117 440	117 439
Length L	1000 mm	600 mm	500 mm
PU	20 pc(s)	20 pc(s)	20 pc(s)

M10 Aluminium Air-Termination Rods



General technical data:	
Material	Aluminium
Size T	M10
Nominal Diameter D	10 mm
Accessories	M10 Lock Nut
Standards	IEC / EN IEC / BS EN IEC 62561-2

Type AR 10 M10 ...	300 AL	500 AL	1000 AL
Part No.	117 447	117 448	117 449
Length L	300 mm	500 mm	1000 mm
PU	25 pc(s)	20 pc(s)	20 pc(s)

Note: During high winds and extreme weather conditions air rods over 1000 mm long can be subjected to fatigue mechanisms. It is therefore recommended that additional supports are considered before installation.

M16 Aluminium Air-Termination Rods



General technical data:	
Material	Aluminium
Size T	M16
Nominal Diameter D	15 mm
Accessories	M16 Lock Nut
Standards	IEC / EN IEC / BS EN IEC 62561-2

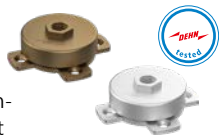
Type AR 15 M16 ...	300 AL	500 AL
Part No.	117 442	117 443
Length L	300 mm	500 mm
PU	25 pc(s)	10 pc(s)

Type AR 15 M16 ...	1000 AL	1500 AL	2000 AL
Part No.	117 444	117 445	117 446
Length L	1000 mm	1500 mm	2000 mm
PU	10 pc(s)	10 pc(s)	10 pc(s)

Note: During high winds and extreme weather conditions air rods over 1000 mm long can be subjected to fatigue mechanisms. It is therefore recommended that additional supports are considered before installation.

Air-Termination Rod Bases

Air-Termination Rod Bases are used to mount Air-Termination Rods to flat surfaces. The bases are designed for clamping flat conductors to allow straight through, cross, right angle and T- connections.



Type	ARB M16 FL 25X3 HCA	ARB M16 FL 25X3 ALA
Part No.	117 465	117 466
Material	High Copper Alloy	Aluminium Alloy
Air Termination Rod Material	Copper	Aluminium
Conductor Material	Copper	Aluminium
Air Termination Rod Thread Size	M16 / M10 *)	M16 / M10 *)
Clamping range Fl	25 x 3 mm	25 x 3 mm
Tightening Torque	15 Nm	15 Nm
Standards	IEC / EN / BS EN 62561-1	IEC / EN / BS EN 62561-1
Classification	Higher than Class H (200 kA)	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA	I_{imp} 100 kA
PU	4 pc(s)	4 pc(s)

Multipurpose Air-Termination Rod Bases

Multipurpose Air-Termination Rod Bases are used to mount Air-Termination Rods to flat vertical or horizontal surfaces. The bases are designed for clamping flat conductors to allow straight through, cross, right angle, parallel and T- connections..



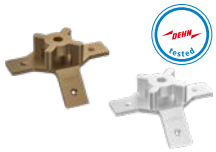
General technical data:	
Air-Termination Rod Thread Size	M16 / M10 *)
Clamping range Fl	25 x 3 mm
Clamping range Rd	8 - 10 mm
Clamping range (Stranded / Cable)	50 - 70 mm²
Clamping range Fl / Rd	25 x 3 mm / 8 - 10 mm
Clamping range Fl / Stranded cable	25 x 3 mm / 50 - 70 mm²
Clamping range Rd / Stranded cable	8 - 10 mm / 50 - 70 mm²
Tightening Torque	15 Nm
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA

Type MARB M16/M10 ...	FLRDSC 25X3/8.10/50.70 HCA	FLRDSC 25X3/8.10/50.70 ALA
Part No.	118 473	117 473
Material	High Copper Alloy	Aluminium Alloy
Air-Termination Rod Material	Copper	Aluminium
Conductor Material	Copper	Aluminium
PU	4 pc(s)	4 pc(s)

*) Use M10 Air-Termination Rod Adapter, Part Number: 118472

Air-Termination Rod Ridge Bases

Air-Termination Rod Rdige Bases are used to mount Air-Termination Rods ridge saddle surfaces. The bases are designed for clamping flat conductors to allow straight through, cross, right angle and T-connections..



Type	ARRB M16 FL 25X3 HCA	ARRB M16 FL 25X3 ALA
Part No.	**118 471**	**117 471**
Material	High Copper Alloy	Aluminium Alloy
Air Termination Rod Material	Copper	Aluminium
Conductor Material	Copper	Aluminium
Air Termination Rod Thread Size	M16 / M10 *)	M16 / M10 *)
Clamping range Fl	25 x 3-6 mm	25 x 3-6 mm
Tightening Torque	15 Nm	15 Nm
Standards	IEC / EN / BS EN 62561-1	IEC / EN / BS EN 62561-1
Classification	Class H	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA	I_{imp} 100 kA
PU	1 pc(s)	1 pc(s)

*) Use M10 Air-Termination Rod Adapter, Part Number: 118472

Base Adapter for M16 to M10 Air-Termination Rod

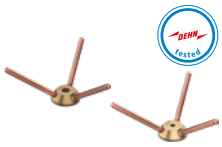
Use this Adapter when mounting M10 Air-Termination Rods in our M16 Air-Termination Rod Bases Range.



Type	ARBA M16/M10 STST
Part No.	**118 472**
Material	Stainless Steel
Air Termination Rod Thread Size	M10
Thread Size	M16
Tightening Torque	15 Nm
PU	15 pc(s)

Multi Points for Air-Termination Rods

Multipoints can be mounted onto our range of M10 and M16 Air-Termination Rods.



General technical data:	
Number of Spikes	3
Tightening Torque	10 Nm
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA

Type	ARMP 3W M16 HCA	ARMP 3W M10 HCA
Part No.	**118 464**	**118 466**
Material	High Copper Alloy	High Copper Alloy
Air Termination Rod / Spike Material	Copper	Copper
Air Termination Rod Thread Size	M16	M10
Accessories	M16 Lock Nut	M10 Lock Nut
PU	1 pc(s)	1 pc(s)

Type	ARMP 3W M16 HCA	ARMP 3W M10 ALA
Part No.	**118 465**	**118 467**
Material	Aluminium Alloy	Aluminium Alloy
Air Termination Rod/Spike Material	Aluminium	Aluminium
Air Termination Rod Thread Size	M16	M10
Accessories	M16 Lock Nut	M10 Lock Nut
PU	1 pc(s)	1 pc(s)

Note: Recommended use of LOCTITE 242 Blue on spike threads during Installation.

Wall Mounting Brackets for Air-Termination Rods

Wall Mounting Brackets are used to mount Air-Termination Rods to vertical surfaces, to be used in conjunction with Couplers.



Type	ARSB M16 HCA	ARSB M16 ALA
Part No.	**118 478**	**118 479**
Material	High Copper Alloy	Aluminium Alloy
Air Termination Rod Material	Copper	Aluminium
Air Termination Rod Thread Size	M16	M16
PU	2 pc(s)	2 pc(s)

Couplers for Wall Mounting Brackets and Air-Termination Rods

Couplers are used to connect the Bracket mounted Air-Termintation Rods to the Lightning Protection System.



General technical data:	
Air Termination Rod Thread Size	M16
Clamp Fixings	Hex Head Bolt M8 x 2 Nos
Material of Clamp Fixings	Stainless Steel
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA

Type	ARC M16 FL 25X3 HCA	ARC M16 SC 50.70 HCA
Part No.	**138 251**	**138 252**
Material	High Copper Alloy	High Copper Alloy
Air Termination Rod Material	Copper	Copper
Conductor Material	Copper	Copper
Clamping range Fl	25 x 3 mm	–
Clamping range (Stranded / Cable)	–	50 - 70 mm²
Tightening Torque	10 Nm	15 Nm
PU	10 pc(s)	10 pc(s)

Type	ARC M16 FL 25X3 ALA
Part No.	**138 253**
Material	Aluminium Alloy
Air Termination Rod Material	Aluminium
Conductor Material	Aluminium
Clamping range Fl	25 x 3 mm
Clamping range (Stranded / Cable)	–
Tightening Torque	10 Nm
PU	10 pc(s)

Strike Pads

Strike Pads are used as exposed conductive points inter-connected by the air termination system hidden/embedded in the building's facade, e.g. car parks, below the tiles, or in lateral air-termination network for protection of buildings over 60 meters high.



General technical data:	
Clamping range Fl	25 x 3 mm
Tightening Torque	15 Nm
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA

Type SP M10 FL ...	25X3 HCA	25X3 ALA	25X3 STST
Part No.	**118 411**	**118 412**	**118 413**
Material	High Copper Alloy	Aluminium Alloy	Stainless Steel
Conductor Material	Copper	Aluminium	Copper, Aluminium, HDG-Steel
PU	2 pc(s)	2 pc(s)	2 pc(s)

Max. Gust wind speeds in km/h for air-termination systems.

Tripod mounting - air-termination systems

Air-termination rods			Tripod, small, StSt (V2A) and Adapter set D40 Part No. **107 390 + 107 399**				Tripod, large, StSt (V2A) Part No. **107 391**				Four-legged stand, small, StSt (V2A) and Adapter set D40 Part No. **107 490 + 107 399**				Four-legged stand, large, StSt (V2A) Part No. **107 491**			
Number of concrete bases			3x	6x	9x	12x	3x	6x	9x	12x	4x	8x	12x	16x	4x	8x	12x	16x
Part No.	Material	Height [mm]																
105 170	Al	4000	132	185	185	185	170	185	185	185	178	185	185	185	185	185	185	185
105 175	Al	4500	120	168	186	186	149	186	186	186	155	186	186	186	186	186	186	186
105 171	Al	5000	103	137	170	186	129	179	186	186	129	184	186	186	176	186	186	186
105 176	Al	5500	96	124	149	183	121	163	187	187	121	170	187	187	159	187	187	187
105 172	Al	6000	–	110	132	149	108	137	174	187	105	140	149	149	137	187	187	187
105 177	Al	6500	–	104	124	137	103	132	159	170	99	132	137	137	132	170	170	170
105 173	Al	7000	–	93	110	121	93	117	137	137	93	117	121	121	117	137	137	137
105 178	Al	7500	–	–	105	112	–	112	129	129	–	112	112	112	112	129	129	129
105 174	Al	8000	–	–	97	104	–	104	112	112	–	103	104	104	104	112	112	112
105 179	Al	8500	–	–	93	100	–	100	108	108	–	100	100	100	99	108	108	108
105 190	NIRO	4000	132	185	191	191	169	191	191	191	176	191	191	191	191	191	191	191
105 195	NIRO	4500	120	165	192	192	149	192	192	192	155	192	192	192	192	192	192	192
105 191	NIRO	5000	103	132	167	193	132	177	193	193	129	182	193	193	176	193	193	193
105 196	NIRO	5500	98	124	149	179	121	163	193	193	122	168	193	193	163	193	193	193
105 192	NIRO	6000	–	111	129	149	111	139	173	194	107	140	163	163	140	193	194	194
105 197	NIRO	6500	–	104	121	137	105	132	159	180	101	132	147	147	132	180	180	180
105 193	NIRO	7000	–	93	110	124	96	117	137	140	93	117	124	124	122	140	140	140
105 198	NIRO	7500	–	93	105	117	93	112	133	133	–	112	120	120	117	132	132	132
105 194	NIRO	8000	–	–	97	105	–	105	117	117	–	104	105	105	105	117	117	117
105 199	NIRO	8500	–	–	93	103	–	99	112	112	–	100	103	103	104	112	112	112

Tripod mounting - air-termination systems

Air-termination rods			Tripod, small, **St/tZn**, Part No. **105 357**			
Number of concrete bases			3x	6x	9x	12x
Part No.	Material	Height [mm]				
105 170	Al	4000	103	137	171	185
105 175	Al	4500	93	124	149	178
105 171	Al	5000	–	104	124	140
105 190	StSt	4000	101	133	167	191
105 195	StSt	4500	93	122	144	173
105 191	StSt	5000	–	103	122	137

Self-supporting air-termination rods

Tripod, St/tZn			3x 8,5 kg	3x 17 kg
Number of concrete bases				
Part No.	Material	Height [mm]		
105 525	Al	2500	137	185
105 530	Al	3000	112	168
105 535	Al	3500	95	135

Tripod, St/tZn			3x	6x	9x	12x
Number of concrete bases						
Part No.	Material	Height [mm]				
105 531	Al	3000	135	194	196	196
105 536	Al	3500	110	149	190	197

Self-supporting air-termination rods

... arrow arrangement

Number of concrete bases			3x	6x	9x	3x	6x	9x
Part No.	Material	Height [mm]						
105 400	Al	4000	132	184	185	105	144	185
105 450	Al	4500	117	163	186	96	129	163
105 500	Al	5000	99	132	163	–	108	132
105 550	Al	5500	93	121	147	–	101	121

Self-supporting air-termination rods

Number of concrete bases			3x	6x	9x	12x	18x	21x	24x
Part No.	Material	Height [mm]							
105 600	Al	6000	110	137	170	187	–	–	–
105 650	Al	6500	105	132	159	187	–	–	–
105 700	Al	7000	96	120	137	163	–	–	–
105 750	Al	7500	93	112	135	149	–	–	–
105 800	Al	8000	–	105	124	137	–	–	–
105 850	Al	8500	–	101	117	132	–	–	–
105 900	Al	9000	–	101	117	121	–	–	–
105 910	Al	10000	–	–	–	121	140	–	–
105 911	Al	11000	–	–	–	112	135	–	–
105 922	Al	12000	–	–	–	–	129	149	170
105 923	Al	13000	–	–	–	–	124	137	149
105 924	Al	14000	–	–	–	–	117	132	145

Max. Gust wind speeds in km/h for air-termination systems.

Tripod mounting - air-termination systems

Air-termination rods			Supporting tube stand Part No. **105 244**
Part No.	Material	Height [mm]	
105 185	Al	4200	188
		4700	170
		5200	132
105 186	Al	5500	186
		6000	168
		6500	152
105 170	Al	4000	183
105 175	Al	4500	184
105 171	Al	5000	184
105 176	Al	5500	182
105 172	Al	6000	147
105 177	Al	6500	135
105 173	Al	7000	117
105 178	Al	7500	112
105 174	Al	8000	99
105 179	Al	8500	98
105 190	StSt	4000	191
105 195	StSt	4500	192
105 191	StSt	5000	192
105 196	StSt	5500	191
105 192	StSt	6000	149
105 197	StSt	6500	140
105 193	StSt	7000	121
105 198	StSt	7500	117
105 194	StSt	8000	105
105 199	StSt	8500	100

Telescopic, self-supporting air-termination rods

Part No.	Material FS/Stativ	Height [mm]	Number of concrete bases 3x	6x	9x	12x	4x	8x	12x	16x
105 710	Al/StSt	4200	112	149	191	191	–	–	–	–
		4700	108	144	174	174	–	–	–	–
		5200	104	137	149	149	–	–	–	–
105 711	Al/St/tZn	4200	110	147	183	–	–	–	–	–
		4700	105	137	174	–	–	–	–	–
		5200	99	132	149	–	–	–	–	–
105 712	Al/StSt	5500	–	–	–	–	105	144	183	189
		6000	–	–	–	–	105	137	172	172
		6500	–	–	–	–	101	135	149	149
105 713	Al/St/tZn	5500	116	149	187	189	–	–	–	–
		6000	112	144	172	172	–	–	–	–
		6500	110	137	149	149	–	–	–	–
105 714	Al/StSt	7000	–	–	–	–	–	108	129	150
		7500	–	–	–	–	–	105	124	144
		8000	–	–	–	–	–	105	126	140
105 715	Al/StSt	7000	110	140	170	170	–	–	–	–
		7500	105	137	159	159	–	–	–	–
		8000	105	137	155	155	–	–	–	–
105 716	Al/St/tZn	7000	93	112	135	149	–	–	–	–
		7500	–	112	132	152	–	–	–	–
		8000	–	110	129	147	–	–	–	–

Air-Termination Rods for Metal Roofs

Part No.	Material	Height [mm]		
123 021	Al	2000	184	–
123 425	Al	2500	185	–
123 430	Al	3000	149	–
123 435	Al/StSt	3500	114	–
123 032	Al	2000	–	137

Telescopic lightning protection mast with screw foundation

surface tube and tripod **St/tZn**

Part No.	Material	Height [mm]
103 121	Al/StSt	6000	229
103 122	Al	7000	185
103 123	Al/StSt	8000	177
103 124	Al	9000	159
103 125	Al/StSt	10000	116
103 126	Al	11000	112

Telescopic lightning protection mast for bucket or concrete foundations

Part No.	Material	Height [mm]	Bucket Foundation Part No. **103 030**	Concrete Foundation Part No. **103 040**
103 013	St/tZn	13380	143	194
103 016	St/tZn	16380	135	135
103 019	St/tZn	19380	107	131
			Part No. **103 031**	Part No. **103 041**
103 022	St/tZn	22380	129	129
103 025	St/tZn	24880	127	127

Wall assembly – air-termination systems

Part No.	Material	free length	Height [mm]	
105 170	Al	3500	4000	186
105 175	Al	4000	4500	187
105 171	Al	4000	5000	187
105 176	Al	4500	5500	188
105 172	Al	4500	6000	187
105 177	Al	5000	6500	184
105 173	Al	5500	7000	150
105 178	Al	5500	7500	155
105 174	Al	5500	8000	150
105 179	Al	5500	8500	155
105 190	StSt	3500	4000	193
105 195	StSt	4000	4500	194
105 191	StSt	4000	5000	193
105 196	StSt	4500	5500	194
105 192	StSt	4500	6000	194
105 197	StSt	5000	6500	193
105 193	StSt	5500	7000	149
105 198	StSt	5500	7500	164
105 194	StSt	5500	8000	155
105 199	StSt	5500	8500	164
105 185	Al	3700	4200	190
		4200	4700	174
		4200	5200	155
105 186	Al	4500	5500	189
		4700	6000	174
		5200	6500	149
105 188	Al	5300	7000	178
		5800	7500	170
		6300	8000	157

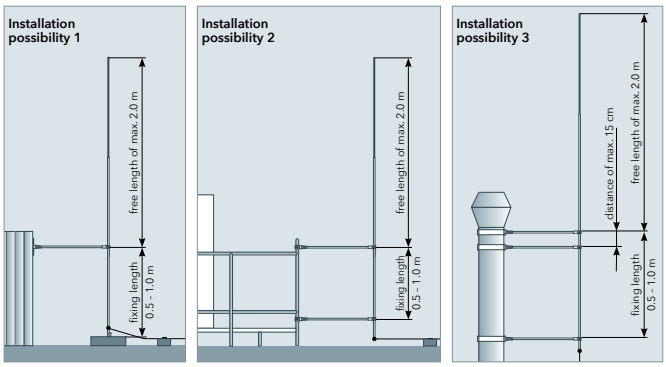
Air-termination tips in the concrete base

Part No.	Material	Height [mm]	1x 8,5 kg	1x 17 kg	2x 17 kg
Diameter 10 mm, chamfered					
101 000	Al	1000	135	–	–
101 009	StSt	1000	129	–	–
101 007	Cu	1000	128	–	–
Diameter 16 mm, chamfered					
104 150	Al	1500	–	119	174
104 200	Al	2000	–	–	126
104 250	Al	2500	–	–	104
483 100	St/tZn	1000	–	182	240
483 125	St/tZn	1250	–	139	205
483 150	St/tZn	1500	–	116	166
483 200	St/tZn	2000	–	–	122
With tapering, chamfered Ø16/10 mm					
103 210	Al	1500	–	149	194
103 220	Al	2000	–	107	149
103 230	Al	2500	–	–	117
103 240	Al	3000	–	–	98
With tapering, chamfered Ø16/10 mm, M16 thread					
103 211	Al	1500	–	149	194
103 221	Al	2000	–	107	149
103 231	Al	2500	–	–	117
Tubular air-termination rods w. tapering Ø16/10 mm					
103 410	Al	1500	–	149	196
103 420	Al	2000	–	110	155
103 430	Al	2500	–	–	120
103 440	Al	3000	–	–	100
103 417	Cu	1500	–	143	215
103 419	StSt	1500	–	144	214
103 429	StSt	2000	–	105	147
103 439	StSt	2500	–	–	114
103 449	StSt	3000	–	–	95



DEHNiso Spacers

Variable holder range for conductors and air-termination rods for maintaining the separation distance according to DIN EN 62305-3 (VDE 0185-305-3).
Spacer bar made of glass-fibre reinforced plastic (GRP), Ø16 mm, UV-stabilised, light grey colour.
The DEHNiso spacers meet the requirements of DIN/IEC TS 62561-8.



With rod holder and fixing plate

Fixed conductor routing.



General technical data:	
Conductor support Rd	16 mm
Material of conductor holder	StSt
Fixing	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm
Permanent temperature range	-50 °C ... +100 °C
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type DIDH ...	16 530 BP V2A GFK	16 690 BP V2A GFK
Part No.	106 115	106 120
Length (l1)	530 mm	690 mm
Insulating clearance (l2)	445 mm	605 mm
PU	1 pc(s)	1 pc(s)

Type DIDH ...	16 1030 BP V2A GFK
Part No.	106 123
Length (l1)	1030 mm
Insulating clearance (l2)	945 mm
PU	1 pc(s)

With conductor holder and fixing plate

Fixed conductor routing.



General technical data:	
Conductor support Rd	7-10 mm
Material of conductor holder	StSt
Fixing	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm
Permanent temperature range	-50 °C ... +100 °C
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type DIDH ...	7.10 530 BP V2A GFK	7.10 690 BP V2A GFK
Part No.	106 090	106 100
Length (l1)	530 mm	690 mm
Insulating clearance (l2)	445 mm	605 mm
PU	1 pc(s)	1 pc(s)

Type DIDH ...	7.10 1030 BP V2A GFK
Part No.	106 105
Length (l1)	1030 mm
Insulating clearance (l2)	945 mm
PU	1 pc(s)

With rod holder and pipe clamp



General technical data:	
Conductor support Rd	16 mm
Material of conductor holder	StSt
Clamping range of pipe	40-60 mm (1 1/4-2")
Permanent temperature range	-50 °C ... +100 °C
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type DIDH ...	16 530 RS40.60 V2A	16 690 RS40.60 V2A
Part No.	106 225	106 226
Length (l1)	530 mm	690 mm
Insulating clearance (l2)	445 mm	605 mm
PU	1 pc(s)	1 pc(s)

Type DIDH ...	16 1030 RS40.60 V2A
Part No.	106 228
Length (l1)	1030 mm
Insulating clearance (l2)	945 mm
PU	1 pc(s)

With rod holder and pipe clamp



General technical data:	
Conductor support Rd	16 mm
Material of conductor holder	StSt
Clamping range of pipe	50-300 mm
Permanent temperature range	-50 °C ... +100 °C
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type DIDH ...	16 530 SB50.300 V2A	16 690 SB50.300 V2A
Part No.	106 245	106 246
Length (l1)	530 mm	690 mm
Insulating clearance (l2)	445 mm	605 mm
PU	1 pc(s)	1 pc(s)

Type DIDH ...	16 1030 SB50.300 V2A
Part No.	106 248
Length (l1)	1030 mm
Insulating clearance (l2)	945 mm
PU	1 pc(s)

With DEHNgrip conductor holder

For installation, e.g. in a concrete base (Part No. 102 075). Loose conductor routing.



Type DIDH ...	8 675 KT V2A GFK
Part No.	106 160
Conductor support Rd	8 mm
Material of conductor holder	StSt
Length (l1)	675 mm
Insulating clearance (l2)	590 mm
Permanent temperature range	-50 °C ... +100 °C
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

With MMV clamp

For crossing points, when installed in a concrete base (Part No. 102 075), fixed conductor routing.



Type DIDH ...	6.10 675 MMV KT V2A GFK
Part No.	106 150
Conductor support Rd	6-10 mm
Material of conductor holder	StSt
Length (l1)	675 mm
Insulating clearance (l2)	590 mm
Permanent temperature range	-50 °C ... +100 °C
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Verisons with other spacer bar lengths are available upon request.

Accessories for DEHNiso Spacers

Spacer bar

Cut to length (variable length).

Type	DIST 16 3000 GFK
Part No.	106 125
Material	GRP
Permanent temperature range	-50 °C ... +100 °C
Colour of spacer bar	light grey (RAL 7035)
Diameter Ø	16 mm
Total length	3000 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

Fixing bush

Variable fixing of conductor and rod holders on a spacer bar (Ø16 mm), with M8 female thread.



Type	BB16 IGM8 ZG
Part No.	106 126
Material	ZDC
Female thread	M8
Diameter Ø	23 mm
PU	20 pc(s)

Fixing plate

Base plate for fixing the spacer or spacer bar (Ø16 mm), e.g. on structural parts.



Type	BP BB16 V2A ZG
Part No.	106 127
Material of fixing plate	StSt
Material of fixing bush	ZDC
Fixing	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm
Dimensions	170 x 40 x 3 mm
PU	20 pc(s)

Conductor holder with fixing bush

For fixing conductors on the GRP bar.



Type	LH 7.10 BB16 V2A ZG
Part No.	106 128
Material of conductor holder	StSt
Conductor support Rd	7-10 mm
Conductor routing	fixed
PU	20 pc(s)

Rod holder with fixing bush

For fixing air-termination rods on the GRP bar.



Type	SH 16 BB16 V2A ZG
Part No.	106 129
Material of conductor holder	StSt
Conductor support Rd	16 mm
Conductor routing	fixed
PU	20 pc(s)

Accessories for DEHNiso Spacers

Spacers with conductor holder

For fixing conductors at different supports, fixed conductor routing.



General technical data:	
Conductor support Rd	7-10 mm
Material of conductor holder	StSt
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type DIDH ...	7.10 515 V2A GFK16	7.10 675 V2A GFK16
Part No.	106 165	106 170
Length (l1)	515 mm	675 mm
Insulating clearance (l2)	435 mm	595 mm
PU	1 pc(s)	1 pc(s)

Type DIDH ...	7.10 1015 V2A GFK16
Part No.	106 175
Length (l1)	1015 mm
Insulating clearance (l2)	935 mm
PU	1 pc(s)

Spacers with rod holder

For fixing air-termination rods at different supports, fixed conductor routing.



General technical data:	
Conductor support Rd	16 mm
Material of conductor holder	StSt
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type DIDH ...	16 515 V2A GFK16	16 675 V2A GFK16
Part No.	106 178	106 180
Length (l1)	515 mm	675 mm
Insulating clearance (l2)	435 mm	595 mm
PU	1 pc(s)	1 pc(s)

Type DIDH ...	16 1015 V2A GFK16
Part No.	106 185
Length (l1)	1015 mm
Insulating clearance (l2)	935 mm
PU	1 pc(s)

Fixing bolt

With M10 thread, nut, toothed lock washer and screw for accommodating the spacer bar.



Type	BB16 GSM10 AL	BB16 GSM10 V2A
Part No.	106 301	106 309
Material of bolt	Al	StSt
Clamping range Rd	16 mm	16 mm
PU	20 pc(s)	20 pc(s)

Fixing bracket

With fixing bolt (Al) for spacer bar (Ø16 mm).



Type BW90 ...	BB16 B5.1 6.5 11 V2A
Part No.	106 311
Material	StSt
Angle	90°
Fixing	[4x] Ø5.1 / [2x] Ø6.5 / [2x] 11 x 20 mm
PU	20 pc(s)

Fixing bracket

For DEHNiso spacer, with hole Ø11 mm.



Type BW90 ...	B11 B5.1 6.5 11 V2A
Part No.	106 310
Material	StSt
Angle	90°
Fixing	[4x] Ø5.1 / [2x] Ø6.5 / [2x] 11 x 20 mm
Dimensions	110 x 60 x 30 mm
PU	20 pc(s)

Fixing bracket

For DEHNiso spacer, with hole Ø11 mm.



Type BW45 ...	B11 B5.1 6.5 11 V2A
Part No.	106 315
Material	StSt
Angle	45°
Fixing	[4x] Ø5.1 / [2x] Ø6.5 / [2x] 11 x 20 mm
Dimensions	104 x 54 x 30 mm
PU	20 pc(s)

Corner bracket

With fixing bolt (Al) for spacer bar (Ø16 mm).



Type EBW90 ...	BB16 B5.1 6.5 11 V2A
Part No.	106 316
Material	StSt
Angle	90°
Fixing	[8x] Ø5.1 / [4x] Ø6.5 / [4x] 11x20 mm
Dimensions	132 x 155 x 30 mm
PU	1 pc(s)

Pipe clamp

With fixing bush for spacer bars (Ø16 mm) for pipes up to Ø60 mm.



Type	RS D40.60 BB16 V2A ZG
Part No.	106 352
Material of clamp	StSt
Clamping range for pipe Ø	40-60 mm (1 1/4-2")
Material of bush	ZDC
PU	10 pc(s)

Pipe clamp

With fixing bush for spacer bars (Ø16 mm) for pipes up to Ø90 mm.



Type	RS D70.90 BB16 V2A ZG
Part No.	106 353
Material of clamp	StSt
Clamping range for pipe Ø	70-90 mm (2 1/4-3")
Material of bush	ZDC
PU	1 pc(s)

Railing clamp

For square hollow profiles with bush for spacer bars (Ø16 mm).



Type	BS 4K 20.50 BB16 ZG V2A
Part No.	106 312
Material	ZDC / StSt
Clamping range for square profile	20 x 20 to 50 x 50 mm
PU	5 pc(s)

Clip for fixing spacers to pipes

Fixing by means of tensioning straps up to 30 mm (e.g. tensioning strap 25 x 0.3 mm with grip head Part No. 106 323), with fixing bolt for spacer bar (Ø16 mm).



Type	BB SPB30 BB16 V2A AL
Part No.	106 321
Material of clip	StSt
Material of bolt	Al
Width of slot (l x w)	32 x 6 mm
Fixing	[2x] Ø11 mm
PU	10 pc(s)

Attachment with fixing bush

For fixing spacers (Ø16 mm) to pipes, e.g. using a pipe clamp (Part No. 106 323).



Type	AS SPB25 BB16 V2A
Part No.	106 322
Material	StSt
Width of slot (l x w)	26 x 6 mm
Clamping range Rd	16 mm
PU	10 pc(s)

Pipe clamp

For fixing (clamping) conductor holders (e.g. Part No. 275 319).



Type	BRS SPB25 50.300 V2A
Part No.	106 323
Material of head / strap	StSt
Clamping range Ø	50-300 mm
Dimensions of strap	1100 x 25 x 0.3 mm
Material of screw	StSt
PU	10 pc(s)

Clip

Fixed on pipes using a tensioning strap (Part No. 540 901, dimensions 25 x 0.3 mm) in combination with a with grip head (Part No. 106 324), with square hole, suitable for M8 screws.



Type	BUE SPB25 V2A
Part No.	106 320
Material	StSt
Clamping range of tube Ø	approx. 50-300 mm
PU	20 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901) in case of larger pipe diameters.



Type	SPK 25X0.3 V2A
Part No.	106 324
Material of head	StSt
For strap (w x d)	25 x 0.3 mm
Screw	M8 x 20 mm
Material of screw	StSt
PU	20 pc(s)

Tensioning strap



Type	SPB 25X0.3 L100M V2A
Part No.	540 901
Material	StSt
Strap dimensions (w x d)	25 x 0.3 mm
Length	100 m
PU	1 pc(s)

Adapter for angled support

For air-termination rods (Ø16 mm) with 2 fixing bolts for spacer bars (Ø16 mm).



Type	AD WAS 16 BB16 V2A
Part No.	106 325
Material	StSt
Clamping range Rd	16 / 16 mm
PU	10 pc(s)

Adapter for angled support

For supporting tubes DEHNiso Combi (Ø50 mm) with 2 fixing bolts for spacer bars (Ø16 mm).



Type	AD WAS 50 BB16 V2A
Part No.	106 326
Material	StSt
Clamping range Rd	50 / 16 mm
PU	1 pc(s)

Accessories for DEHNiso Spacers

Fixing adapters
For seam and connection clamps.



General technical data:	
Material of bar	StSt
Bar Ø	8 mm
Material of bush	ZDC

Type	BA RD8 BB16 V2A ZG	BA90 RD8 BB16 V2A ZG
Part No.	106 340	106 341
Angle	0°	90°
PU	20 pc(s)	20 pc(s)

Type	BA130 RD8 BB16 V2A ZG
Part No.	106 342
Angle	130°
PU	20 pc(s)

MV clamp
Especially for fixing air-termination rods to spacer bars without fixing bush.



Type MVK ...	16 16 FRM10X50 V2A
Part No.	393 069
Material	StSt
Conductor support Rd	16 / 16 mm
Conductor routing	fixed
PU	50 pc(s)

Connection clamp with fixing bolt
For fixing spacers (Ø16 mm), e.g. to steel girders.



Type	AK 3.18 BB16 V2A AL
Part No.	106 319
Clamping range	3-18 mm
Clamping range Rd	16 mm
Material of fixing bolt	Al
Connection with	fixing bolt
PU	1 pc(s)

Air-Termination Rods GRP/Al

For erecting isolated air-termination systems, e.g. on flat roofs, installed in a concrete base with fixing wedge.

The material factor k_m = 0.7 is used to determine the separation distance (length of spacer bar).
Diameter 16 mm, UV-stabilised, light grey colour, permanent temperature range -50 to +100 °C.

The GRP/Al air-termination rods meet the requirements of DIN/IEC TS 62561-8.



Crimped

Type	FS 16 10 1660 GFK AL	FS 16 10 2000 GFK AL
Part No.	106 207	106 210
Total length (l1)	1660 mm	2000 mm
Insulating clearance (l2)	635 mm	975 mm
Material of air-termination tip / bush	Al	Al
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)	10 pc(s)

Variable with M10 thread
e.g. for air-termination tip (Part No. 101 001), air-termination tip with MV clamp (Part No. 105 071) (for crossing points) or MV clamp for spanning cables (Part No. 105 079).



Type	DIST 16 M10 675 GFK	DIST 16 M10 1015 GFK
Part No.	106 217	106 220
Total length (l1)	675 mm	1015 mm
Insulating clearance (l2)	635 mm	975 mm
Material of air-termination tip / bush	Al	Al
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)	10 pc(s)

Accessories for Air-Termination Rods GRP/Al

Air-termination tip with lock nut
Screw-in design



Type	FS 10 1000 M10 V2A
Part No.	101 001
Material	StSt
Diameter Ø	10 mm
Length	1000 mm
Thread	M10
Standard	EN 62561-2
PU	1 pc(s)

Air-termination tip with MV clamp

For screwing into the head of the supporting tube and fixing air-termination conductors (wires or cables).
With M10 thread.



Type FSP ...	10 1000 MVK 8.10 V2A
Part No.	**105 071**
Material of air-termination tip	StSt
Air-termination tip (l x Ø)	1000 x 10 mm
Clamping range Rd	8-10 mm
Thread	M10
Standard	EN 62561-(1+2)
PU	1 pc(s)

MV clamp for spanning cables

For screwing into the head of the supporting tube, with M10 screw, for spanning cables



Type	MVK 8.10 M10 V2A
Part No.	**105 079**
Material	StSt
Clamping range Rd	8-10 mm
Standard	EN 62561-1
PU	1 pc(s)

DEHNiso Roof Conductor Holders

Variable range of holders for keeping the separation distance when installing conductors on flat roofs.
Spacer bar made of glass-fibre reinforced plastic (GRP) Ø10 mm, UV-stabilised, light grey colour
Spacer with concrete block and base plate, for conductors Rd 8 mm.
The DEHNiso roof conductor holders are tested in line with DIN/IEC TS 62561-8.

Spacer with concrete block and base plate, loose conductor routing.

Note: Please contact us to find out whether the material of the roof conductor holder or base plate is compatible with the roof elements.



Type DIDLH 8 ...	H295 D300 BS	H435 D300 BS
Part No.	**253 115**	**253 125**
Material of roof conductor holder	**plastic / GRP**	**plastic / GRP**
Length (l1)	295 mm	435 mm
Insulating clearance	220 mm	360 mm
Total weight	approx. 4.8 kg	approx. 4.8 kg
Permanent temperature range	-30 °C ... +80 °C	-30 °C ... +80 °C
Standard	Based on DIN IEC/TS 62561-8 (VDE V 0185-561-8)	Based on DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	24 pc(s)	24 pc(s)

Accessories for DEHNiso Roof Conductor Holders

Spacer bar with conductor holder

For insertion into the base plate (lock bush), stabilised with concrete block. For raised conductor routing, loose conductor routing.



Type DILH ...	8 DS10 L280 K GR GFK	8 DS10 L420 K GR GFK
Part No.	**253 315**	**253 325**
Material of conductor holder	**plastic**	**plastic**
Length (l1)	280 mm	420 mm
Insulating clearance	220 mm	360 mm
Permanent temperature range	-30 °C ... +80 °C	-30 °C ... +80 °C
Standard	Based on DIN IEC/TS 62561-8 (VDE V 0185-561-8)	Based on DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	24 pc(s)	24 pc(s)

Conductor holder with lock bush

For fixing the conductor to the GRP bar.



Type	DILH 8 SB10 K GR
Part No.	**253 302**
Material	**plastic**
Colour	grey
Conductor support Rd	8 mm
Permanent temperature range	-30 °C ... +80 °C
PU	24 pc(s)

Spacer bar for DEHNiso roof conductor holders



Cut to length (variable length).

Type	DIST 10 3000 GFK
Part No.	**253 310**
Material	**GRP**
Colour	light grey (RAL 7035)
Diameter Ø	10 mm
Length	3000 mm
Permanent temperature range	-30 °C ... +80 °C
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

Concrete block

For stabilising the base plate.



Type BES 4.6KG ...	SB10 180X180X70
Part No.	**253 301**
Material	**concrete (C35/45)**
Weight	4.6 kg
Dimensions	180 x 180 x 70 mm
PU	24 pc(s)

Base plate

Base plate to hold the spacer bar (Part Nos. 253 315, 253 325) and conductor holder (Part No. 253 289) and to protect the roof sheeting under the concrete block (Part No. 253 301).



Type	GP B10 H60 D300 KS GR
Part No.	**253 300**
Diameter Ø	300 mm
Diameter Ø of lock bush	10 mm
Height	60 mm
Material	**plastic**
Colour	grey
PU	24 pc(s)

DEHNiso Combi Sets

Components for isolated air-termination systems.
For protecting large roof-mounted structures, e.g. air-conditioning systems, heat exchangers, etc.
For keeping the separation distance to electrically conductive parts according to IEC/EN 62305-3.
The separation distance (insulating clearance) is determined with material factor k_m = 0.7.

One-piece, total height 4200 mm



Consisting of:

1x air-termination tip StSt, L = 1000 mm
(Part No. 105 071)

1x supporting tube GRP/Al, L = 3200 mm
(Part No. 105 300)

2x wall mounting bracket StSt
(Part No. 105 340)

1x spacer GRP/Al, L = 1030 mm
(Part No. 106 331)

Type DICS WB ...	D50.10 4.2M GFK AL V2A
Part No.	**105 440**
Total length	4200 mm
Number of fixing brackets	2
Length of supporting tube	3200 mm
Max. free length with air-termination tip	3500 mm
Material of supporting tube	**GRP / Al**
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

One-piece, total height 5700 mm



Consisting of:

1x air-termination tip StSt, L = 1000 mm
(Part No. 105 071)

1x supporting tube GRP/Al, L = 4700 mm
(Part No. 105 301)

3x wall mounting bracket StSt
(Part No. 105 340)

2x spacer GRP/Al, L = 1030 mm
(Part No. 106 331)

Type DICS WB ...	D50 10 5700 GFK AL V2A
Part No.	**105 455**
Total length	5700 mm
Number of fixing brackets	3
Length of supporting tube	4700 mm
Max. free length with air-termination tip	4000 mm
Material of supporting tube	**GRP / Al**
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Two-piece, total height 7200 mm



(transport length 3200 mm)

Consisting of:

1x air-termination tip StSt, L = 1000 mm
(Part No. 105 071)

1x supporting tube GRP/Al, L = 6200 mm
(Part No. 105 302)

3x wall mounting bracket StSt
(Part No. 105 340)

3x spacer GRP/Al, L = 1030 mm
(Part No. 106 331)

Type DICS WB ...	D50 10 7200 GFK AL V2A
Part No.	**105 470**
Total length	7200 mm
Number of fixing brackets	3
Length of supporting tube	6200 mm
Max. free length with air-termination tip	4000 mm
Material of supporting tube	**GRP / Al**
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Accessories for DEHNiso Combi Sets

Supporting tubes GRP / Al

For isolated air-termination systems, with female thread, for air-termination tips or MV clamps for spanning cables.
One-piece.

Type SR D50 M10 ...	3200 GFK AL	4700 GFK AL
Part No.	**105 300**	**105 301**
Material of supporting tube	**GRP / Al**	**GRP / Al**
Length of supporting tube (l1)	3200 mm	4700 mm
Outside diamter Ø	50 mm	50 mm
Length of insulating clearance	1535 mm	1535 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Supporting tube GRP / Al

For isolated air-termination systems, with female thread, for air-termination tips or MV clamps for spanning cables.
Also suitable for fixing the HVI Conductor.
Two-piece.

Type SR D50 M10 ...	6200 TB GFK AL
Part No.	**105 302**
Material of supporting tube	**GRP / Al**
Length of supporting tube	6200 mm
Outside diameter Ø	50 mm
Length of insulating clearance	1535 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Supporting tube GRP / Al

One-piece, combined with air-termination rod Ø16 / 10 mm, length 2500 mm, Al.

Type	SR D50 3200 FS16.10 2500 GFK AL
Part No.	**105 306**
Material of supporting tube	**GRP / Al**
Total length	5700 mm
Length of supporting tube	3200 mm
Outside diamter Ø	50 mm
Length of insulating clearance	1535 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Air-termination tip with MV clamp

For screwing into the head of the supporting tube and fixing air-termination conductors (wires or cables).
With M10 thread.



Type	FSP 10 1000 MVK 8.10 V2A
Part No.	**105 071**
Material of air-termination tip	StSt
Air-termination tip (l x Ø)	1000 x 10 mm
Clamping range Rd	8-10 mm
Thread	M10
Standard	EN 62561-(1+2)
PU	1 pc(s)

MV clamp for spanning cables

For screwing into the head of the supporting tube, with M10 screw, for spanning cables.



Type	MVK 8.10 M10 V2A
Part No.	**105 079**
Material	StSt
Clamping range Rd	8-10 mm
Standard	EN 62561-1
PU	1 pc(s)

Wall mounting bracket for horizontal mounting, flat

For fixing supporting tubes onto the structure to be protected or the wall.



Type	WB D50 WA V2A
Part No.	**105 340**
Material	StSt
Clamping range for supporting tube	50 mm
Distance from wall / corner	80 mm
Dimensions of fixing	320 mm
Fixing	[8x] Ø5.1 / [4x] 11 x 20 mm
PU	1 pc(s)

Wall mounting bracket for horizontal mounting, corner

For fixing supporting tubes onto the structure to be protected or the wall.



Type	EB D50 WA V2A
Part No.	**105 341**
Material	StSt
Clamping range for supporting tube	50 mm
Distance from wall / corner	80 mm
Dimensions of fixing	152 mm
Fixing	[8x] Ø5.1 / [4x] 11 x 20 mm
PU	1 pc(s)

Wall mounting bracket for vertical mounting

For attaching supporting tubes or air-termination rods D40 / D50 to roof-mounted structures or walls.



Type WB ...	D40.50 SE WA46 V2A	D40.50 SE WA110 V2A
Part No.	**105 342**	**105 348**
Material of bracket	StSt	StSt
Fixing	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm
Clamping range for supporting tube	40-50 mm	40-50 mm
Distance from wall	46 mm	110 mm
PU	1 pc(s)	1 pc(s)

Wall mounting bracket, adjustable from 150-200 mm

For attaching supporting tubes or air-termination rods D40 / D50, with double clamp for connecting 2x Rd 8-10 mm.



Type WB ...	D40.50 V150.200 V2A
Part No.	**105 344**
Material of bracket	StSt
Clamping range for supporting tube	40-50 mm
Distance from wall	150-200 mm
Dimensions of plate	120 x 120 x 4 mm
Fixing	[4x] 12 x 26 mm
Standard	EN 62561-1
PU	1 pc(s)

Wall mounting bracket, adjustable from 230-1300 mm

For fixing supporting tubes or air-termination rods D40 / D50.



General technical data:	
Material of bracket	St/tZn / StSt
Clamping range for supporting tube	40-50 mm
Dimensions of plate	120 x 120 x 4 mm
Fixing	[4x] 12 x 26 mm

Type	WB D40.50 V230.400 STTZN V2A	WB D40.50 V400.700 STTZN V2A
Part No.	**105 347**	**105 343**
Distance from wall	230-400 mm	400-700 mm
PU	1 pc(s)	1 pc(s)

Type	WB D40.50 V700.1300 STTZN V2A
Part No.	**105 349**
Distance from wall	700-1300 mm
PU	1 pc(s)

Accessories for DEHNiso Combi Sets

Fixing clamp with tensioning strap
For fixing supporting tubes to structural elements, e.g. antenna masts.



Type BS ...	D50 SB50.300 V2A
Part No.	105 360
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
PU	1 pc(s)

Fixing clamp with tensioning strap
With additional spacer for adjusting the sector antenna supports to the mast.



Type BS ...	D50 DS30 SB50.300 V2A
Part No.	105 361
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
Length of spacer	30 mm
PU	1 pc(s)

Fixing clamp with tensioning strap
With additional long spacer for adjusting sector antenna supports to the mast.



Type BS ...	D50 DS90 SB50.300 V2A
Part No.	105 362
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
Length of spacer	95 mm
PU	1 pc(s)

Railing clamp
For pipes.



Type BS ...	D40.50 D48.60 V2A
Part No.	105 354
Material	StSt
Clamping range for pipe Ø	48-60 mm (1 1/2-2")
Clamping range for supporting tube	40-50 mm
PU	5 pc(s)

Railing clamp
With spacer for adjusting, e.g. antenna supports.



Type BSC ...	D40 DS95 D45.65 V2A
Part No.	105 162
Material	StSt
Clamping range for pipe Ø	45-65 mm (1 1/2-2")
Clamping range for supporting tube	40-50 mm
Length of spacer	95 mm
Standard	EN 62561-1
PU	1 pc(s)

Railing clamp
For pipes.



Type	BS D40.50 D70.90 V2A
Part No.	105 355
Material	StSt
Clamping range for pipe Ø	70-90 mm (2 1/4-3")
Clamping range for supporting tube	40-50 mm
PU	1 pc(s)

Railing clamp
For square hollow profiles.



Type	BS D40.50 4K20.50 V2A	BS D40.50 4K60.120 V2A
Part No.	105 356	105 376
Material	StSt	StSt
Clamping range for square profile	20 x 20 to 50 x 50 mm	60 x 120 mm
Clamping range for supporting tube	40-50 mm	40-50 mm
PU	5 pc(s)	1 pc(s)

Pipe clamp
With fixing bush for spacer bars (Ø16 mm) for pipes up to Ø60 mm.



Type	RS D40.60 BB16 V2A ZG
Part No.	106 352
Material of clamp	StSt
Clamping range for pipe Ø	40-60 mm (1 1/4-2")
Material of bush	ZDC
PU	10 pc(s)

Pipe clamp
With fixing bush for spacer bars (Ø16 mm) for pipes up to Ø90 mm.



Type	RS D70.90 BB16 V2A ZG
Part No.	106 353
Material of clamp	StSt
Clamping range for pipe Ø	70-90 mm (2 1/4-3")
Material of bush	ZDC
PU	1 pc(s)

Railing clamp

For square hollow profiles with bush for spacer bars (Ø16 mm).



Type	BS 4K 20.50 BB16 ZG V2A
Part No.	**106 312**
Material	**ZDC / StSt**
Clamping range for square profile	20 x 20 to 50 x 50 mm
PU	5 pc(s)

Spacers for supporting tubes

For fixing conductors to the supporting tube and keeping the separation distance according to IEC/EN 62305-3.



Type	DIDH 7.10 690 D50 V2A	DIDH 7.10 1030 D50 V2A
Part No.	**106 328**	**106 331**
Material of spacer	**GRP**	**GRP**
Material of fixing element	**StSt**	**StSt**
Total length (l1)	690 mm	1030 mm
Insulating clearance (l2)	605 mm	945 mm
Permanent temperature range	-50 °C ... +100 °C	-50 °C ... +100 °C
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Tripod for DEHNiso Combi

For the free erection of supporting tubes Ø50 mm or air-termination rods Ø40 mm, length 3,200 mm (e.g. part no. 105 300 or 105 440) without additional fixing to structural elements.
Adjustable to the roof inclination up to max. 10°.
Connection with double clamp for 2x Rd 8–10 mm [lightning-current-carrying capability 100 kA (10/350 µs)].
The stackable concrete base (part no. 102 010) and the plastic base plate (part no. 102 050) have to be ordered separately.



Hinged for transport.

Type DBS KB ...	D40.50 RA560 STTZN
Part No.	**105 200**
Material of tripod	**St/tZn**
Support	40 / 50 mm
Number of concrete bases	6 / 9 blocks, 17 kg each
Radius	560 mm
Space required for tripod	1200 x 1330 mm
Standard	EN 62561-1
PU	1 pc(s)

Tripod D50

For the free erection of supporting tubes Ø50 mm with a length of 4.7–6.2 m (e.g. part no. 105 455 or 105 470) without additional fixing to structural elements.
Adjustable to the roof inclination up to max. 10°.
Connection with double clamp for 2x Rd 8–10 mm [lightning-current-carrying capability 100 kA (10/350 µs)].
The stackable concrete base (part no. 102 010) and the plastic base plate (part no. 102 050) have to be ordered separately.

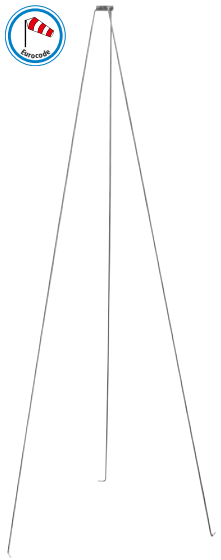


Hinged for transport.

Type DBS KB ...	D40.50 RA1435 STTZN
Part No.	**105 201**
Material of tripod	**St/tZn**
Support	40 / 50 mm
Number of concrete bases	3-12 blocks, 17 kg each
Radius	1435 mm
Required space for tripod	2530 x 2850 mm
Standard	EN 62561-1
PU	1 pc(s)

Bracing

Brace, 3x with clamp for pipe, Ø50 mm for fixing to the tripod (part no. 105 201). Brace suitable for supporting tubes with a length of 4700 mm (e.g. part nos 105 332, 105 316, 105 333, 105 317, 105 322, 105 323, 105 565, 105 575).



Type	ABST 3F D50 2900 V2A
Part No.	**105 601**
Material	**StSt**
Brace length	2910 mm
Ø clamp	50 mm
PU	1 pc(s)

Max. Gust wind speeds in km/h for air-termination systems.

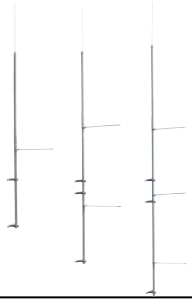
DEHNiso Spacers

Part No.	holder distance	DEHNalu wire	1x 8.5 kg	1x 17 kg	2x 17 kg
106 160	1000 mm	Ø8 mm	104	176	–
106 150	1000 mm	Ø8 mm	104	176	–
106 165	1000 mm	Ø8 mm	125	219	–
106 170	1000 mm	Ø8 mm	104	176	–
106 175	1000 mm	Ø8 mm	–	125	–
106 207	1000 mm	Ø8 mm	–	114	129
106 210	1000 mm	Ø8 mm	–	93	105



DEHNiso Combi Sets

Part No.	length	free length with air-termination tip	
105 440	4200 mm	3500 mm	234
105 455	5700 mm	4000 mm	212
105 470	7200 mm	4000 mm	212



DEHNiso Roof Conductor Holders

Part No.	holder distance	DEHNalu wire	concrete base 4.6 kg
253 115	1000 mm	Ø8 mm	163
253 125	1000 mm	Ø8 mm	125



HVI
Lightning Protection

Discover our HVI lightning protection:
https://de.hn/7RAAQ

HVI light plus Conductor — Page 112
Overview of gust wind speeds — Page 125

HVI Conductor — Page 126
Overview of gust wind speeds — Page 142

HVI power Conductor — Page 144
Overview of gust wind speeds — Page 158

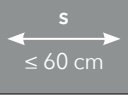
HVI Lightning Protection

HVI light plus Conductor

NEW

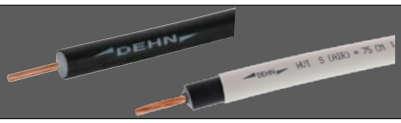


Separation distance
s ≤ 60 cm „air"
s ≤ 120 cm „solid material"

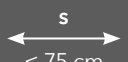


Outer diameter / colour	21 mm / grey
Equivalent separation distance (air)	≤ 60 cm
Equivalent separation distance (solid material)	≤ 120 cm
Operating temperature	-30 °C ... +70 °C
Tested with I_{imp} (10/350 µs) based on EN 62561-1	H1 / 150 kA
For use in class of LPS in case of a single down conductor without current distribution (k_c = 1)	II, III, IV
Installation in Ex zone 1 and 21	allowed
Maximum permissible conductor length LPL II (at k_c = 1)	10 m
Maximum permissible conductor length LPL III / IV (at k_c = 1)	15 m

HVI Conductor

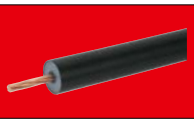


Separation distance
s ≤ 75 cm „air"
s ≤ 150 cm „solid material"



Outer diameter / colour	20 mm / black or 23 mm / grey
Equivalent separation distance (air)	≤ 75 cm
Equivalent separation distance (solid material)	≤ 150 cm
Operating temperature	-30 °C ... +70 °C
Tested with I_{imp} (10/350 µs) based on EN 62561-11	150 kA
For use in class of LPS in case of a single down conductor without current distribution (k_c = 1)	II, III, IV
Installation in Ex zone 1 and 21	allowed
Maximum permissible conductor length LPL II (at k_c = 1)	12.5 m
Maximum permissible conductor length LPL III / IV (at k_c = 1)	18.75 m

HVI power Conductor



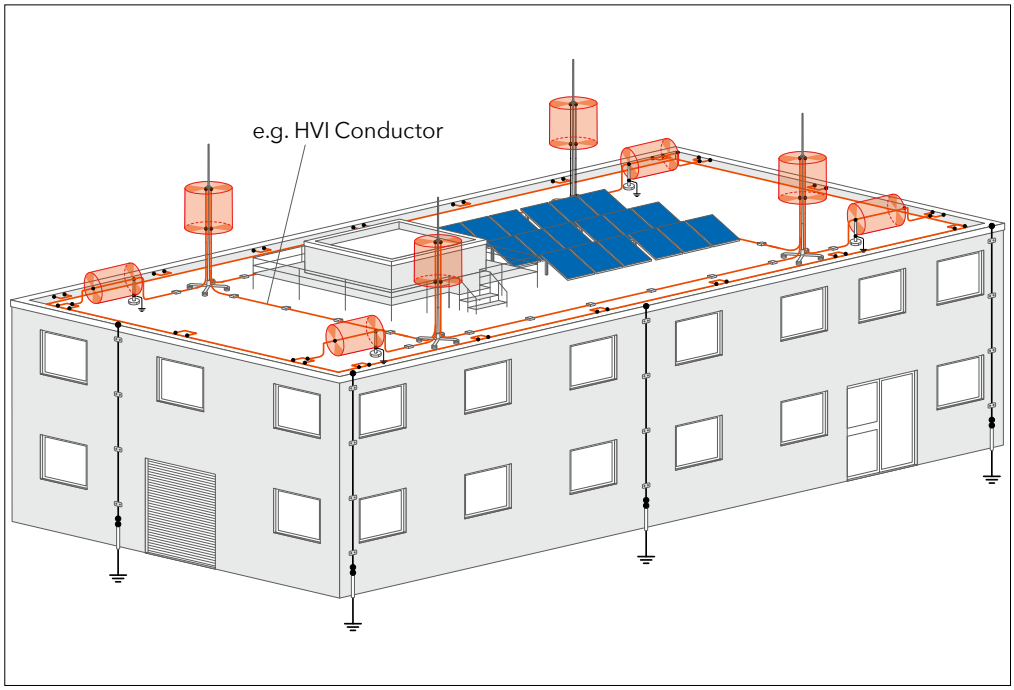
Separation distance
s ≤ 90 cm „air"
s ≤ 180 cm „solid material"



Outer diameter / colour	27 mm / black
Equivalent separation distance (air)	≤ 90 cm
Equivalent separation distance (solid material)	≤ 180 cm
Operating temperature	-30 °C ... +70 °C
Tested with I_{imp} (10/350 µs) based on EN 62561-1	200 kA
For use in class of LPS in case of a single down conductor without current distribution (k_c = 1)	I, II, III, IV
Installation in Ex zone 1 and 21	allowed
Maximum permissible conductor length LPL I (at k_c = 1)	11.25 m
Maximum permissible conductor length LPL II (at k_c = 1)	15.0 m
Maximum permissible conductor length LPL III / IV (at k_c = 1)	22.5 m

HVI Lightning Protection

Partly isolated lightning protection system for an administration building



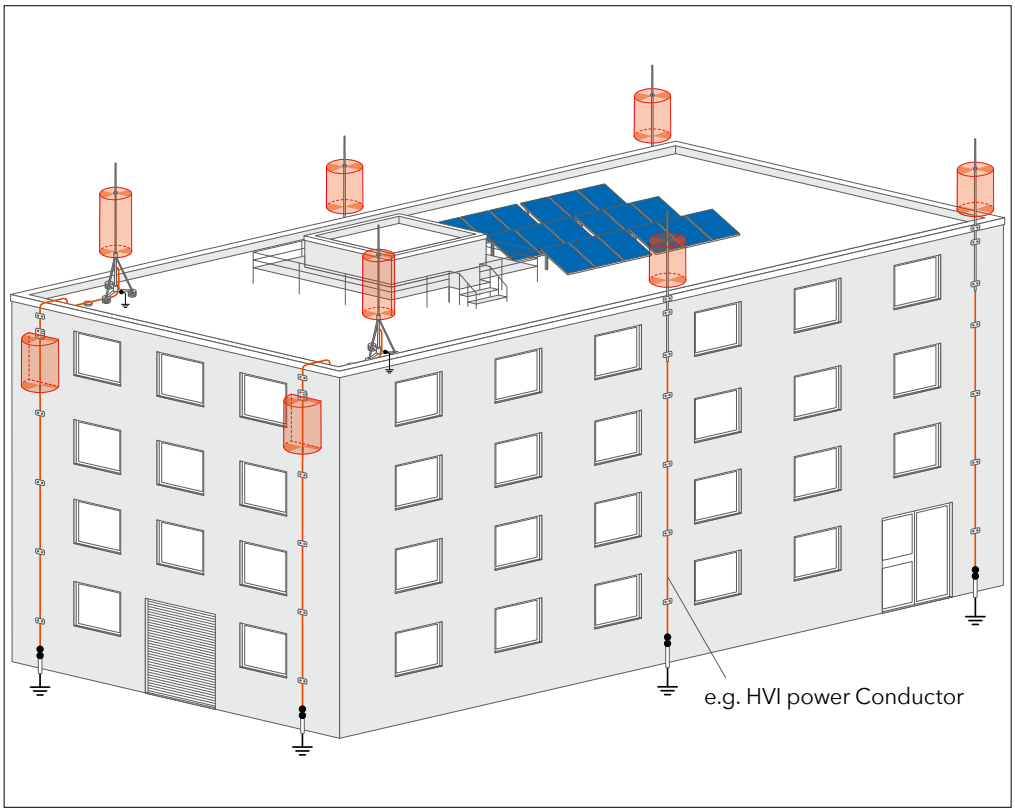
Product







Partly isolated lightning protection system for an industrial building



HVI light plus Conductor



Technical data	HVI light plus Conductor (on a reel)	HVI light plus Conductor (cut to length)
Picture		
Structure	solid	solid
Cross section of the inner conductor (Cu)	19 mm²	19 mm²
Colour of conductor	signal grey (RAL 7004)	signal grey (RAL 7004)
Outer diameter	21 mm	21 mm
Equivalent separation distance (air)	≤ 60 cm	≤ 60 cm
Equivalent separation distance (solid material)	≤ 120 cm	≤ 120 cm
Minimum bending radius	210 mm	210 mm
Operating temperature	-30 °C ... +70 °C	-30 °C ... +70 °C
Installation temperature	-5 °C ... +40 °C	-5 °C ... +40 °C
Tensile strength	800 N	800 N
UV / weather-resistant	yes	yes
Tested with I_{imp} (10/350 µs) based on EN 62561-1	H1 / 150 kA	H1 / 150 kA
For use in class of LPS in case of a single down conductor without current distribution (k_c = 1)	II, III, IV	II, III, IV
Installation in Ex zone 1 and 21	allowed	allowed
Max. order length	100 m / 500 m	6 m ... 70 m
Cable weight / 100 m	45 kg	–

Supporting tube with HVI light plus Conductor

Discreet supporting tube with pre-assembled, internal HVI light plus Conductor with low wind exposed surface.
Wide choice of lengths, from 6 m to 70 m.

HVI light plus Conductor inside the supporting tube with air-termination tip

Supporting tube with internal sealing end / EB spring element and air-termination tip, StSt, Ø10 mm, length 500 / 1,000 mm.



General technical data:	
Material of air-termination tip	StSt
Material of supporting tube	GRP / Al
Outside diameter Ø	40 mm
Diameter Ø conductor	21 mm
Material of conductor	Cu
Minimum order length	6 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type HVI LI PL L6M ...	SR1600 FSP500 GFK AL V2A	SR1600 FSP1000 GFK AL V2A
Part No.	819 672	819 673
Length of air-termination tip	500 mm	1000 mm
Length of supporting tube	1600 mm	1600 mm
Transport length	1600 mm	1600 mm
Colour of conductor	grey	grey
PU	1 pc(s)	1 pc(s)

Type HVI LI PL L6M ...	SR2400 FSP500 GFK AL V2A	SR2400 FSP1000 GFK AL V2A
Part No.	819 674	819 675
Length of air-termination tip	500 mm	1000 mm
Length of supporting tube	2400 mm	2400 mm
Transport length	2400 mm	2400 mm
Colour of conductor	grey	grey
PU	1 pc(s)	1 pc(s)

Specifications regarding max. gust wind speeds of the air-termination systems can be found in the wind load matrix.

Air-termination mast for HVI light plus Conductor on flat roofs

Complete kit, consisting of air-termination tip/rod, supporting tube, fixing kit and stand for installation on flat roofs (installation outside the tube).

Specifications regarding max. gust wind speeds of the air-termination systems can be found in the wind load matrix.

Air-termination mast with small tripod and air-termination tip



Type FM D40 ...	L2200 GFK AL V2A DBS R320 STTZN	L2700 GFK AL V2A DBS R320 STTZN
Part No.	819 685	819 690
Height	2200 mm	2700 mm
Material of tripod	St/tZn	HDG steel (St/tZn)
Radius of tripod	320 mm	320 mm
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	1600 mm	1600 mm
Length of air-termination tip	500 mm	1000 mm
Material of air-termination tip	StSt	StSt
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Air-termination mast with large tripod and air-termination tip



Type FM D40 L2700 GFK AL V2A DBS ...	R560 STTZN
Part No.	819 682
Height	2700 mm
Material of tripod	St/tZn
Radius of tripod	560 mm
Material of supporting tube	GRP / Al
Length of supporting tube	1600 mm
Length of air-termination tip	1000 mm
Material of air-termination tip	StSt
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Air-termination mast with large tripod and air-termination rod



Type FM D40 ...	L3700 GFK AL DBS R560 STTZN	L4700 GFK AL DBS R560 STTZN
Part No.	819 687	819 680
Height	3700 mm	4700 mm
Material of tripod	HDG steel (St/tZn)	HDG steel (St/tZn)
Radius of tripod	560 mm	560 mm
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	1600 mm	1600 mm
Length of air-termination rod	2000 mm	3000 mm
Material of air-termination rod	AlMgSi	AlMgSi
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Air-termination mast with HVI light plus Conductor

The air-termination mast for extreme heights, including discreet supporting tube and pre-assembled HVI light plus Conductor installed inside the tube.

Type	FM 60 L9M IP HVI LI PL GFK AL STTZN
Part No.	**819 735**
Total length of air-termination mast	8800 mm
Length of air-termination rod	1500 mm
Length of supporting tube	1600 mm
Length of mast pipe	6000 mm
Diameter Ø conductor	21 mm
Colour of conductor	grey
Material of conductor	Cu
Minimum order length	10 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Specifications regarding max. gust wind speeds of the air-termination systems can be found in the wind load matrix.

Air-termination mast with HVI light plus Conductor for metal and roof rafter brackets

Discreet supporting tube for installation on a metal roof/roof rafter bracket with pre-assembled, internal HVI light plus Conductor.



Type	HVI LI PL L6M SR2680 FSP1000 GFK AL V2A
Part No.	**819 688**
Material of supporting tube	GRP / Al
Length of supporting tube	2680 mm
Transport length	2680 mm
Length of air-termination tip	1000 mm
Diameter Ø conductor	21 mm
Colour of conductor	grey
Material of conductor	Cu
Equivalent separation distance s (air)	≤ 60 cm
Minimum order length	6 m
Max. order length	70 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Specifications regarding max. gust wind speeds of the air-termination systems can be found in the wind load matrix.

HVI light plus Conductor

HVI light plus Conductor is supplied in reels, either cut to length or pre-assembled.

HVI light plus Conductor (pre-assembled, installation inside the supporting tube)

With one head piece for inside installation and one connection element (enclosed loose).
Minimum order length 6 m, conductor length has to be stated when ordering (in 0.5 m steps).



Type HVI LI PL ...	RIV 60 21 L6M GR
Part No.	**819 636**
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	grey
Diameter Ø conductor	21 mm
Minimum order length	6 m
Max. order length	70 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

HVI light plus Conductor (Pre-assembled, installation outside the supporting tube)

With one head piece for outside installation and one connection element (enclosed loose).
Minimum order length 6 m, conductor length has to be stated when ordering (in 0.5 m steps).



Type HVI LI PL ...	RAV 60 21 L6M GR
Part No.	**819 638**
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	grey
Diameter Ø conductor	21 mm
Minimum order length	6 m
Max. order length	70 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

HVI light plus Conductor (Supplied in reels)

The HVI light plus Conductor for on-site assembly comes on a disposable plywood reel. Hexagon socket wrench included in delivery. Length 100 / 500 m.



Type HVI LI PL ...	60 21 L100M GR	60 21 L500M GR
Part No.	**819 600**	**819 605**
Material of conductor	Cu	Cu
Material of insulation	PE	PE
Material of sheath	PE	PE
Colour of conductor	grey	grey
Diameter Ø conductor	21 mm	21 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	100 m	500 m

HVI light plus Conductor (Cut to length)



HVI light plus Conductor Cut to length for on-site assembly. The conductor is delivered as a coil.
Please specify conductor length when ordering (0.5 m steps).

Type HVI LI PL ...	60 21 L .. GR
Part No.	**819 609**
Material of conductor	Cu
Material of insulation	**PE**
Material of sheath	**PE**
Colour of conductor	grey
Diameter Ø conductor	21 mm
Minimum order length	6 m
Max. order length	70 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

HVI check:
https://de.hn/6iNdZ

Testable, insulated connection elements for HVI light plus Conductor



General technical data:		
Suitable for		HVI light plus
Material		StSt / **plastic**
Lightning current carrying capability (10/350 µs)		150 kA

Part No.	**819 646**	**819 647**
It should be installed	Earth-side	Installation inside the tube
Connection	Bolt Ø10 mm, L 50 mm with M12 thread with spring washer	Special mushroom head
PU	5 pc(s)	5 pc(s)

Type AE ISO ...	RAV KF HVI 60 V2A
Part No.	**819 648**
It should be installed	Installation outside the tube
Connection	Bolt Ø10 mm, L 50 mm with M12 thread with spring washer
PU	5 pc(s)

Connection elements for HVI light plus Conductor

Mounting-optimised connection elements for routing inside/outside the tube and connection to the earthing system or ring conductor or other parts of the external lightning protection system.

Connection element for HVI light plus Conductor



A connection element for sealing the HVI light plus Conductor, for implementing the sealing end of the conductor on the supporting tube (head piece) or for connecting to other parts of the external lightning protection system or earth-termination system (including a heat-shrinkable sleeve).
This connection element can be used for installation outside the tube for HVI light plus supporting tubes.

Type	AE BO10 KF HVI 60 V2A
Part No.	**819 640**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	21 mm
Lightning current carrying capability (10/350 µs)	150 kA
PU	10 pc(s)

Connection kit for HVI light plus Conductor for installation inside the tube



Two connection elements for sealing the HVI light plus Conductor at both ends. A connection element for implementing the sealing end of the conductor in the supporting tube (head piece) and a connection element for connecting to other parts of the external lightning protection system or earth-termination system (including two heat-shrinkable sleeves).
These connection elements can be used with HVI light plus supporting tubes.

Type	HVI LI PL ASS RIV KF V2A
Part No.	**819 645**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	21 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Measuring point terminal



Measuring points for HVI check.

Type	MPK 18 V2A
Part No.	**819 649**
Suitable for	HVI light plus and HVI
Material	StSt
Clamping range Ø	18–20 mm
PU	5 pc(s)

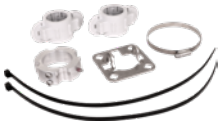
EB element



For discharging the electric field of the HVI light plus Conductor in the sealing end range or in other cases.

Type	PAE 18 EX AB11 V2A
Part No.	**410 222**
Material	StSt
Clamping range Ø	18 mm
Connection hole Ø	10.5 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Air-termination mast fixing kit, D40



Fixing kit for attaching the HVI light plus Conductor to the HVI light plus supporting tubes, Ø40 mm, consisting of connection plate and fixing ring with stainless steel clamp for the sealing end (including four plastic holder halves and two cable ties).

Type	BFS SR D40 4AE HVI LI PL AL V2A KST
Part No.	**819 642**
Material	StSt / Al / **Plastic**
Connection plate support	square hole 13 mm
Conductor holder	4x
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Air-termination mast fixing kit, D50



Fixing kit for attaching the HVI light plus Conductor to the HVI supporting tubes, Ø50 mm, consisting of connection plate and fixing ring with stainless steel clamp for the sealing end (including four plastic holder halves and two cable ties).

Type	BFS SR D50 4AE HVI LI PL AL V2A KST
Part No.	**819 283**
Material	StSt / Al / **Plastic**
Connection plate support	Square hole, 13 mm
Conductor holder	4x
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection plate



Connection plate (for four conductors) for installing the HVI light plus Conductor on the supporting tube Ø40 mm (e.g. Part No. 105 672, 105 673, 105 677, 105 678).

Type	AP SR D40 4AE HVI LI PL V2A
Part No.	**819 298**
Material	StSt
Connection plate support	Square hole, 13 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Accessories for Connection elements for HVI light plus Conductor

Fixing kit for D40/50 supporting tubes



Fixing kit for installing the HVI light plus Conductor or HVI long Conductor on supporting tubes, consisting of two half shells and one cable tie for fixing up to four HVI Conductors in the GRP area of the supporting tube.

Type	BFS SR D50 4AE HVI KST	BFS SR D40 4AE HVI LI PL KST
Part No.	**819 297**	**819 296**
Material	**Plastic**	**Plastic**
Diameter Ø	50 mm	40 mm
Conductor holder	4x	4x
PU	1 pc(s)	1 pc(s)

Heat-shrinkable sleeve, grey



Type	WSS L120 GR
Part No.	**819 997**
Material	**PE**
Length (l)	120 mm
Inner diameter (d)	32 mm
Colour	grey
PU	10 pc(s)

Supporting tubes for HVI light plus Conductor

Discreet supporting tube with/without side outlet and for metal roof/roof rafter bracket.

Without side outlet



Supporting tube with internal sealing end / EB spring element **without** side outlet. Air-termination tip, StSt, Ø10 mm, length 500/1000 mm.

General technical data:	
Outside diameter Ø	40 mm
Length of insulating clearance	1230 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D40 ...	1600 FSP500 HVI LI PL GFK AL V2A	1600 FSP1000 HVI LI PL GFK AL V2A
Part No.	**105 672**	**105 673**
Length of air-termination tip	500 mm	1000 mm
Material of supporting tube	**GRP / Al**	**GRP / Al**
Length of supporting tube	1600 mm	1600 mm
Transport length	1600 mm	1600 mm
PU	1 pc(s)	1 pc(s)

Type SR D40 ...	2400 FSP500 HVI LI PL GFK AL V2A	2400 FSP1000 HVI LI PL GFK AL V2A
Part No.	**105 674**	**105 675**
Length of air-termination tip	500 mm	1000 mm
Material of supporting tube	**GRP / Al**	**GRP / Al**
Length of supporting tube	2400 mm	2400 mm
Transport length	2400 mm	2400 mm
PU	1 pc(s)	1 pc(s)

With side outlet



Supporting tube with internal sealing end / EB spring element **with** side outlet | air-termination tip, StSt, Ø10 mm, length: 500 / 1,000 mm.

Type SR D40 ...	2400 FSP500 SA HVI LI PL GFK AL	2400 FSP1000 SA HVI LI PL GFK AL
Part No.	**105 677**	**105 678**
Length of air-termination tip	500 mm	1000 mm
Material of supporting tube	**GRP / Al**	**GRP / Al**
Length of supporting tube	2400 mm	2400 mm
Transport length	2400 mm	2400 mm
Outside diameter Ø	40 mm	40 mm
Length of insulating clearance	1230 mm	1230 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

For metal roof/roof rafter bracket



Supporting tube with internal sealing end / EB spring element for sub-roof installation. Air-termination tip, StSt, Ø10 mm, length 1000 mm.

Type SR D40 ...	2680 FSP1000 DSH GFK AL V2A
Part No.	**105 688**
Length of air-termination tip	1000 mm
Material of supporting tube	**GRP / Al**
Length of supporting tube	2680 mm
Transport length	2680 mm
Outside diameter Ø	40 mm
Length of insulating clearance	1230 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Conductor holder for HVI light plus Conductor in hazardous areas

Special conductor holders for the HVI light plus Conductor for use in Ex zones 1 and 21.

HVI light plus Ex W55 holder

For fixing to metal structural components (e.g. façades) in Ex zones 1 and 21.



Type	LH ZS 18 EX W55 BP V2A
Part No.	**275 460**
Material	StSt
Conductor support Rd	18 mm
Distance from wall	55 mm
Fixing	[4x] Ø5.1 / [2x] 7 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI light plus Ex W160 holder

For fixing to metal structural components (e.g. façades) in Ex zones 1 and 21.



Type	LH ZS 18 EX W160 BP V2A
Part No.	**275 461**
Material	StSt
Conductor support Rd	18 mm
Distance from wall	160 mm
Fixing	[4x] Ø5.1 / [2x] 7 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI light plus Ex busbar 500

For installing the HVI Conductor with conductor holders HVI light plus Ex W55 on a non-conductive structure, e.g. stone, wood.



Type	VS EX 500 V2A
Part No.	**275 498**
Material of brace	StSt
Fixing	[4x] Ø5.5 / [2x] 7 x 10 mm
Dimension (l x w x d)	450 x 30 x 3 mm
PU	10 pc(s)

HVI light plus Ex P55 holder

For fixing to pipes (e.g. with pipe clamp [part no. 106 323]) in Ex zones 1 and 21.



Type	LH ZS 18 EX P55 SBB V2A
Part No.	**275 464**
Material	StSt
Conductor support Rd	18 mm
Distance from wall	55 mm
Clamping range of tube	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI light plus Ex P160 holder

For fixing to pipes (e.g. with pipe clamp [part no. 106 323]) in Ex zones 1 and 21.



Type	LH ZS 18 EX P160 SBB V2A
Part No.	**275 462**
Material	StSt
Conductor support Rd	18 mm
Distance from wall	160 mm
Clamping range of tube	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

Tools and accessories

Tools for the assembly of our high-voltage-resistant, insulated down conductors and accessories for HVI check.

Stripping tool





Type	AW DEHNHELIX	HVI TOOL CKS
Part No.	**597 230**	**597 231** NEW
Diameter Ø conductor	23 mm	8-35 mm
Material of moulded part	**Plastic**	**Plastic**
Material of blade	StSt	StSt
Colour	black ●	black ● / red ●
PU	1 pc(s)	1 pc(s)

Stripping tool



HVI strip 20 tool for stripping the semi-conducting sheath and the PE insulation of the HVI Conductor and HVI light plus Conductor with an outer diameter of 20 mm. The stripping length is adjustable in steps of 0.2 mm (lock points) using the knob in the handle. Version complete with handle and stripping insert.

Type	HVI STRIP 20
Part No.	**597 220**
Diameter Ø conductor	20 mm (remove the grey sheath beforehand if necessary)
Material of moulded part	**Plastic**
Material of blade	StSt
Colour	black ● / red ●
Dimensions	approx. 231 x 97 mm
PU	1 pc(s)

Cable shears



Cable shears for easily cutting the HVI light Conductor, HVI Conductor (outer diameter 20 / 23 mm), HVI power Conductor (outer diameter 27 mm) and CUI Conductor to length.
The special design of the cable shears also allows for the correct cutting of stranded conductors, making it easier to attach connection elements.

Type	HVI CUTTER 32
Part No.	**597 032**
Diameter Ø conductor	up to 32 mm
Material of knife	**Tool steel** (CR-Moly (SCM440))
Material of handles	**Carbon steel** (SS400)
Length	600 mm
Colour of handles	red (similar to RAL 3020) ●
PU	1 pc(s)

Cutting head

Cutting head for mounting the testable, insulated connection elements on high-voltage-resistant, insulated down conductors.



Type	ISO HEAD 21
Part No.	**597 125** NEW
Diameter Ø conductor	21 mm
Material of moulded part	Al
Material of blade	Steel alloy
Colour	red ●
Dimensions	approx. 105 x 40 mm
PU	1 pc(s)

Insulating cap

Insulating caps for the dielectric withstand test on high-voltage-resistant, insulated down conductors.

Kit: 5 pieces in a suitable rucksack.
The insulating caps allow the connection elements to be safely insulated, thus preventing contact and errors of measurement.



Type	ISOK L450 RS SET
Part No.	**597 817** NEW
Colour	black ●
Opening (Ø)	34 mm
Suitable for	HVI light plus and HVI
Length	450 mm
Material	**Plastic**
PU	1 pc(s)

Accessories for Tools and accessories

Spare blades for stripping tool HVI head 20

1 pack = 4 pieces



Type	EK HVI HEAD 20
Part No.	**597 101**
Material	StSt
PU	1 PAK

Lateral replacement blades for cutting head



Type	EK SEIT ISO HEAD
Part No.	**597 104** NEW
For cutting head	Part No. 597 125
Material	**Steel alloy**
PU	1 pc(s)

Accessories for HVI light plus Conductor

A wide range of items for fixing the HVI light plus Conductor along the discharge and conductor route, as well as various accessory items.

Roof conductor holders for flat roofs

For fixing round conductors and strips on flat roofs with one conductor support type FB.



Type	DLH FB 8 LO 100X100X70
Part No.	**253 015**
Conductor routing	loose
Material of conductor holder	**plastic**
Conductor support Rd	8 mm
Block	**concrete (C35/45)**
Weight	1 kg
PU	10 pc(s)

Adapter for installing the HVI light Conductor / HVI Conductor / HVI light plus Conductor on flat roofs

For snapping on to the roof conductor holder type FB (part no. 253 015) and KF (part no. 253 030).



Type	RLA 20 FB K SW
Part No.	**253 026**
Material	**plastic**
Colour	black ●
Conductor support Rd	20-21 mm
PU	50 pc(s)

Roof conductor holder

For flat roofs, weight approx. 4.7 kg
Conductor holder, concrete block and base plate, for routing of the HVI light Conductor, HVI light plus Conductor HVI Conductor on flat roofs.



Type	DLH ZS 20 23 V2A 4.7KG BES180 GP300 K
Part No.	**253 229**
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Total weight	approx. 4.7 kg
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Roof conductor holder

For flat roofs, weight approx. 8.6 kg
Conductor holder, concrete base and plastic base plate, for routing of the HVI light Conductor, HVI light plus Conductor HVI Conductor on flat roofs.



Type	DLH ZS 20 23 V2A 8.5KG KT D240 ULP
Part No.	**253 239**
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Total weight	approx. 8.6 kg
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Conductor holder



Conductor holder with slotted saddle clamp for HVI light Conductor, HVI light plus Conductor, HVI Conductor for fixing into a base plate (Part No. 253 300) with concrete block (Part No. 253 301).

Type	LH ZS 20 23 DS10 L75 V2A
Part No.	**253 289**
Material	StSt
Conductor support Rd	20-23 mm
Height of conductor holder	87 mm
Bolt	Ø10 mm (push-fit)
PU	1 pc(s)

Concrete block



For stabilising the base plate.

Type	BES 4.6KG SB10 180X180X70
Part No.	**253 301**
Material	**concrete (C35/45)**
Weight	4.6 kg
Dimensions	180 x 180 x 70 mm
PU	24 pc(s)

Base plate



Base plate to hold the spacer bar (Part Nos. 253 315, 253 325) and conductor holder (Part No. 253 289) and to protect the roof sheeting under the concrete block (Part No. 253 301).

Type	GP B10 H60 D300 KS GR
Part No.	**253 300**
Diameter Ø	300 mm
Diameter Ø of lock bush	10 mm
Height	60 mm
Material	**plastic**
Colour	grey
PU	24 pc(s)

Conductor holder



Conductor holder with slotted saddle clamp for HVI light Conductor, HVI light plus Conductor HVI Conductor for fixing into a concrete base with wedge (Part No. 102 075).

Type	LH ZS 20 23 KT D16 L85 V2A
Part No.	**253 279**
Material	StSt
Conductor support Rd	20-23 mm
Height of conductor holder	125 mm
Bolt	Ø16 mm (wedge-fit)
PU	1 pc(s)

Spacer with EB element for HVI light plus Conductor



Spacer for establishing the variable adjustment range of the HVI light plus Conductor.
With MV clamp for the connection to the equipotential bonding (Rd 16 mm / Rd 8–10 mm).
The concrete base (part no. 102 010, weight 17 kg) and the plastic base plate (part no. 102 050) have to be ordered separately.

Type	DH PAE 18 D16 1000 AL V2A
Part No.	**105 466**
Material of spacer	Al
Length of spacer	1000 mm
Conductor support Rd	18 mm
Material of conductor holder	StSt
Clamping range Rd MV clamp	8-10 / 16 mm
Clamp material	Al
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Concrete base



With fixing wedge, for air-termination tips Ø10, length 1000 mm or DEHNiso spacers Ø16 mm, length up to 675 mm (distance 0.8 m) or conductor holder (Part No. 253 279).

Type	BES 8.5KG KT10 16 D240 SET
Part No.	**102 075**
Total weight	8.5 kg
Diameter Ø	240 mm
Material	**concrete (C45/55)**
Material of wedge / adapter	StSt
PU	120 pc(s)

Base plate



To protect the roof sheeting under the concrete base.
For concrete bases (Part No. 102 075, 102 003).

Type	ULP KS D280 SW
Part No.	**102 060**
Outside diameter Ø	280 mm
Inside diameter Ø	270 mm
Material	**EVA**
Colour	black
PU	1 pc(s)

Spacer for the HVI Conductor / HVI light plus Conductor



Spacer for additional mechanical fixing in the variable sealing end area.
The spacer is installed with **two** concrete bases (part no. 102 010; weight: 17 kg). The **concrete base** and the **plastic base plate** (part no. 102 050) must be **ordered separately**.

Type	DH ZS 20 D16 1270 GFK PA
Part No.	**106 815**
Material of spacer	**GRP**
Material of conductor holder / adapter	**PA**
Number of concrete bases	2 (17 kg each)
Length	1270 mm
Insulating clearance	1245 mm
Conductor support Rd	20-21 mm
Thread	M8
PU	1 pc(s)

Concrete base

With fixing wedge, stackable, for erecting tripods and air-termination rods Ø16 mm, chamfered or tapered, DEHNiso spacer Ø16 mm or conductor holder (Part No. 253 279).



Type	BES 17KG KT16 D337 SET
Part No.	**102 010**
Weight	17 kg
Support	with fixing wedge Ø16 mm
Diameter Ø	337 mm
Material	**concrete (C45/55)**
Material of wedge / adapter	StSt
PU	54 pc(s)

Base plate

To protect the roof sheeting under the concrete base.
For concrete bases (Part Nos. 102 010, 102 002).



Type	ULP KS D370 SW
Part No.	**102 050**
Outside diameter Ø	370 mm
Inside diameter Ø	360 mm
Material	**EVA**
Colour	black ●
PU	1 pc(s)

Spacer for the HVI light Conductor / HVI light plus Conductor

Spacer for implementing the adjustment range (length 1200 mm) without additional connection to the equipotential bonding.
The spacer is installed, e.g. in a concrete block with fixing wedge (17 kg) (Part No. 102 340).



Type	DH ZS 20 D16 1000 GFK PA	DH ZS 20 D16 500 GFK PA
Part No.	**106 812**	**106 852**
Material of spacer	**GRP**	**GRP**
Material of conductor holder / adapter	**PA**	**PA**
Length (l1)	1000 mm	500 mm
Conductor support Rd	20-21 mm	20-21 mm
Thread	M8	M8
Max. gust wind speed (1x block 17 kg, holder distance 1000 mm)	98 km/h	151 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Roof conductor holder

Roof conductor holder with prepunched points for bending and hooking in the roof tile and for bolting to the roof battens, for routing the HVI Conductor, HVI light plus Conductor, in gable roof surfaces.



Type	DLH ZS 20 23 H55 L205 V2A
Part No.	**202 829**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Length of brace	205 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Roof conductor holders for roofs with round standing seam

Roof conductor holder with slotted saddle clamp for HVI light Conductor, HVI light plus Conductor HVI Conductor for fixing to metal roofs with round standing seam.



Type	DLH RSF ZS 20 23 V2A
Part No.	**202 850**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	Ø20-25 mm
Conductor support Rd	20-23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder for roofs with clamping seam (e.g. RIB-ROOF Speed 500 from Zambelli)

Roof conductor holder with slotted saddle clamp for HVI light Conductor, HVI light plus Conductor HVI Conductor for fixing to metal roofs with clamping seam.



Type	DLH KF ZS 20 23 V2A
Part No.	**202 851**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	approx. 18 / 22 mm
Conductor support Rd	20-23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder for roofs with standing seam

Roof conductor holder with slotted saddle clamp for HVI light Conductor, HVI light plus Conductor HVI Conductor for fixing to metal roofs with standing seam.



Type	DLH SF ZS 20 23 V2A
Part No.	**202 852**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	0.7-8 mm
Conductor support Rd	20-23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder with connection lug

Roof conductor holder with slotted saddle clamp for HVI light Conductors, HVI Conductors and Z-shaped connection lug for riveting or screwing to metal roofs.



Type	DLH AL ZS 20 23 V2A
Part No.	**202 853**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Conductor support Rd	20-23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder with tensioning strap

With metal conductor holder.



Type	LH ZS 20 23 SB50.300 V2A
Part No.	275 320
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Tensioning range Ø pipe	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Conductor holder for fixing with a tensioning strap

For fixing the HVI Conductor to pipes, e.g. with pipe clamp (Part No. 106 323).



Type	LH ZS 20 23 SBH 25X0.3 V2A
Part No.	275 319
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

Pipe clamp

For fixing (clamping) conductor holders (e.g. Part No. 275 319).



Type	BRS SPB25 50.300 V2A
Part No.	106 323
Material of head / strap	StSt
Clamping range Ø	50-300 mm
Dimensions of strap	1100 x 25 x 0.3 mm
Material of screw	StSt
PU	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901) in case of larger pipe diameters.



Type	SPK 25X0.3 V2A
Part No.	106 324
Material of head	StSt
For strap (w x d)	25 x 0.3 mm
Screw	M8 x 20 mm
Material of screw	StSt
PU	20 pc(s)

Tensioning strap



Type	SPB 25X0.3 L100M V2A
Part No.	540 901
Material	StSt
Strap dimensions (w x d)	25 x 0.3 mm
Length	100 m
PU	1 pc(s)

Conductor holder

With thread.
For wall mounting with two-screw clamp (not for use in the sealing end range).



Type	LH ZS 20 23 GM8 V2A	LH ZS 20 23 GM6 V2A
Part No.	275 250	275 251
Material of conductor holder	StSt	StSt
Conductor support Rd	20-23 mm	20-23 mm
Thread	M8	M6
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)	25 pc(s)

Conductor holder

With plastic base.
For wall mounting with two-screw clamp (not for use in the sealing end range).



Type	LH ZS 20 23 KS H10 V2A
Part No.	275 259
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Thread	M8
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder

With slotted hole.
Wall-mounted conductor holder with two-screw clamp (not for use in the sealing end range).



Type	LH ZS 20 23 B5.5X10 V2A
Part No.	275 252
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Fixing hole	5.5 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder for the HVI Conductor / HVI light plus Conductor

For mounting on walls and for mounting in the sealing end range.



Type	LH ZS 20 H19 IGM8 GR PA
Part No.	275 220
Material of conductor holder	PA
Conductor support Rd	20-21 mm
Female thread	M8
Fixing hole	6.5 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder for the HVI Conductor / HVI light plus Conductor

For wall mounting with two-screw clamp (not for use in the sealing end range).



Type LH ZS ...	20 H10 B6.5X16 V2A
Part No.	275 229
Material of conductor holder	StSt
Conductor support Rd	20-21 mm
Fixing hole	6.5 x 16 mm
Screw	M6 x 14 mm
PU	50 pc(s)

Conductor holder with tensioning strap

With conductor holder made of PA.



Type	LH ZS 20 SB50.300 PA V2A
Part No.	**275 330**
Material of conductor holder	**PA**
Conductor support Rd	20-21 mm
Tensioning range Ø pipe	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Heat-shrinkable sleeve, grey



Type	WSS L120 GR
Part No.	**819 997**
Material	**PE**
Length (l)	120 mm
Inner diameter (d)	32 mm
Colour	grey
PU	10 pc(s)

Cable tie

Cable ties for routing the various cables with the plastic holder half shells.



Type	KB UVB 460X7.6 SW	KB UVB 546X13 SW
Part No.	**819 998**	**819 999**
Length	460 mm	546 mm
Width	7.6 mm	13.2 mm
Material	**Polyamide 6.6**	**Polyamide 6.6**
Design	UV-resistant	UV-resistant
PU	100 pc(s)	50 pc(s)

Sign

Front in German
ACHTUNG! Getrennter Blitzschutz mit HVI Leitung
Back in English
ATTENTION! Separated Lightning Protection with HVI conductor system



Type	HWS 300X210 AGBS HVI DE EN K
Part No.	**480 598**
Material	**plastic**
Dimensions (l x w x d)	300 x 210 x 1 mm
Fixing	[4x] Ø6.5 mm
Hole distance	270 / 180 mm
PU	1 pc(s)

Sign

Front in German
ACHTUNG! Potentialausgleich

Back in English
ATTENTION! Equipotential Bonding

Hole distance suitable for two-screw clamp (Part No. 480 291).



Type	HWS 70X30 APA DE EN K
Part No.	**480 599**
Material	**plastic**
Dimensions (l x w x d)	70 x 30 x 1 mm
Fixing	[2x] Ø6.5 mm
Hole distance	38 mm
PU	10 pc(s)

Adapter for installing the HVI Conductor on flat roofs

For snapping on to the roof conductor holder type FB (part no. 253 015) and KF (part no. 253 030).



Type	RLA 23 FB K SW
Part No.	**253 027**
Material	**plastic**
Colour	black ●
Conductor support Rd	23 mm
PU	50 pc(s)

Air-termination tip adapter

Reducing adapter for Ø22-mm fixtures for the central mounting of Ø10/16-mm air-termination rods on HVI supporting tubes.



Type	AD 22 16 L45 AL	AD 22 10 L45 AL
Part No.	**819 895** NEW	**819 898** NEW
Material	Al	Al
Reduction (Ø)	22/16 mm	22/10 mm
PU	10 pc(s)	10 pc(s)

Type	AD 22 16 L45 V2A	AD 22 10 L45 V2A
Part No.	**819 896** NEW	**819 897** NEW
Material	NIRO	NIRO
Reduction (Ø)	22/16 mm	22/10 mm
PU	10 pc(s)	10 pc(s)

Supporting tube fixing

Wide variety of holders and fixings for supporting tubes and air-termination rods

Fixing clamp

Clamp for fixing the supporting tube, e.g. on the antenna pole. With spacer, length 30 mm for adjusting antenna supports.



Type	BSC D40 D45.65 V2A
Part No.	**105 161**
Material	StSt
Clamping range of pipe Ø	45-65 mm (1 $^1/_2$-2'')
Clamping range of supporting tube	40-50 mm
Length of spacer	30 mm
PU	1 pc(s)

Wall mounting bracket for vertical mounting

For attaching supporting tubes or air-termination rods D40 / D50 to roof-mounted structures or walls.



Type	WB D40.50 SE WA46 V2A	WB D40.50 SE WA110 V2A
Part No.	**105 342**	**105 348**
Material of bracket	StSt	StSt
Fixing	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm
Clamping range for supporting tube	40-50 mm	40-50 mm
Distance from wall	46 mm	110 mm
PU	1 pc(s)	1 pc(s)

Wall mounting bracket for horizontal mounting, flat

For fixing Ø40 mm supporting tubes to the structure to be protected or to a wall.



Type	WB D40 WA V2A
Part No.	105 140
Material	StSt
Fixing	[8x] Ø5.1 / [4x] 11 x 20 mm
Distance from wall	80 mm
Clamping range of air-termination rod	40 mm
PU	1 pc(s)

Railing clamp

For pipes.

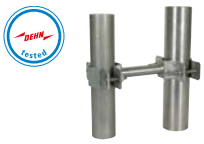


Type	BS D40.50 D48.60 V2A
Part No.	105 354
Material	StSt
Clamping range for pipe Ø	48-60 mm (1 1/2-2'')
Clamping range for supporting tube	40-50 mm
PU	5 pc(s)

Railing clamp

With spacer for adjusting, e.g. antenna supports.

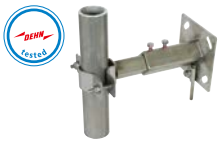
*) For exact assignment, see test certificate.



Type	BSC D40 DS95 D45.65 V2A
Part No.	105 162
Material	StSt
Clamping range for pipe Ø	45-65 mm (1 1/2-2'')
Clamping range for supporting tube	40-50 mm
Length of spacer	95 mm
Standard	EN 62561-1
PU	1 pc(s)

Wall mounting bracket, adjustable from 150-200 mm

For attaching supporting tubes or air-termination rods D40 / D50, with double clamp for connecting 2x Rd 8-10 mm.



Type	WB D40.50 V150.200 V2A
Part No.	105 344
Material of bracket	StSt
Clamping range for supporting tube	40-50 mm
Distance from wall	150-200 mm
Dimensions of plate	120 x 120 x 4 mm
Fixing	[4x] 12 x 26 mm
Standard	EN 62561-1
PU	1 pc(s)

Holder for air-termination rods and supporting tubes

Fixing clamp with tensioning strap.

*) For exact assignment, see test certificate.



Type	BSC D40.50 SB50.300 V2A
Part No.	105 160
Material	StSt
Clamping range Ø pipe	50-300 mm
Clamping range of air-termination rod	40-50 mm
Dimensions of strip (w x d)	25 x 0.3 mm
Standard	EN 62561-1
PU	1 pc(s)

Wall mounting bracket, adjustable from 230-1300 mm

For fixing supporting tubes or air-termination rods D40 / D50.



General technical data:	
Material of bracket	St/tZn / StSt
Clamping range for supporting tube	40-50 mm
Dimensions of plate	120 x 120 x 4 mm
Fixing	[4x] 12 x 26 mm

Type	WB D40.50 V700.1300 STTZN V2A	WB D40.50 V400.700 STTZN V2A
Part No.	105 349	105 343
Distance from wall	700-1300 mm	400-700 mm
PU	1 pc(s)	1 pc(s)

Type	WB D40.50 V230.400 STTZN V2A
Part No.	105 347
Distance from wall	230-400 mm
PU	1 pc(s)

Mounting Bracket for Installation on Rafters

For side fixing of the

- HVI light plus Conductor inside the supporting tube (Ø40 mm)
- HVI Conductor routed inside the supporting tube (Ø50 mm)
- And to attach and fix the supporting tubes and for the sub-roof installation of the HVI Conductor or HVI light plus Conductor.



Note: Mounting conditions on site must be clarified with the builder. You can find more information on max. gust wind speeds at www.dehn-international.com

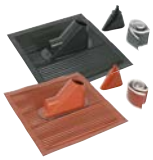
Type DASH ...	D48 AS600.750 STTZN
Part No.	105 240
Material	St/tZn
Adjustment range	600-750 mm
Roof inclination	20-50°
Diameter Ø of supporting tube	48 mm
Fixing screw	✪ 8 x 120 mm
PU	1 pc(s)

Accessories f. Mounting Bracket f. Installation on Rafters

Roof bushing kit

For bushing and sealing of poles and pipes on steep roofs

- Universal use on different roof tiles due to malleable aluminium roof tile
- Roof bushing kit comprises aluminium roof tile, rubber grommet and sealing tape.



Type DADS ...	D10 16 48 AL SCH	D10 16 48 AL ROT
Part No.	105 245	105 246
Material of roof tile	aluminium, with UV-stabilised plastic coating	aluminium, with UV-stabilised plastic coating
Dimensions of roof tile	450 x 500 mm	450 x 500 mm
Diameter Ø of mast hole	10 / 16 / 48 mm	10 / 16 / 48 mm
Roof inclination	24-53°	24-53°
Material of rubber grommet	UV-stabilised rubber mixture	UV-stabilised rubber mixture
Material of sealing tape	rubber-based plastic sealant	rubber-based plastic sealant
Type of sealing tape	strongly adhesive, self-welding	strongly adhesive, self-welding
Dimensions of sealing tape	600 x 80 mm	600 x 80 mm
Processing temperature	+5 °C ... +40 °C	+5 °C ... +40 °C
Permanent temperature range of sealing tape	-40 °C ... +80 °C	-40 °C ... +80 °C
Colour	black ●	red ●
PU	1 pc(s)	1 pc(s)

Mounting Bracket for Air-Termination Systems on Metal Roofs

Stainless steel mounting bracket for installing HVI air-termination systems or air-termination rods on metal roofs:
Mounting bracket suitable for vertical mounting of air-termination systems on metal roofs with a max. roof slope of up to 53°.
For fixing Ø40/50 air-termination rods and for top-mounting HVI light plus and HVI supporting tubes with inside conductor routing.

Note: Mounting conditions on site must be clarified with the builder. You can find more information on max. gust wind speeds at www.dehn-international.com



Type MDH ...	D48 VB550.900 V2A
Part No.	**105 241**
Material	StSt
Adjustment range	550-900 mm
Roof inclination	5-53°
Standard	EN 62561-1
PU	1 pc(s)

Accessories for Mounting Bracket for Air-Termination Systems on Metal Roofs

Holder for metal roofs with round standing seam

Screw with self-locking nut.



Type	HA M8 RSF20.25 V2A
Part No.	**123 040**
Material of holder	StSt
Clamping range	Ø20-25 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Holder for metal roofs with clamping seam (e.g. RIB-ROOF Speed 500 from Zambelli)

Screw with self-locking nut.



Type	HA M8 KF18.22 V2A
Part No.	**123 041**
Material of holder	StSt
Clamping range	approx. 18 / 22 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Holder for metal roofs with standing seam

Screw with self-locking nut.



Type	HA M8 SF0.7 8 V2A
Part No.	**123 042**
Material of holder	StSt
Clamping range	0.7-8 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

Holder for metal roofs for riveting or screwing

Screw lock using self-locking nut with serrated bearing.
Note: The leak-tightness of the roof must be ensured during installation; e.g. by using waterproof cup rivets. You might need to consult with the trade people responsible.



Type HA M8 ...	AL ZF B5.2 6.5 V2A
Part No.	**123 043**
Material of holder	StSt
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Screw	M8 x 25 mm
Material of screw / nut	StSt
Standard	EN 62561-1
PU	12 pc(s)

C-mounting rail for mounting bracket for installation on metal roofs

C mounting rails with holes for fixing the mounting bracket on roofs with large batten distances (> 600 mm).



Type	MSC MDH V4A L1000 MZ V2A	MSC MDH V4A L1500 MZ V2A
Part No.	**123 050**	**123 051**
Material of the rail	StSt (V4A)	StSt (V4A)
Dimensions of the rail (l x w x h)	[2x] 1000 x 41 x 41 mm	[2x] 1500 x 41 x 41 mm
PU	1 pc(s)	1 pc(s)

Type	MSC MDH V4A L2000 MZ V2A
Part No.	**123 052**
Material of the rail	StSt (V4A)
Dimensions of the rail (l x w x h)	[2x] 2000 x 41 x 41 mm
PU	1 pc(s)

Max. Gust wind speeds in km/h for air-termination systems.

Tripod mounting – support tube

Cable in the support tube GFK / Al		Installation type outside | inside		Tripod, small, St/tZn Part No. **105 357**				Tripod, small, St/tZn Part No. **105 351**				... arrow arrangement Part No. **105 351**				Supporting tube stand Part No. **105 244**
Part No.	Height [mm]	Number of concrete bases		3x	6x	9x	12x	3x	6x	9x	12x	3x	6x	9x	12x	
105 672 819 672	2100	0	1	–	239	240	240	–	240	240	240	–	240	240	240	–
		1	0-1	135	192	239	240	192	240	240	240	147	212	240	240	240
		2-4	0-1	118	165	204	217	166	217	217	217	126	183	217	217	212
105 673 819 673	2600	0	1	–	212	235	235	–	235	235	235	–	235	235	235	–
		1	0-1	125	178	219	228	178	228	228	228	135	197	228	228	226
		2-4	0-1	112	155	192	200	155	200	200	200	121	172	200	200	198
105 674 819 674	2900	0	1	–	149	191	223	–	216	240	240	–	171	212	240	–
		1	0-1	93	124	149	179	124	173	199	199	100	135	171	199	240
		2-4	0-1	–	110	132	149	111	147	170	170	–	117	144	170	212
105 675 819 675	3400	0	1	–	140	179	209	–	202	234	234	–	159	199	234	–
		1	0-1	–	120	144	172	122	166	190	190	96	129	163	190	225
		2-4	0-1	–	105	128	147	107	140	163	163	–	114	137	163	197

Cable in the support tube GFK / Al		Installation type outside | inside		Tripod, small, StSt and Adapter set D40 Part No. **107 390 + 107 399**				Four-legged stand, small, StSt and Adapter set D40 Part No. **107 490 + 107 399**			
Part No.	Height [mm]	Number of concrete bases		3x	6x	9x	12x	4x	8x	12x	16x
105 674 819 674	2900	0	1	No internal installation possible							
		1	0-1	121	170	209	240	159	225	240	240
		2-4	0-1	108	144	181	211	137	196	215	215
105 675 819 675	3400	0	1	No internal installation possible							
		1	0-1	117	163	201	228	149	217	228	228
		2-4	0-1	105	140	176	201	135	191	201	201
105 677	2900	0	1	147	208	240	240	195	240	240	240
		1	0-1	121	170	209	240	159	225	240	240
		2-4	0-1	108	144	181	211	137	196	215	215
105 678	3400	0	1	137	196	237	237	185	237	237	237
		1	0-1	117	163	201	228	149	217	228	228
		2-4	0-1	105	140	176	201	135	191	201	201

Wall assembly

Part No.	$L_{(max)}$ [mm]	Number of holders *)	Installation type outside | inside		
105 674 819 674	2400	*) 2 pc(s)	0	1	240
			1	0-1	240
			2-4	0-1	217
105 675 819 675	2900	*) 2 pc(s)	0	1	237
			1	0-1	229
			2-4	0-1	202
819 735	7200	*) 3 pc(s)	0	1	195
			1	0-1	152
			2-4	0-1	132

Flat roof – tripod in a set

... arrow arrangement

Part No.	Height [mm]	Number of concrete bases	Installation type outside	3x	6x	9x	3x	6x	9x
819 682	2700	1		169	228	228	132	190	228
		2-4		147	200	200	116	166	200
819 687	3700	1		137	159	159	110	155	199
		2-4		128	159	159	103	140	159
819 680	4700	1		99	99	99	–	–	–
		2-4		99	99	99	–	–	–
819 685	2200	1		132					
		2-4		117					
819 690	2700	1		125					
		2-4		110					

Special solutions

Part No.	Height [mm]	Installation type outside | inside		Rafter bracket, St/tZn Part No. **105 240**	Metal roof bracket, StSt Part No. **105 241**
105 688 819 688	3680	0	1	149	149
		1	0-1	124	124
		2-4	0-1	110	110

HVI Conductor



Technical data	HVI Conductor (pre-assembled)	HVI long Conductor (on a reel)	HVI long Conductor (cut to length)
Picture			
Structure	solid / stranded	solid / stranded	solid / stranded
Cross section of the inner conductor (Cu)	19 mm²	19 mm²	19 mm²
Colour of conductor	black / grey	black / grey	black / grey
Outer diameter	20 / 23 mm	20 / 23 mm	20 / 23 mm
Equivalent separation distance (air)	≤ 75 cm	≤ 75 cm	≤ 75 cm
Equivalent separation distance (solid material)	≤ 150 cm	≤ 150 cm	≤ 150 cm
Minimum bending radius	200 / 230 mm	200 / 230 mm	200 / 230 mm
Operating temperature	-30 °C ... +70 °C	-30 °C ... +70 °C	-30 °C ... +70 °C
Installation temperature	-5 °C ... +40 °C	-5 °C ... +40 °C	-5 °C ... +40 °C
Tensile strength	950 N	950 N	950 N
UV / weather-resistant	yes	yes	yes
Tested with I_{imp} (10/350 µs) based on EN 62561-1	150 kA	150 kA	150 kA
For use in class of LPS in case of a single down conductor without current distribution (k_c = 1)	II, III, IV	II, III, IV	II, III, IV
Installation in Ex zone 1 and 21	allowed	allowed	allowed
Max. order length	6 m ... 60 / 70 m	100 m / 400 m / 500 m	6 m ... 60 / 70 m
Cable weight / 100 m	–	46 kg / 54 kg	–

Supporting Tube with HVI Conductor

Optically optimised installation of the HVI Conductor inside the supporting tube creates less wind exposed surface.
For use up to an equivalent separation distance s ≤ 75 cm (in air) or s ≤ 150 cm (solid material).
Conductor length to be indicated when ordering (steps of 0.5 m).

HVI Conductor in supporting tube with air-termination tip

With internal sealing end and air-termination tip, StSt, Ø10 mm, length 1000 mm.



Type HVI ...	20 M L6M SR3200 IP FSP1000 GFK AL	23 L6M SR3200 IP FSP1000 GFK AL
Part No.	**819 326**	**819 336**
Material of supporting tube	**GRP / Al**	**GRP / Al**
Length of supporting tube	3200 mm	3200 mm
Transport length	3200 mm	3200 mm
Outside diameter Ø	50 mm	50 mm
Diameter Ø conductor	20 mm	23 mm
Colour of conductor	black ●	grey ●
Material of conductor	Cu	Cu
Minimum order length	6 m	6 m
Max. free length with air-termination tip (wall mounting)	3500 mm	3500 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

HVI Conductor in supporting tube (side outlet) with air-termination tip and small tripod

With internal sealing end and air-termination tip, StSt, Ø10 mm, length 1,000 mm.
With tripod (part no. 107 390).



Type HVI ...	20M L6M SR3200 SA FSP1000 AL DBS V2A	23 L6M SR3200 SA FSP1000 AL DBS V2A
Part No.	**819 371**	**819 381**
Material of supporting tube	**GRP / Al**	**GRP / Al**
Length of supporting tube	3200 mm	3200 mm
Transport length	3200 mm	3200 mm
Outside diameter Ø	50 mm	50 mm
Diameter Ø conductor	20 mm	23 mm
Colour of conductor	black ●	grey ●
Material of conductor	Cu	Cu
Radius of tripod	680 mm	680 mm
Space required for tripod	1175 x 1020 mm	1175 x 1020 mm
Minimum order length	6 m	6 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

HVI Conductor in supporting tube with air-termination rod

With internal sealing end and air-termination rod, Al, Ø22 / 16 / 10 mm, length 2,500 mm.



General technical data:	
Material of supporting tube	**GRP / Al**
Outside diameter Ø	50 mm
Material of conductor	Cu
Minimum order length	6 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type HVI ...	20 M L6M SR3200 IP RFS2500 GFK AL	23 L6M SR3200 IP RFS2500 GFK AL
Part No.	**819 328**	**819 338**
Length of supporting tube	3200 mm	3200 mm
Transport length	3200 mm	3200 mm
Diameter Ø conductor	20 mm	23 mm
Colour of conductor	black ●	grey ●
Max. free length with air-termination rod (wall mounting)	5000 mm	5000 mm
PU	1 pc(s)	1 pc(s)

Type HVI ...	20 M L6M SR4700 IP RFS2500 GFK AL	23 L6M SR4700 IP RFS2500 GFK AL
Part No.	**819 426**	**819 438**
Length of supporting tube	4700 mm	4700 mm
Transport length	4700 mm	4700 mm
Diameter Ø conductor	20 mm	23 mm
Colour of conductor	black ●	grey ●
Max. free length with air-termination rod (wall mounting)	5500 mm	5500 mm
PU	1 pc(s)	1 pc(s)

HVI Conductor in supporting tube (side outlet) with air-termination rod and small tripod

With internal sealing end and air-termination rod, Al, Ø22 / 16 / 10 mm, length 2,500 mm.
With tripod (part no. 107 390).



Type HVI ...	20M L6M SR3200 SA RFS2500 AL DBS V2A	23 L6M SR3200 SA RFS2500 AL DBS V2A
Part No.	**819 373**	**819 383**
Material of supporting tube	**GRP / Al**	**GRP / Al**
Length of supporting tube	3200 mm	3200 mm
Transport length	3200 mm	3200 mm
Outside diameter Ø	50 mm	50 mm
Diameter Ø conductor	20 mm	23 mm
Colour of conductor	black ●	grey ●
Material of conductor	Cu	Cu
Radius of tripod	680 mm	680 mm
Space required for tripod	1175 x 1020 mm	1175 x 1020 mm
Minimum order length	6 m	6 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

HVI Conductor in supporting tube (side outlet) with air-termination rod and large tripod

With internal sealing end and air-termination rod, Al, Ø22 / 16 / 10 mm, length 2,500 mm.
With tripod (part no. 107 391).



Type HVI ...	20M L6M SR4700 SA RFS2500 AL DBS V2A	23 L6M SR4700 SA RFS2500 AL DBS V2A
Part No.	**819 473**	**819 483**
Material of supporting tube	**GRP / Al**	**GRP / Al**
Length of supporting tube	4700 mm	4700 mm
Transport length	4700 mm	4700 mm
Outside diameter Ø	50 mm	50 mm
Diameter Ø conductor	20 mm	23 mm
Colour of conductor	black ●	grey ●
Material of conductor	Cu	Cu
Radius of tripod	1330 mm	1330 mm
Space required for tripod	2300 x 1995 mm	2300 x 1995 mm
Minimum order length	6 m	6 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

The conductor cannot be returned as it is made to order.

Air-Termination Mast with HVI Conductor

For a maximum free length of the whole air-termination system of 8.5 m.
To be fixed with three variable supports (Part No. 105 345).

Transport length 6000 mm.

With 1x HVI Conductor installed inside the supporting tube. Conductor length has to be stated when ordering (0.5 m steps).

Maximum total length of the HVI Conductor of 12.5 m in case of class of LPS II.
Maximum total length of the HVI Conductor of 18.5 m in case of class of LPS III.

Type	FM 60 L11M IP HVI M L10M GFK AL STTZN
Part No.	**819 730**
Total length of air-termination mast	10800 mm
Length of air-termination rod	3000 mm
Length of supporting tube	2100 mm
Length of mast pipe	6000 mm
Colour of conductor	black ●
Minimum order length	10 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Accessories for Air-Termination Mast with HVI Conductor

Variable support for air-termination masts

Three supports should be mounted for each air-termination mast.
Clamping range of air-termination mast Ø60 mm.



Type WB D60 ...	V250.350 STTZN
Part No.	**105 345**
Material of support	**St/tZn**
Adjustment range	250-350 mm
Fixing holes Ø	[4x] 12 x 25 mm
PU	1 pc(s)

Air-termination Mast for Sub-roof Installation of the HVI Conductor

For top mount on roof rafter brackets
Optically optimised routing of the HVI Conductor inside the supporting tube. The HVI Conductor is led through the mast support of the roof rafter bracket and installed in the region of the counter/roof battens.
Advantages:

- Sub-roof installation – optically indiscernible
- Top mount with only one visible tube
- No mechanical load, e.g. snow



HVI Conductor in supporting tube with air-termination rod

Type	HVI 20 M L6M SR1955 FS2500 DSH GFK AL
Part No.	**819 247**
Material of supporting tube	**GRP / Al**
Length of supporting tube	1955 mm
Length of air-termination rod	2500 mm
Outside diameter Ø GRP	50 mm
Diameter Ø conductor	20 mm
Colour of conductor	black ●
Material of conductor	Cu
Minimum order length	6 m
Max. gust wind speed	140 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

HVI Conductor / HVI long Conductor

High-voltage-resistant, insulated down conductor for keeping the separation distance to electrically conductive parts according to IEC 62305-3.

For use up to an equivalent separation distance s ≤ 75 cm (in air) or s ≤ 150 cm (solid material).

HVI Conductor (pre-assembled, installation inside the supporting tube)

With one head piece and one connection element (enclosed loose).
Minimum order length 6 m, conductor length has to be stated when ordering (in steps of 0.5 m).



Type HVI ...	RIV 75 20 L6M SW M	RIV 75 23 L6M GR M
Part No.	**819 220**	**819 223**
Material of conductor	Cu	Cu
Material of insulation	**PE**	**PE**
Material of sheath	**PE**	**PE**
Colour of conductor	black ●	grey ●
Diameter Ø conductor	20 mm	23 mm
Minimum order length	6 m	6 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Note:
Mast holder, heavy version (Part No. 105 352), see page 90.

HVI Conductor (pre-assembled, installation outside the supporting tube)

With one head piece and one connection element (enclosed loose).
Minimum order length 6 m, conductor length has to be stated when ordering (in steps of 0.5 m).



Type HVI ...	RAV 75 20 L6M SW M	RAV 75 23 L6M GR M
Part No.	819 226	819 227
Material of conductor	Cu	Cu
Material of insulation	PE	PE
Material of sheath	PE	PE
Colour of conductor	black ●	grey ●
Diameter Ø conductor	20 mm	23 mm
Minimum order length	6 m	6 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

HVI long Conductor (on cable reel)

The HVI long Conductor comes on a disposable plywood reel. Allen key included in delivery.



General technical data:	
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type HVI ...	LO 75 20 L100M SW M	LO 75 23 L100M GR M
Part No.	819 135	819 136
Colour of conductor	black ●	grey ●
Diameter Ø conductor	20 mm	23 mm
PU	100 m	100 m

Type HVI ...	LO 75 20 L500M SW M	LO 75 23 L400M GR M
Part No.	819 138	819 110
Colour of conductor	black ●	grey ●
Diameter Ø conductor	20 mm	23 mm
PU	500 m	400 m

HVI long Conductor (cut to length)

Cut-to-length HVI long Conductor for on-site assembly. Conductor is delivered as a coil.
Conductor length has to be stated when ordering (0.5 m steps).



Type HVI ...	LO 75 20 L... SW M	LO 75 23 L... GR M
Part No.	819 131	819 132
Material of conductor	Cu	Cu
Material of insulation	PE	PE
Material of sheath	PE	PE
Colour of conductor	black ●	grey ●
Diameter Ø conductor	20 mm	23 mm
Minimum order length	6 m	6 m
Max. order length	70 m	60 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Connection Elements for HVI long Conductor

Connection kit for HVI long Conductor Ø20 mm, installation inside the supporting tube



Connection elements for sealing the HVI long Conductor at both ends, for implementing the sealing end of the conductor in the supporting tube (head piece) and connection element for connecting other parts of the external lightning protection system or earth-termination system (incl. two heat-shrinkable sleeves).
These connection elements may be used with HVI long supporting tubes.

Type	HVI LO ASS RIV KF 20 V2A
Part No.	819 145
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection kit for HVI long Conductor Ø20 mm, installation outside the supporting tube



Connection elements for sealing the HVI long Conductor at both ends, for establishing the sealing end of the conductor outside the supporting tube (head piece for connection plate) and connection element for connecting to other parts of the external lightning protection system or earthing system (incl. two heat-shrinkable sleeves).
These connection elements may only be used for HVI long supporting tubes in combination with the fixing kit (Part No. 819 294).

Type	HVI LO ASS RAV KF 20 V2A
Part No.	819 146
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection element (head piece) for HVI long Conductor Ø20 mm, installation outside the supporting tube



Connection element for sealing the HVI long Conductor, for establishing the sealing end of the conductor on the outside of the supporting tube (head piece for connection plate), incl. one heat-shrinkable sleeve.

Type	AEA KO KF HVI 20 SW V2A
Part No.	819 197
Material	StSt
Connection	M12 thread
Diameter Ø connection element	23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

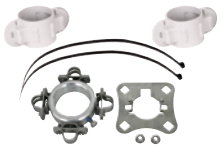
Connection element for HVI long Conductor Ø20 mm



Connection element for sealing the HVI long Conductor for establishing the sealing end of the conductor for other parts of the external lightning protection or earth-termination system (incl. one heat-shrinkable sleeve).

Type	AE BO10 KF HVI 20 SW V2A
Part No.	**819 199**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Diameter Ø connection element	23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Fixing kit for HVI long Conductor black / grey



Fixing kit for installation of the HVI long Conductor on HVI long supporting tubes, consisting of a connection plate (4x, including two self-locking nuts with serrated bearings) and a fixing ring with four slotted conductor holders (Ø20 mm) for the sealing end (including two cable ties with plastic holder halves).

Type	BFS D61 4X20
Part No.	**819 294**
Material	StSt / Al
Connection plate support	square hole 13 mm
Conductor holder	4 x 20 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

EB connection element for HVI long Conductor



For discharging the electric field of the HVI long Conductor in the sealing end range. pecial slotted design to electrically contact the semi-conductive sheath.

Type	PAE 20 23 AB11 V2A
Part No.	**410 229**
Material	StSt
Clamping range Ø	20 mm
Connection hole Ø	11 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Measuring point terminal



Measuring points for HVI check.

Type	MPK 18 V2A
Part No.	**819 649** NEW
Suitable for	HVI light plus and HVI
Material	StSt
Clamping range Ø	18-20 mm
PU	5 pc(s)

Accessories f. Connection Elements for HVI long Conductor

Connection Plate



Connection plate (4x, including two self-locking nuts with serrated bearings) for installing the HVI long Conductor on the supporting tube Ø50 mm (e.g. part no. 105 330, 105 331, 105 332, 105 333).

Type	AP SR D50 4AE HVI V2A
Part No.	**819 288**
Material	StSt
Support	square hole 13 mm
PU	1 pc(s)

Fixing bolt



Fixing bolt for spanning a 50 mm² aluminium cable (Part No. 840 050) to an air-termination rod (Ø22 / Ø16 mm) or a connection plate (e.g. Part No. 819 289 or 819 288).

Type	BB 1XB11GSM8 1XB23GSM12 AL
Part No.	**105 229**
Hole	1x B 11 mm, 1x B 23 mm
Material of bolt	Al
Wire end ferrule	50 mm²
Material of wire end ferrule	Cu/gal Sn
Standard	EN 62561-1
PU	10 pc(s)

Wire end ferrule



Wire end ferrule for securely fixing the aluminium cable with a cross-section of 50 mm² (Part No. 840 050).

1 pack = 10 pieces.

Type	AEH 50 L22 CUGALSN
Part No.	**444 050**
Material	Cu/gal Sn
Cross section	50 mm²
PU	1 PAK

Supporting tube collar for noise reduction



Supporting tube collar for routing and centring the internally installed HVI long Conductor, Ø20 mm and Ø23 mm in the supporting tube for noise reduction.

Consisting of:
7x plastic shield
7x black, heat-shrinkable sleeve

Type	SCHIRM HVI SCH RED
Part No.	**819 235**
Can be used for	HVI long black and HVI long grey
conductor diameter Ø	20 / 23 mm
Material	Plastic
PU	1 pc(s)

Cable tie



Cable ties for routing the various cables with the plastic holder half shells.

Type	KB UVB 460X7.6 SW	KB UVB 546X13 SW
Part No.	**819 998**	**819 999**
Length	460 mm	546 mm
Width	7.6 mm	13.2 mm
Material	Polyamide 6.6	Polyamide 6.6
Design	UV-resistant	UV-resistant
PU	100 pc(s)	50 pc(s)

Heat-shrinkable sleeve, grey



Type	WSS L120 GR
Part No.	**819 997**
Material	PE
Length (l)	120 mm
Inner diameter (d)	32 mm
Colour	grey
PU	10 pc(s)

Supporting tube for HVI Conductor, sub-roof installation

Supporting tube for HVI Conductor for on-site assembly, air-termination rod, Al, Ø22 / 16 / 10 mm.

Used with rafter bracket (Part No. 105 240) or metal roof bracket (Part No. 105 241).



With air-termination rod

Type SR D50 1950 FS22 16 10 ...	2500 DSH GFK AL
Part No.	**105 281**
Material of air-termination rod	Al
Length of air-termination rod	2500 mm
Material of supporting tube	GRP / Al
Length of supporting tube	1955 mm
Transport length	2500 mm
External diameter Ø	50 mm
Length of insulation clearance	1560 mm
Max. gust wind speed	140 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Supporting Tubes for HVI long Conductor

With air-termination tip

Supporting tube with internal sealing end and EB spring element.
Air-termination tip, StSt, Ø10 mm, length 1000 mm.



General technical data:	
Material of air-termination tip	StSt
Length of air-termination tip	1000 mm
Outside diameter Ø	50 mm
Length of insulating clearance	1535 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D50 ...	3200 FSP1000 IP HVI GFK AL	4700 FSP1000 IP HVI GFK AL
Part No.	**105 330**	**105 332**
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	3200 mm	4700 mm
Transport length	3200 mm	4700 mm
Max. free length with air-termination tip (wall mounting)	3500 mm	4000 mm
PU	1 pc(s)	1 pc(s)

Type SR D50 ...	3200 FSP1000 IP HVI GFK V2A	4700 FSP1000 IP HVI GFK V2A
Part No.	**105 314**	**105 316**
Material of supporting tube	GRP / StSt	GRP / StSt
Length of supporting tube	3200 mm	4700 mm
Transport length	3200 mm	4700 mm
Max. free length with air-termination tip (wall mounting)	3500 mm	4000 mm
PU	1 pc(s)	1 pc(s)

With air-termination rod

Supporting tube with internal sealing end and EB spring element.
Air-termination rod, Ø22/16/10 mm, length 2500 mm.



General technical data:	
Length of air-termination rod	2500 mm
Outside diameter Ø	50 mm
Length of insulating clearance	1535 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D50 ...	3200 FS22 2500 IP HVI GFK AL	4700 FS22 2500 IP HVI GFK AL
Part No.	**105 331**	**105 333**
Material of air-termination rod	Al	Al
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	3200 mm	4700 mm
Transport length	3200 mm	4700 mm
Max. free length with air-termination rod (wall mounting)	5000 mm	5500 mm
PU	1 pc(s)	1 pc(s)

Type SR D50 ...	3200 FS22 2500 IP HVI GFK V2A	4700 FS22 2500 IP HVI GFK V2A
Part No.	**105 315**	**105 317**
Material of air-termination rod	StSt	StSt
Material of supporting tube	GRP / StSt	GRP / StSt
Length of supporting tube	3200 mm	4700 mm
Transport length	3200 mm	4700 mm
Max. free length with air-termination rod (wall mounting)	5000 mm	5500 mm
PU	1 pc(s)	1 pc(s)

With air-termination tip and side outlet

Supporting tube with internal sealing end and EB spring element.
Air-termination tip, StSt, Ø10 mm, length 1000 mm.



General technical data:	
Material of air-termination tip	StSt
Length of air-termination tip	1000 mm
Outside diameter Ø	50 mm
Length of insulating clearance	1535 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D50 ...	3200 FS1000 IP SA HVI GFK AL	4700 FS1000 IP SA HVI GFK AL
Part No.	**105 325**	**105 327**
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	3200 mm	4700 mm
Transport length	3200 mm	4700 mm
PU	1 pc(s)	1 pc(s)

Type SR D50 ...	3200 FS1000 IP SA HVI GFK V2A	4700 FS1000 IP SA HVI GFK V2A
Part No.	**105 336**	**105 338**
Material of supporting tube	GRP / StSt	GRP / StSt
Length of supporting tube	3200 mm	4700 mm
Transport length	3200 mm	4700 mm
PU	1 pc(s)	1 pc(s)

With air-termination rod and side outlet

Supporting tube with internal sealing end and EB spring element.
Air-termination rod, Ø22/16/10 mm, length 2500 mm.



General technical data:	
Length of air-termination rod	2500 mm
Outside diameter Ø	50 mm
Length of insulating clearance	1535 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D50 ...	3200 FS2500 IP SA HVI GFK AL	4700 FS2500 IP SA HVI GFK AL
Part No.	**105 326**	**105 328**
Material of air-termination rod	Al	Al
Material of supporting tube	GRP / Al	GRP / Al
Length of supporting tube	3200 mm	4700 mm
Transport length	3200 mm	4700 mm
PU	1 pc(s)	1 pc(s)

Type SR D50 ...	3200 FS2500 IP SA HVI GFK V2A	4700 FS2500 IP SA HVI GFK V2A
Part No.	**105 337**	**105 339**
Material of air-termination rod	StSt	StSt
Material of supporting tube	GRP / StSt	GRP / StSt
Length of supporting tube	3200 mm	4700 mm
Transport length	3200 mm	4700 mm
PU	1 pc(s)	1 pc(s)

Accessories for Supporting Tubes for HVI long Conductor

Sideways air-termination tips for supporting tubes

Fixing kit for installing lateral/horizontal air-termination tips to HVI long supporting tubes and HVI power supporting tubes. Consisting of four air-termination tips and a fixing ring.

Note: The additional wind load stress on the air-termination system resulting from the side-mounted air-termination tips must be taken into account!



Type BFRS D80 B35 ...	4FSP 10 1030 AL	4FSP 10 1030 V2A
Part No.	**819 185**	**819 186**
Length of air-termination tip	1030 mm	1030 mm
Material of air-termination tip	Al	StSt
Material of fixing ring	Al	StSt
PU	1 pc(s)	1 pc(s)

Tripod for Supporting Tubes WITHOUT / WITH Side Outlet

Stands for holding HVI supporting tubes for internally/externally routed HVI Conductors in/on the supporting tube, with double clamp for connection of 2x Rd 8–10 mm. Adjustable to the roof slope up to max. 10° using a variable fixing on the base holder.

The stackable concrete bases, the plastic base plates and the base holder set for holding additional concrete bases are each available separately in the accessories.

Tripod small

*) Only with adapter set part no. 107 399.



Type	DBS KB D50 RA680 V2A
Part No.	**107 390**
Material of tripod	StSt
Support	50 and 40*) mm
Radius	680 mm
Space required for tripod	1175 x 1020 mm
PU	1 pc(s)

Tripod large

*) Only with adapter set part no. 107 399.



Type	DBS KB D50 RA1330 V2A
Part No.	**107 391**
Material of tripod	StSt
Support	50 and 40*) mm
Radius	1330 mm
Space required for tripod	2300 x 1995 mm
PU	1 pc(s)

Four-legged stand, small

*) Only with adapter set part no. 107 399.



Type	VBS KB D50 RA680 V2A
Part No.	**107 490**
Material of tripod	StSt
Support	50 and 40*) mm
Radius	680 mm
Space required for tripod	960 x 960 mm
PU	1 pc(s)

Four-legged stand, large

*) Only with adapter set part no. 107 399.



Type	VBS KB D50 RA1330 V2A
Part No.	**107 491**
Material of tripod	StSt
Support	50 and 40*) mm
Radius	1330 mm
Space required for tripod	1880 x 1880 mm
PU	1 pc(s)

Tripod for Supporting Tubes WITHOUT Side Outlet

Tripod, small, HDG steel

Suitable for the inner routing of the HVI Conductor.



Type	DBS KB D40.50 RA620 STTZN	DBS KB D40.50 RA220 STTZN
Part No.	**105 351**	**105 357**
Material of tripod	**St/tZn**	**St/tZn**
Support	40 / 50 mm	40 / 50 mm
Radius	620 mm	220 mm
Number of concrete bases	3-12 blocks, 17 kg each	3-12 blocks, 17 kg each
Space required for tripod	1300 x 1450 mm	668 x 718 mm
PU	1 pc(s)	1 pc(s)

Tripod, large, HDG steel

Suitable for the outer routing of the HVI Conductor.

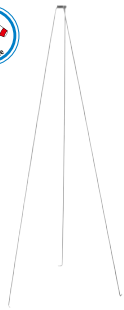


Type	DBS KB D40.50 RA1435 STTZN
Part No.	**105 201**
Material of tripod	**St/tZn**
Support	40 / 50 mm
Radius	1435 mm
Number of concrete bases	3-12 blocks 17 kg each
Space required for tripod	2520 x 2860 mm
PU	1 pc(s)

Accessories for Tripod for Supporting Tubes without Side Outlet

Bracing

Brace, 3x with clamp for pipe, Ø50 mm for fixing to the tripod (part no. 105 201). Brace suitable for supporting tubes with a length of 4700 mm (e.g. part nos 105 332, 105 316, 105 333, 105 317, 105 322, 105 323, 105 565, 105 575).



Type	ABST 3F D50 2900 V2A
Part No.	**105 601**
Material	StSt
Brace length	2910 mm
Ø clamp	50 mm
PU	1 pc(s)

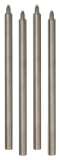
Accessories for Tripod for Supporting Tubes without Side Outlet

Set of base support rods for tripods



Type	SOH 3 200 V2A
Part No.	**107 396**
For tripod	Part No. 107 390 / 107 391
Number of concrete bases	1 to 2
Material	StSt
Diameter	16 mm
Length	200 mm
PU	1 pc(s)

Set of base support rods for four-legged stands



Type	SOH 4 200 V2A
Part No.	**107 496**
For four-legged stand	Part No. 107 490 / 107 491
Number of concrete bases	1 to 2
Material	StSt
Diameter	16 mm
Length	200 mm
PU	1 pc(s)

Adapter set

Adapter set for reducing the diameter from 50 mm to 40 mm for tripods and four-legged stands.



Type	RED D40 V2A DBS VBS
Part No.	**107 399**
For tripod	Part No. 107 390 / 107 391
For four-legged stand	Part No. 107 490 / 107 491
Material	StSt
PU	1 pc(s)

Concrete base

With fixing wedge, stackable, for erecting tripods and air-termination rods Ø16 mm, chamfered or tapered, DEHNiso spacer Ø16 mm or conductor holder (Part No. 253 279).



Type	BES 17KG KT16 D337 SET
Part No.	**102 010**
Weight	17 kg
Support	with fixing wedge Ø16 mm
Diameter Ø	337 mm
Material	**concrete (C45/55)**
Material of wedge / adapter	StSt
PU	54 pc(s)

Base plate

To protect the roof sheeting under the concrete base. For concrete bases (Part Nos. 102 010, 102 002).



Type	ULP KS D370 SW
Part No.	**102 050**
Outside diameter Ø	370 mm
Inside diameter Ø	360 mm
Material	**EVA**
Colour	black ●
PU	1 pc(s)

Fixing Elements for Supporting Tubes

Fixing clamp with tensioning strap
For fixing supporting tubes to structural elements, e.g. antenna masts.



Type	BS D50 SB50.300 V2A
Part No.	**105 360**
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
PU	1 pc(s)

Fixing clamp with tensioning strap
With additional spacer for adjusting the sector antenna supports to the mast.



Type BS D50 ...	DS30 SB50.300 V2A
Part No.	**105 361**
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
Length of spacer	30 mm
PU	1 pc(s)

Fixing clamp with tensioning strap
With additional long spacer for adjusting sector antenna supports to the mast.



Type BS D50 ...	DS90 SB50.300 V2A
Part No.	**105 362**
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
Length of spacer	95 mm
PU	1 pc(s)

Wall mounting bracket for horizontal mounting, flat
For fixing supporting tubes onto the structure to be protected or the wall.



Type	WB D50 WA V2A
Part No.	**105 340**
Material	StSt
Clamping range for supporting tube	50 mm
Distance from wall / corner	80 mm
Dimensions of fixing	320 mm
Fixing	[8x] Ø5.1 / [4x] 11 x 20 mm
PU	1 pc(s)

Wall mounting bracket for horizontal mounting, corner
For fixing supporting tubes onto the structure to be protected or the wall.



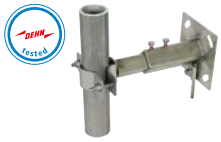
Type	EB D50 WA V2A
Part No.	**105 341**
Material	StSt
Clamping range for supporting tube	50 mm
Distance from wall / corner	80 mm
Dimensions of fixing	152 mm
Fixing	[8x] Ø5.1 / [4x] 11 x 20 mm
PU	1 pc(s)

Wall mounting bracket for vertical mounting
For attaching supporting tubes or air-termination rods D40 / D50 to roof-mounted structures or walls.



Type WB D40.50 ...	SE WA46 V2A	SE WA110 V2A
Part No.	**105 342**	**105 348**
Material of bracket	StSt	StSt
Fixing	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm
Clamping range for supporting tube	40-50 mm	40-50 mm
Distance from wall	46 mm	110 mm
PU	1 pc(s)	1 pc(s)

Wall mounting bracket, adjustable from 150-200 mm
For attaching supporting tubes or air-termination rods D40 / D50, with double clamp for connecting 2x Rd 8-10 mm.



Type WB D40.50 ...	V150.200 V2A
Part No.	**105 344**
Material of bracket	StSt
Clamping range for supporting tube	40-50 mm
Distance from wall	150-200 mm
Dimensions of plate	120 x 120 x 4 mm
Fixing	[4x] 12 x 26 mm
Standard	EN 62561-1
PU	1 pc(s)

Wall mounting bracket, adjustable from 230-1300 mm
For fixing supporting tubes or air-termination rods D40 / D50.



General technical data:	
Material of bracket	St/tZn / StSt
Clamping range for supporting tube	40-50 mm
Dimensions of plate	120 x 120 x 4 mm
Fixing	[4x] 12 x 26 mm

Type WB D40.50 ...	V230.400 STTZN V2A	V400.700 STTZN V2A
Part No.	**105 347**	**105 343**
Distance from wall	230-400 mm	400-700 mm
PU	1 pc(s)	1 pc(s)

Type WB D40.50 ...	V700.1300 STTZN V2A
Part No.	**105 349**
Distance from wall	700-1300 mm
PU	1 pc(s)

Railing clamp
For pipes.



Type	BS D40.50 D48.60 V2A
Part No.	**105 354**
Material	StSt
Clamping range for pipe Ø	48-60 mm (1 1/2-2")
Clamping range for supporting tube	40-50 mm
PU	5 pc(s)

Railing clamp
For pipes.



Type	BS D40.50 D70.90 V2A
Part No.	**105 355**
Material	StSt
Clamping range for pipe Ø	70-90 mm (2 1/4-3")
Clamping range for supporting tube	40-50 mm
PU	1 pc(s)

Railing clamp
For square hollow profiles.



Type BS D40.50 ...	4K20.50 V2A	4K60.120 V2A
Part No.	**105 356**	**105 376**
Material	StSt	StSt
Clamping range for square profile	20 x 20 to 50 x 50 mm	60 x 120 mm
Clamping range for supporting tube	40-50 mm	40-50 mm
PU	5 pc(s)	1 pc(s)

Mast holder, heavy version

For erecting air-termination systems on installations, such as biogas plants

The heavy version of the mast holder enables the mounting of air-termination masts with a diameter of Ø55–100 mm.



Type	WB D55.100 SE WA150 STTZN
Part No.	**105 352** NEW
Material	**HDG steel**
Fixing	[4x] Ø14 mm
Distance from wall	106 mm
Clamping range (Ø mast)	55-100 mm
Material of threaded rod / nut / washer	StSt
PU	1 pc(s)

Spacers for Omnidirectional Antennas

Spacer for DEHNiso Combi supporting tubes with HVI Conductor installed inside and/or outside the supporting tube, mounted on the antenna mast.



General technical data:	
Material of support / square profile	**St/tZn**
Clamping range of supporting tube	50 mm
Length of spacer	1000 mm

Type AH D50 1000 ...	D55.100 STTZN	D100.150 STTZN
Part No.	**105 363**	**105 364**
Clamping range (Ø mast)	55-100 mm	100-150 mm
Dimensions (w1 x h1 x d1)	140 x 120 x 55 mm	190 x 140 x 60 mm
PU	1 pc(s)	1 pc(s)

Type AH D50 1000 ...	D150.190 STTZN
Part No.	**105 365**
Clamping range (Ø mast)	150-190 mm
Dimensions (w1 x h1 x d1)	230 x 180 x 70 mm
PU	1 pc(s)

Spacers for omnidirectional antennas with special lengths or any other diameters are available upon request!

Accessories for HVI Conductor and HVI long Conductor

Roof conductor holders for flat roofs
For fixing round conductors and strips on flat roofs with one conductor support type FB.



Type	DLH FB 8 LO 100X100X70
Part No.	**253 015**
Conductor routing	loose
Material of conductor holder	**plastic**
Conductor support Rd	8 mm
Block	**concrete (C35/45)**
Weight	1 kg
PU	10 pc(s)

Adapter for installing the HVI light plus Conductor / HVI Conductor on flat roofs
For snapping on to the roof conductor holder type FB (part no. 253 015) and KF (part no. 253 030).



Type	RLA 20 FB K SW	RLA 23 FB K SW
Part No.	**253 026**	**253 027**
Material	**plastic**	**plastic**
Colour	black ●	black ●
Conductor support Rd	20-21 mm	23 mm
PU	50 pc(s)	50 pc(s)

Roof conductor holder
For flat roofs, weight approx. 4.7 kg
Conductor holder, concrete block and base plate, for routing of the HVI light Conductor, HVI light plus Conductor, HVI Conductor on flat roofs.



Type DLH ZS 20 23 V2A ...	4.7KG BES180 GP300 K
Part No.	**253 229**
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Total weight	approx. 4.7 kg
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Roof conductor holder
For flat roofs, weight approx. 8.6 kg
Conductor holder, concrete base and plastic base plate, for routing of the HVI light Conductor, HVI light plus Conductor, HVI Conductor on flat roofs.



Type DLH ZS 20 23 V2A ...	8.5KG KT D240 ULP
Part No.	**253 239**
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Total weight	approx. 8.6 kg
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Conductor holder

Conductor holder with slotted saddle clamp for HVI light Conductor, HVI light plus Conductor, HVI Conductor for fixing into a base plate (Part No. 253 300) with concrete block (Part No. 253 301).



Type	LH ZS 20 23 DS10 L75 V2A
Part No.	**253 289**
Material	StSt
Conductor support Rd	20-23 mm
Height of conductor holder	87 mm
Bolt	Ø10 mm (push-fit)
PU	1 pc(s)

Concrete block

For stabilising the base plate.



Type BES 4.6KG SB10 ...	180X180X70
Part No.	**253 301**
Material	**concrete (C35/45)**
Weight	4.6 kg
Dimensions	180 x 180 x 70 mm
PU	24 pc(s)

Base plate

Base plate to hold the spacer bar (Part Nos. 253 315, 253 325) and conductor holder (Part No. 253 289) and to protect the roof sheeting under the concrete block (Part No. 253 301).



Type	GP B10 H60 D300 KS GR
Part No.	**253 300**
Diameter Ø	300 mm
Diameter Ø of lock bush	10 mm
Height	60 mm
Material	**plastic**
Colour	grey ●
PU	24 pc(s)

Conductor holder

Conductor holder with slotted saddle clamp for HVI light Conductor, HVI light plus Conductor HVI Conductor for fixing into a concrete base with wedge (Part No. 102 075).



Type LH ZS 20 23 ...	KT D16 L85 V2A
Part No.	**253 279**
Material	StSt
Conductor support Rd	20-23 mm
Height of conductor holder	125 mm
Bolt	Ø16 mm (wedge-fit)
PU	1 pc(s)

Concrete base

With fixing wedge, for air-termination tips Ø10 mm, length 1000 mm or DEHNiso spacers Ø16 mm, length up to 675 mm (distance 0.8 m) or conductor holder (Part No. 253 279).



Type BES 8.5KG ...	KT10 16 D240 SET
Part No.	**102 075**
Total weight	8.5 kg
Diameter Ø	240 mm
Material	**concrete (C45/55)**
Material of wedge / adapter	StSt
PU	120 pc(s)

Base plate

To protect the roof sheeting under the concrete base.
For concrete bases (Part No. 102 075, 102 003).



Type	ULP KS D280 SW
Part No.	**102 060**
Outside diameter Ø	280 mm
Inside diameter Ø	270 mm
Material	**EVA**
Colour	black ●
PU	1 pc(s)

EB clamp

For connecting the special sheath of the HVI Conductor to the equipotential bonding.



Type	PAK 20 AQ4 95 STTZN
Part No.	**405 020**
Material of cage clamp	**St/tZn**
Clamping range Ø	20 mm
Terminal cross-section	4-95 mm²
PU	1 pc(s)

Spacer with EB element for HVI Conductor (length of variable sealing end 350-900 mm)

Spacer for establishing the variable sealing end of the HVI Conductor.
With MV clamp for connection to the equipotential bonding (Rd 16 mm / Rd 8-10 mm).
Concrete base (Part No. 102 010, weight 17 kg) and base plate (Part No. 102 050) must be ordered separately.



Type DIDH ...	PAE 20 D16 1270 AL V2A
Part No.	**105 461**
Material of spacer	Al
Lenght of spacer	1270 mm
Conductor support Rd	20 mm
Material of conductor holder	StSt
Length of variable sealing end	350-900 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Variable tripod with EB element for HVI Conductor (length of variable sealing end 900-1500 mm)



Tripod (hinged) with variable spacer for establishing the sealing end of the HVI Conductor.
With UNI earthing clamp for connecting 1x Rd 8-10 mm and 1x conductor 4-50 mm².
Adjustable to the roof inclination up to max. 10°.
The **three concrete bases** (Part No. 102 075, weight 8.5 kg) and the **base plate** (Part No. 102 060) must be **ordered separately**.

Type V DBS RA320 ...	PAE 20 V 600 1180 V2A
Part No.	**105 469**
Material of tripod	StSt
Radius	320 mm
Number of concrete bases	3 (8.5 kg each)
Conductor support Rd	20 mm
Adjustment range of spacer	600-1180 mm
Length of variable sealing end	900-1500 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Spacer for the HVI Conductor / HVI light plus Conductor



Spacer for additional mechanical fixing in the variable sealing end area.
The spacer is installed with **two** concrete bases (part no. 102 010; weight: 17 kg).
The **concrete base** and the **plastic base plate** (part no. 102 050) must be **ordered separately**.

Type DH ZS 20 ...	D16 1270 GFK PA
Part No.	**106 815**
Material of spacer	**GRP**
Material of conductor holder / adapter	**PA**
Number of concrete bases	2 (17 kg each)
Length	1270 mm
Insulating clearance	1245 mm
Conductor support Rd	20-21 mm
Thread	M8
PU	1 pc(s)

Concrete base



With fixing wedge, stackable, for erecting tripods and air-termination rods Ø16 mm, chamfered or tapered, DEHNiso spacer Ø16 mm or conductor holder (Part No. 253 279).

Type	BES 17KG KT16 D337 SET
Part No.	**102 010**
Weight	17 kg
Support	with fixing wedge Ø16 mm
Diameter Ø	337 mm
Material	**concrete (C45/55)**
Material of wedge / adapter	StSt
PU	54 pc(s)

Base plate



To protect the roof sheeting under the concrete base. For concrete bases (Part Nos. 102 010, 102 002).

Type	ULP KS D370 SW
Part No.	**102 050**
Outside diameter Ø	370 mm
Inside diameter Ø	360 mm
Material	**EVA**
Colour	black ●
PU	1 pc(s)

Roof conductor holder



Roof conductor holder with prepunched points for bending and hooking in the roof tile and for bolting to the roof battens, for routing the HVI Conductor, HVI light plus Conductor, in gable roof surfaces.

Type DLH ZS ...	20 23 H55 L205 V2A
Part No.	**202 829**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Length of brace	205 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Roof conductor holders for roofs with round standing seam



Roof conductor holder with slotted saddle clamp for HVI light Conductor, HVI light plus Conductor HVI Conductor for fixing to metal roofs with round standing seam.

Type	DLH RSF ZS 20 23 V2A
Part No.	**202 850**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	Ø20-25 mm
Conductor support Rd	20-23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder for roofs with clamping seam (e.g. RIB-ROOF Speed 500 from Zambelli)



Roof conductor holder with slotted saddle clamp for HVI light Conductor, HVI light plus Conductor HVI Conductor for fixing to metal roofs with clamping seam.

Type	DLH KF ZS 20 23 V2A
Part No.	**202 851**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	approx. 18 / 22 mm
Conductor support Rd	20-23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder for roofs with standing seam



Roof conductor holder with slotted saddle clamp for HVI light Conductor, HVI light plus Conductor HVI Conductor for fixing to metal roofs with standing seam.

Type	DLH SF ZS 20 23 V2A
Part No.	**202 852**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	0.7-8 mm
Conductor support Rd	20-23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder with connection lug

Roof conductor holder with slotted saddle clamp for HVI light Conductors, HVI Conductors and Z-shaped connection lug for riveting or screwing to metal roofs.



Type	DLH AL ZS 20 23 V2A
Part No.	**202 853**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Conductor support Rd	20-23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder with tensioning strap

With conductor holder made of PA.



Type LH ZS ...	20 SB50.300 PA V2A	23 SB50.300 PA V2A
Part No.	**275 330**	**275 333**
Material of conductor holder	**PA**	**PA**
Conductor support Rd	20-21 mm	23 mm
Tensioning range Ø pipe	50-300 mm	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Conductor holder with tensioning strap

With metal conductor holder.



Type LH ZS ...	20 23 SB50.300 V2A
Part No.	**275 320**
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Tensioning range Ø pipe	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Conductor holder for fixing with a tensioning strap

For fixing the HVI Conductor to pipes, e.g. with pipe clamp (Part No. 106 323).



Type LH ZS ...	20 23 SBH 25X0.3 V2A
Part No.	**275 319**
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

Pipe clamp

For fixing (clamping) conductor holders (e.g. Part No. 275 319).



Type	BRS SPB25 50.300 V2A
Part No.	**106 323**
Material of head / strap	StSt
Clamping range Ø	50-300 mm
Dimensions of strap	1100 x 25 x 0.3 mm
Material of screw	StSt
PU	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901) in case of larger pipe diameters.



Type	SPK 25X0.3 V2A
Part No.	**106 324**
Material of head	StSt
For strap (w x d)	25 x 0.3 mm
Screw	M8 x 20 mm
Material of screw	StSt
PU	20 pc(s)

Tensioning strap



Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Strap dimensions (w x d)	25 x 0.3 mm
Length	100 m
PU	1 pc(s)

Conductor holder

With thread.
For wall mounting with two-screw clamp (not for use in the sealing end range).



Type	LH ZS 20 23 GM8 V2A	LH ZS 20 23 GM6 V2A
Part No.	**275 250**	**275 251**
Material of conductor holder	StSt	StSt
Conductor support Rd	20-23 mm	20-23 mm
Thread	M8	M6
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)	25 pc(s)

Conductor holder

With plastic base.
For wall mounting with two-screw clamp (not for use in the sealing end range).



Type	LH ZS 20 23 KS H10 V2A
Part No.	**275 259**
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Thread	M8
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder

With slotted hole.
Wall-mounted conductor holder with two-screw clamp (not for use in the sealing end range).



Type	LH ZS 20 23 B5.5X10 V2A
Part No.	**275 252**
Material of conductor holder	StSt
Conductor support Rd	20-23 mm
Fixing hole	5.5 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder for the HVI Conductor / HVI light plus Conductor

For wall mounting and for mounting in the sealing end range.



Type LH ZS ...	20 H19 IGM8 GR PA	23 H19 IGM8 GR PA
Part No.	**275 220**	**275 225**
Material of conductor holder	**PA**	**PA**
Conductor support Rd	20-21 mm	23 mm
Female thread	M8	M8
Fixing hole	6.5 mm	6.5 mm
Screw	M6 x 13 mm	M6 x 13 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)	1 pc(s)

Conductor holder for the HVI Conductor / HVI light plus Conductor

For wall mounting with two-screw clamp (not for use in the sealing end range).



Type LH ZS ...	20 H10 B6.5X16 V2A
Part No.	**275 229**
Material of conductor holder	StSt
Conductor support Rd	20-21 mm
Fixing hole	6.5 x 16 mm
Screw	M6 x 14 mm
PU	50 pc(s)

Conductor holder for HVI Conductor

For wall mounting with two-screw clamp (not for use in the sealing end range).



Type LH ZS ...	23 H10 B6.5X16 V2A
Part No.	**275 239**
Material of conductor holder	StSt
Conductor support Rd	23 mm
Fixing hole	6.5 x 16 mm
Screw	M6 x 14 mm
Standard	EN 62561-4
PU	1 pc(s)

Air-termination tip adapter

Reducing adapter for Ø22-mm fixtures for the central mounting of Ø10/16-mm air-termination rods on HVI supporting tubes.



Type	AD 22 16 L45 AL	AD 22 10 L45 AL
Part No.	**819 895** NEW	**819 898**
Material	Al	Al
Reduction (Ø)	22/16 mm	22/10 mm
PU	10 pc(s)	10 pc(s)

Type	AD 22 16 L45 V2A	AD 22 10 L45 V2A
Part No.	**819 896**	**819 897**
Material	NIRO	NIRO
Reduction (Ø)	22/16 mm	22/10 mm
PU	10 pc(s)	10 pc(s)

Sign

Front in German
ACHTUNG! Getrennter Blitzschutz mit HVI Leitung

Back in English
ATTENTION! Separated Lightning Protection with HVI conductor system



Type HWS 300X210 AGBS ...	HVI DE EN K
Part No.	**480 598**
Material	**plastic**
Dimensions (l x w x d)	300 x 210 x 1 mm
Fixing	[4x] Ø6.5 mm
Hole distance	270 / 180 mm
PU	1 pc(s)

Sign

Front in German
ACHTUNG!
Potentialausgleich

Back in English
ATTENTION!
Equipotential Bonding

Hole distance suitable for two-screw clamp (Part No. 480 291).



Type	HWS 70X30 APA DE EN K
Part No.	**480 599**
Material	**plastic**
Dimensions (l x w x d)	70 x 30 x 1 mm
Fixing	[2x] Ø6.5 mm
Hole distance	38 mm
PU	10 pc(s)

Conductor Holders for HVI Conductor in Ex Areas

The HVI Conductor is suitable for use in explosion hazardous areas of Ex zone 1 (gases, vapours, mists) as well as Ex zone 21 (dusts). The special installation conditions safely prevent electric sparks to neighbouring metal parts when lightning current flows through the HVI Conductor.

The HVI Conductor has to be installed in explosion hazardous areas in accordance with the installation instructions.

HVI Ex W70 holder

For fixing to metal structural parts (façades) in Ex zones 1 and 21.



Type	LH ZS 20 EX W70 BP V2A
Part No.	**275 440**
Material	StSt
Conductor support Rd	20 mm
Distance from wall	70 mm
Fixing	[4x] Ø5.1 / [2x] 7 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI Ex W200 holder

For fixing to metal structural parts (façades) in Ex zones 1 and 21.



Type LH ZS ...	20 EX W200 BP V2A
Part No.	**275 441**
Material	StSt
Conductor support Rd	20 mm
Distance from wall	200 mm
Fixing	[4x] Ø5.1 / [2x] 7 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI Ex busbar 500

For installing the HVI Conductor with conductor holders HVI Ex W70 holder (Part No. 275 440) on a non-conductive structure, e.g. stone, wood.



Type	VS EX 500 V2A
Part No.	**275 498**
Material of brace	StSt
Fixing	[4x] Ø5.5 / [2x] 7 x 10 mm
Dimension (l x w x d)	450 x 30 x 3 mm
PU	10 pc(s)

HVI Ex P70 holder

For fixing to pipes, e.g. with pipe clamp (Part No. 106 323) in Ex zones 1 and 21.



Type	LH ZS 20 EX P70 SBB V2A
Part No.	**275 444**
Material	StSt
Conductor support Rd	20 mm
Distance from wall	70 mm
Clamping range of tube	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI Ex P200 holder

For fixing to pipes, e.g. with pipe clamp (Part No. 106 323) in Ex zones 1 and 21.



Type LH ZS ...	20 EX P200 SBB V2A
Part No.	**275 442**
Material	StSt
Conductor support Rd	20 mm
Distance from wall	200 mm
Clamping range of tube	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

Accessories for Conductor Holders for HVI Conductor in Ex Areas

Pipe clamp

For fixing (clamping) the HVI Ex P200 holder (Part No. 275 442) to pipes.



Type	BRS SPB25 50.300 V2A
Part No.	**106 323**
Material of head / strap	StSt
Clamping range Ø	50-300 mm
Dimensions of strap	1100 x 25 x 0.3 mm
Screw	M8 x 20 mm
Material of screw	StSt
PU	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901) in case of larger pipe diameters.



Type	SPK 25X0.3 V2A
Part No.	**106 324**
Material of head	StSt
For strap (w x d)	25 x 0.3 mm
Screw	M8 x 20 mm
Material of screw	StSt
PU	20 pc(s)

Tensioning strap



Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Strap dimensions (w x d)	25 x 0.3 mm
Length	100 m
PU	1 pc(s)

Stripping tool for the HVI light Conductor / HVI light plus Conductor / HVI Conductor

Tool for stripping the semi-conductive sheath and the PE insulation of the HVI light Conductor, HVI Conductor (outer diameter 20 mm).

- The tool consists of a handle and various interchangeable stripping inserts
- The stripping length of the HVI light Conductor, HVI light plus Conductor, HVI Conductor is adjustable in steps of 0.2 mm (lock points) using the knob in the handle. The dial on the handle shows the length that is set.

Operation

- Position the stripping insert at the cut-off end of the conductor.
- Turn clockwise applying light pressure, the cutting operation/ stripping occurs through the tool.

The interchangeable stripping insert can be attached without tools via the bayonet coupling.

HVI strip 20

Version for the HVI light conductor, HVI light plus Conductor and HVI Conductor (handle + stripping insert).



Type HVI ...	STRIP 20
Part No.	597 220
Diameter Ø conductor	20 mm (remove the grey sheath beforehand if necessary)
Material of moulded part	plastic
Material of blade	StSt
PU	1 pc(s)

HVI head 20

Version for HVI light Conductor, HVI light plus Conductor and HVI Conductor (stripping insert).



Type HVI ...	HEAD 20
Part No.	597 120
Diameter Ø conductor	20 mm (remove the grey sheath beforehand if necessary)
Material of moulded part	plastic
Material of blade	StSt
PU	1 pc(s)

Accessories for Stripping tool for the HVI light Conductor / HVI light plus Conductor / HVI Conductor

Spare blades for stripping tool HVI head 20

1 pack = 4 pieces



Type	EK HVI HEAD 20
Part No.	597 101
Material	StSt
PU	1 PAK

HVI head holder

Adapter with bayonet coupling for attaching the HVI head cutting head (pre-set stripping length 35 mm). Adapter can be used in a standard three-jaw chuck (Ø10 mm), e.g. with cordless screwdrivers.



Type	HVI HH
Part No.	597 139
Material	Plastic / brass
PU	1 pc(s)

Stripping tool for the HVI light Conductor / HVI light plus Conductor / HVI Conductor

Tool for stripping the additional grey sheath of the HVI light Conductor and HVI Conductor. DEHNhelix consists of a handle and an exchangeable bracket (depending on the conductor diameter).

Stripping tool





Type	AW DEHNHELIX	HVI TOOL CKS
Part No.	597 230	597 231 NEW
Diameter Ø conductor	23 mm	8-35 mm
Material of moulded part	plastic	Plastic
Material of blade	StSt	StSt
Colour	black ●	black ● / red ●
PU	1 pc(s)	1 pc(s)

Accessories for Stripping tool for the HVI light Conductor / HVI light plus Conductor / HVI Conductor

Spare blade for stripping tool



Type	EK AW DEHNHELIX
Part No.	597 130
Material	StSt
PU	1 pc(s)

Cable shears for HVI Conductors

Cable shears for easily cutting the HVI light Conductor, HVI Conductor (outer diameter 20 / 23 mm), HVI power Conductor (outer diameter 27 mm) and CUI Conductor to length.
The special design of the cable shears also allows precise cutting of stranded conductors, making it easier to attach connection elements.



Type	HVI CUTTER 32
Part No.	597 032
Diameter Ø conductor	up to 32 mm
Material of blades	tool steel (CR-Moly (SCM440))
Material of handles	carbon steel (SS400)
Length	600 mm
Colour of handles	red ● (similar to RAL 3020)
PU	1 pc(s)

Cutting head

Cutting head for mounting the testable, insulated connection elements on high-voltage-resistant, insulated down conductors.



Type	ISO HEAD 23
Part No.	597 126 NEW
Diameter Ø conductor	23 mm
Material of moulded part	Al
Material of blade	Steel alloy
Colour	red ●
Dimensions	approx. 105 x 40 mm
PU	1 pc(s)

Max. Gust wind speeds in km/h for air-termination systems.

Tripod mounting – support tube

Cable in the support tube

Part No.	Height [mm]	Number of concrete bases	Installation type outside | inside	Tripod, small, StSt (V2A), Part No. 107 390				Tripod, large, StSt (V2A), Part No. 107 391				Four-legged stand, small, StSt (V2A), Part No. 107 490				Four-legged stand, large, StSt (V2A), Part No. 107 491			
				3x	6x	9x	12x	3x	6x	9x	12x	4x	8x	12x	16x	4x	8x	12x	16x
Al 105 325	4200 3.2+1 m	0	1	101	132	168	198	129	177	237	237	129	183	237	237	174	237	237	237
		1	0-1	–	112	137	159	112	147	181	209	111	149	187	216	144	201	230	230
		2-4	0-1	–	103	121	137	101	132	159	185	110	132	163	190	132	179	203	203
Al 105 330	4200 3.2+1 m	0	1	No internal installation possible															
		1	0-1	–	112	137	159	112	147	181	209	111	149	187	216	144	201	230	230
		2-4	0-1	–	103	121	137	101	132	159	185	110	132	163	190	132	179	203	203
Al 105 326	5700 3.2+2.5 m	0	1	–	112	137	159	112	147	184	189	110	149	189	189	144	189	189	189
		1	0-1	–	103	121	137	101	129	155	174	100	132	159	174	129	174	174	174
		2-4	0-1	–	95	112	124	95	120	140	149	93	120	144	149	120	149	149	149
Al 105 331	5700 3.2+2.5 m	0	1	No internal installation possible															
		1	0-1	–	103	121	137	101	129	155	174	100	132	159	174	129	174	174	174
		2-4	0-1	–	95	112	124	95	120	140	149	93	120	144	149	120	149	149	149
Al 105 327	5700 4.7+1 m	0	1	–	98	112	129	97	124	147	174	93	124	150	155	124	166	200	200
		1	0-1	–	–	99	110	–	105	124	137	–	105	124	129	105	137	149	149
		2-4	0-1	–	–	–	100	–	96	110	124	–	93	110	116	97	121	135	135
Al 105 332	5700 4.7+1 m	0	1	No internal installation possible															
		1	0-1	–	–	99	110	–	105	124	137	–	105	124	129	105	137	149	149
		2-4	0-1	–	–	–	100	–	96	110	124	–	93	110	116	97	121	135	135
Al 105 328	7200 4.7+2.5 m	0	1	–	–	104	116	–	110	132	149	–	110	132	137	112	144	155	155
		1	0-1	–	–	93	103	–	100	112	129	–	99	116	120	100	124	137	137
		2-4	0-1	–	–	–	93	–	93	105	117	–	–	105	108	93	116	126	126
Al 105 333	7200 4.7+2.5 m	0	1	No internal installation possible															
		1	0-1	–	–	93	103	–	100	112	129	–	99	116	120	100	124	137	137
		2-4	0-1	–	–	–	93	–	93	105	117	–	–	105	108	93	116	126	126
StSt 105 336	4200 3.2+1 m	0	1	101	132	165	194	129	175	231	231	128	180	231	231	174	231	231	231
		1	0-1	–	112	132	155	110	144	179	206	110	147	184	214	144	199	226	226
		2-4	0-1	–	101	120	137	101	129	155	183	100	129	159	187	129	177	198	198
StSt 105 314	4200 3.2+1 m	0	1	No internal installation possible															
		1	0-1	–	112	132	155	110	144	179	206	110	147	184	214	144	199	226	226
		2-4	0-1	–	101	120	135	101	129	155	183	100	129	159	187	129	177	198	198
StSt 105 338	5700 4.7+1 m	0	1	–	98	112	129	99	121	144	172	95	121	147	159	124	166	207	207
		1	0-1	–	–	98	110	–	105	121	137	–	104	121	132	105	135	155	155
		2-4	0-1	–	–	–	98	–	95	110	124	–	93	110	117	97	122	135	135
StSt 105 316	5700 4.7+1 m	0	1	No internal installation possible															
		1	0-1	–	–	98	110	–	105	121	137	–	104	121	132	105	135	155	155
		2-4	0-1	–	–	–	98	–	95	110	124	–	93	110	117	97	122	135	135
StSt 105 337	5700 3.2+2.5 m	0	1	–	112	135	155	112	144	181	187	110	147	187	187	144	187	187	187
		1	0-1	–	101	120	137	101	129	155	168	100	129	159	168	129	168	168	168
		2-4	0-1	–	93	111	124	95	120	140	149	93	120	140	149	122	149	149	149
StSt 105 315	5700 3.2+2.5 m	0	1	No internal installation possible															
		1	0-1	–	101	120	137	101	129	155	168	100	129	159	168	129	168	168	168
		2-4	0-1	–	93	111	124	95	120	140	149	93	120	140	149	122	149	149	149
StSt 105 339	7200 4.7+2.5 m	0	1	–	–	103	116	–	110	129	150	–	111	129	137	112	144	159	159
		1	0-1	–	–	93	101	–	100	116	129	–	99	112	120	99	124	137	137
		2-4	0-1	–	–	–	93	–	93	105	117	–	–	104	108	93	116	124	124
StSt 105 317	7200 4.7+2.5 m	0	1	No internal installation possible															
		1	0-1	–	–	93	101	–	100	116	129	–	99	112	120	99	124	137	137
		2-4	0-1	–	–	–	93	–	93	105	117	–	–	104	108	93	116	124	124

Special solutions

Part No.	Height [mm]	Installation type outside | inside	Rafter bracket, St/tZn Part No. 105 240	Metal roof bracket, StSt Part No. 105 241
105 281	4550	0 1	140	140

Max. Gust wind speeds in km/h for air-termination systems.

Tripod mounting – support tube

Cable in the support tube

Part No.	Height [mm]	Number of concrete bases	Installation type outside | inside	Tripod, small, St/tZn, Part No. 105 357 6x	9x	12x	Tripod, small, St/tZn, Part No. 105 351 6x	9x	12x	... arrow arrangement Part No. 105 351 6x	9x	12x	Supporting tube stand Part No. 105 244
Al 105 330	4200 3.2+1 m	0	1	101	122	137	135	168	198	110	132	149	–
		1	0-1	–	103	117	114	137	159	93	112	129	105
		2-4	0-1	–	93	104	103	122	137	–	100	112	95
Al 105 332	5700 4.,7+1 m	0	1	–	–	–	–	–	–	–	–	–	–
		1	0-1	–	–	–	–	–	–	–	–	–	124
		2-4	0-1	–	–	–	–	–	–	–	–	–	110
Al 105 331	5700 3.2+2.5 m	0	1	–	–	–	116	137	159	93	112	129	–
		1	0-1	–	–	–	103	121	137	–	99	112	172
		2-4	0-1	–	–	–	95	110	124	–	93	104	149
Al 105 333	7200 4.7+2.5 m	0	1	–	–	–	–	–	–	–	–	–	–
		1	0-1	–	–	–	–	–	–	–	–	–	112
		2-4	0-1	–	–	–	–	–	–	–	–	–	105
StSt 105 314	4200 3.2+1 m	0	1	99	120	135	132	166	194	105	129	149	–
		1	0-1	–	101	114	112	132	155	93	110	124	208
		2-4	0-1	–	–	103	101	120	135	–	98	110	180
StSt 105 316	5700 4.7+1 m	0	1	–	–	–	–	–	–	–	–	–	–
		1	0-1	–	–	–	–	–	–	–	–	–	124
		2-4	0-1	–	–	–	–	–	–	–	–	–	110
StSt 105 315	5700 3.2+2.5 m	0	1	–	–	–	114	135	155	93	110	124	–
		1	0-1	–	–	–	101	120	135	–	99	110	168
		2-4	0-1	–	–	–	93	110	124	–	–	101	149
StSt 105 317	7200 4.7+2.5 m	0	1	–	–	–	–	–	–	–	–	–	–
		1	0-1	–	–	–	–	–	–	–	–	–	116
		2-4	0-1	–	–	–	–	–	–	–	–	–	105

Cable in the support tube

Part No.	Height [mm]	Number of concrete bases	Installation type outside | inside	Tripod, large, St/tZn, Part No. 105 201 3x	6x	9x	12x	Tripod, large, St/tZn, and Bracing, StSt (V2A), Part No. 105 201 + 105 601 3x	6x	9x	12x
Al 105 330	4200 3.2+1 m	0	1	No internal installation possible							
		1	0-1	112	144	178	204	–	–	–	–
		2-4	0-1	104	132	155	184	–	–	–	–
Al 105 331	5700 3.2+2.5 m	0	1	No internal installation possible							
		1	0-1	112	147	147	147	–	–	–	–
		2-4	0-1	105	132	132	132	–	–	–	–
Al 105 332	5700 4.7+1 m	0	1	No internal installation possible							
		1	0-1	–	–	–	–	–	108	124	140
		2-4	0-1	–	–	–	–	–	99	112	129
Al 105 333	7200 4.7+2.5 m	0	1	No internal installation possible							
		1	0-1	–	–	–	–	–	101	117	132
		2-4	0-1	–	–	–	–	–	93	108	121
StSt 105 314	4200 3.2+1 m	0	1	No internal installation possible							
		1	0-1	128	169	174	–	–	–	–	–
		2-4	0-1	114	144	147	–	–	–	–	–
StSt 105 315	5700 3.2+2.5 m	0	1	No internal installation possible							
		1	0-1	–	101	120	137	–	–	–	–
		2-4	0-1	–	93	111	124	–	–	–	–
StSt 105 316	5700 4.7+1 m	0	1	No internal installation possible							
		1	0-1	–	–	–	–	–	108	124	140
		2-4	0-1	–	–	–	–	–	99	112	124
StSt 105 317	7200 4.7+2.5 m	0	1	No internal installation possible							
		1	0-1	–	–	–	–	–	101	117	132
		2-4	0-1	–	–	–	–	–	93	105	120

Wall assembly

Part No.	$L_{(max)}$ [mm]	Number of holders *)	Installation type outside | inside	
Al 105 330	3500 mm *) 2 pc(s)	0	1	237
		1	0-1	224
		2-4	0-1	196
Al 105 332	4000 mm *) 3 pc(s)	0	1	237
		1	0-1	185
		2-4	0-1	155
Al 105 331	5000 mm *) 2 pc(s)	0	1	190
		1	0-1	174
		2-4	0-1	155
Al 105 333	5500 mm *) 3 pc(s)	0	1	185
		1	0-1	155
		2-4	0-1	137
Al 819 730	8500 mm *) 3 pc(s)	0	1	160
StSt 105 314	3500 mm *) 2 pc(s)	0	1	233
		1	0-1	228
		2-4	0-1	199
StSt 105 316	4000 mm *) 3 pc(s)	0	1	233
		1	0-1	188
		2-4	0-1	159
StSt 105 315	5000 mm *) 2 pc(s)	0	1	188
		1	0-1	170
		2-4	0-1	149
StSt 105 317	5500 mm *) 3 pc(s)	0	1	187
		1	0-1	155
		2-4	0-1	140

HVI power Conductor



Technical data	HVI power Conductor (pre-assembled)	HVI power long Conductor (on a reel)	HVI power long Conductor (cut to length)
Picture			
Structure	stranded	stranded	stranded
Cross section of the inner conductor (Cu)	25 mm²	25 mm²	25 mm²
Colour of conductor	black	black	black
Outer diameter	27 mm	27 mm	27 mm
Equivalent separation distance (air)	≤ 90 cm	≤ 90 cm	≤ 90 cm
Equivalent separation distance (solid material)	≤ 180 cm	≤ 180 cm	≤ 180 cm
Minimum bending radius	270 mm black	270 mm black	270 mm black
Operating temperature	-30 °C ... +70 °C	-30 °C ... +70 °C	-30 °C ... +70 °C
Installation temperature	-5 °C ... +40 °C	-5 °C ... +40 °C	-5 °C ... +40 °C
Tensile strength	1200 N	1200 N	1200 N
UV / weather-resistant	yes	yes	yes
Tested with I_{imp} (10/350 µs) based on EN 62561-1	200 kA	200 kA	200 kA
For use in class of LPS in case of a single down conductor without current distribution (k_c = 1)	I, II, III, IV	I, II, III, IV	I, II, III, IV
Installation in Ex zone 1 and 21	allowed	allowed	allowed
Max. order length	6 m ... 35 m	100 m	6 m ... 35 m / 36 m ... 80 m
Cable weight / 100 m	–	73 kg	–

Supporting Tube with HVI power Conductor

Optically optimised installation of the HVI power Conductor inside the supporting tube creates reduced area exposed to wind.

Can be used up to an equivalent separation distance s ≤ 90 cm (in air) or s ≤ 180 cm (solid material).

The conductor length has to be stated when ordering (in steps of 0.5 m).

HVI power Conductor inside the supporting tube with air-termination tip

Supporting tube with internal sealing end and EB spring element.
Air-termination tip, StSt, Ø10 mm, length 1000 mm.



Type HVI P 27 L6M ...	SR3500 FSP1000 GFK V2A
Part No.	**819 430**
Material of supporting tube	**GRP / StSt**
Length of supporting tube	3500 mm
Transport length	3500 mm
Diameter Ø conductor	27 mm
Colour of conductor	black ●
Material of conductor	Cu
Minimum order length	6 m
Maximum order length	35 m
Suitable for installation outside the supporting tube	no
Max. free length with air-termination tip (wall mounting)	3500 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

HVI power Conductor inside the supporting tube with air-termination rod

Supporting tube with internal sealing end and EB spring element.
Air-termination rod, StSt, Ø22 / 16 / 10 mm, length 2500 mm.



Type HVI P 27 L6M ...	SR3500 FS2500 GFK V2A	SR5000 FS2500 GFK V2A
Part No.	**819 431**	**819 433**
Material of supporting tube	**GRP / StSt**	**GRP / StSt**
Length of supporting tube	3500 mm	5000 mm
Transport length	3500 mm	5000 mm
Diameter Ø conductor	27 mm	27 mm
Colour of conductor	black ●	black ●
Material of conductor	Cu	Cu
Minimum order length	6 m	6 m
Maximum order length	35 m	35 m
Suitable for installation outside the supporting tube	no	no
Max. free length with air-termination rod (wall mounting)	5000 mm	5500 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

The conductor cannot be returned as it is made to order.

Air-termination Mast with HVI power Conductor

For a maximum free length of the whole air-termination system of 8.5 m.
To be fixed with three variable supports (Part No. 105 345).

Transport length 6000 mm.

With 1x HVI power Conductor inside the supporting tube. Conductor length has be stated when ordering (steps of 0.5 m).

Maximum total length of the HVI power Conductor 11.0 m in case of class of LPS I.
Maximum total length of the HVI power Conductor 15.0 m in case of class of LPS II.
Maximum total length of the HVI power Conductor 22.5 m in case of class of LPS III.

Type	FM 60 L11M IP HVIP L10M GFK AL STTZN
Part No.	**819 760**
Total length of air-termination mast	11000 mm
Length of air-termination rod	3000 mm
Length of supporting tube	2300 mm
Length of mast pipe	6000 mm
Diameter Ø conductor	27 mm
Colour of conductor	black ●
Material of conductor	Cu
Minimum order length	10 m
Maximum order length	35 m
Suitable for installation outside tube	no
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Accessories for Air-termination Mast with HVI power Conductor

Variable support for air-termination masts

Three supports should be mounted for each air-termination mast.
Clamping range of air-termination mast Ø60 mm.



Type WB D60 ...	V250.350 STTZN
Part No.	**105 345**
Material of support	**St/tZn**
Adjustment range	250-350 mm
Fixing holes Ø	[4x] 12 x 25 mm
PU	1 pc(s)

Mast holder, heavy version

For erecting air-termination systems on installations, such as biogas plants

The heavy version of the mast holder enables the mounting of air-termination masts with a diameter of Ø55–100 mm.



Type	WB D55.100 SE WA150 STTZN
Part No.	**105 352** NEW
Material	**HDG steel**
Fixing	[4x] Ø14 mm
Distance from wall	106 mm
Clamping range (Ø mast)	55-100 mm
Material of threaded rod / nut / washer	StSt
PU	1 pc(s)

HVI power Conductor

High-voltage-resistant, insulated down conductor for maintaining the separation distance from conductive parts according to IEC/EN 62305-3. For use up to an equivalent separation distance s ≤ 90 cm (in air) or s ≤ 180 cm (solid material).

HVI power Conductor (pre-assembled, installation inside the tube)

With one head piece and one connection element (enclosed loose). Minimum order length 6 m, conductor length has to be stated when ordering (in steps of 0.5 m).



Type HVI P ...	RIV 90 27 L6M SW
Part No.	819 160
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	black ●
Diameter Ø conductor	27 mm
Minimum order length	6 m
Maximum order length	35 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

HVI power Conductor (pre-assembled, installation outside the tube) for HVI power supporting tube GRP / Al

HVI power Conductor pre-assembled for installation outside the tube with one head piece and one connection element (enclosed loose).
Connection kit for installing the HVI power Conductor on HVI power supporting tubes GRP / Al consists of threaded pins, a connection part, heat-shrinkable sleeve and fixing ring with slotted conductor holder (Ø27 mm) for the sealing end (including cable ties).
Minimum order length 6 m, conductor length has to be stated when ordering (in steps of 0.5 m).



Type HVI P ...	RAV 90 27 L6M SW
Part No.	819 165
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	black ●
Diameter Ø conductor	27 mm
Minimum order length	6 m
Maximum order length	35 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

HVI power long Conductor (on a reel)

The HVI power long Conductor for on-site assembly is delivered in a length of 100 m on a disposable plywood reel (diameter approx. 900 mm, width approx. 485 mm), incl. an Allen key.



Type HVI P ...	LO 90 27 L100M SW
Part No.	819 137
Material of conductor	Cu
Material of insulation	PE
Material of sheath	PE
Colour of conductor	black ●
Diameter Ø conductor	27 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	100 m

HVI power long Conductor (cut to length)

Cut-to-length HVI power long Conductor for on-site assembly. The conductor is delivered as a coil (Part No. 819 163) or on a reel (Part No. 819 161).
Conductor length to be indicated when ordering (in steps of 0.5 m).



Type HVI P ...	LO 90 27 L6...35M SW	LO 90 27 L36...80M SW
Part No.	819 163	819 161
Material of conductor	Cu	Cu
Material of insulation	PE	PE
Material of sheath	PE	PE
Colour of conductor	black ●	black ●
Diameter Ø conductor	27 mm	27 mm
Minimum order length	6 m	36 m
Maximum order length	35 m	80 m
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)	1 pc(s)

Connection Elements for HVI power Conductor / HVI power long Conductor

Connection kit for HVI power long Conductor Ø27 mm for installation inside the tube

Connection elements for sealing the HVI power long Conductor at both ends, for implementing the sealing end of the conductor in the supporting tube (head piece) and connection element for connection with other parts of the external lightning protection system or earth-termination system (including two heat-shrinkable sleeves).



Type	HVI P LO ASS KF 27 V2A
Part No.	**819 142**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Outside diameter Ø	30 mm
Screw	M8x10 threaded pin mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Connection kit for HVI power long Conductor Ø27 mm for installation outside the tube

Connection kit for HVI power Conductor for installation on HVI power supporting tubes GRP / Al consisting of connection elements, threaded pins, connection part, heat-shrinkable sleeves, cable ties and fixing ring with a slotted conductor holder (Ø27 mm).



Type	HVI P LO ASS RAV KF 27 V2A
Part No.	**819 149**
Material	StSt
Connection	bolt Ø10 mm, L 50 mm
Outside diameter Ø	30 mm
Screw	M8x10 threaded pin mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

EB connection element for HVI power Conductor / HVI power long Conductor

For discharging the electric field of the HVI power Conductor (pre-assembled / on a reel) in the sealing end range.
Special slotted design to electrically contact the semi-conductive sheath.



Type	PAE 27 AB11 V2A
Part No.	**410 239**
Material	StSt
Clamping range Ø	27 mm
Connection hole Ø	11 mm
Screw	⬢ M10 x 20 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Accessories for Connection Elements for HVI power Conductor / HVI power long Conductor

Fixing bolt

Fixing bolt for spanning a 50 mm² aluminium cable (Part No. 840 050) to an air-termination rod (Ø22 / Ø16 mm) or a connection plate (e.g. Part No. 819 289 or 819 288).



Type	BB 1XB11GSM8 1XB23GSM12 AL
Part No.	**105 229**
Hole	1x B 11 mm, 1x B 23 mm
Material of bolt	Al
Wire end ferrule	50 mm²
Material of wire end ferrule	Cu/gal Sn
Standard	EN 62561-1
PU	10 pc(s)

Wire end ferrule

Wire end ferrule for securely fixing the aluminium cable with a cross-section of 50 mm² (Part No. 840 050).

1 pack = 10 pieces.



Type	AEH 50 L22 CUGALSN
Part No.	**444 050**
Material	Cu/gal Sn
Cross section	50 mm²
PU	1 PAK

Cable tie

Cable ties for routing the various cables with the plastic holder half shells.



Type	KB UVB 546X13 SW
Part No.	**819 999**
Length	546 mm
Width	13.2 mm
Material	Polyamide 6.6
Design	UV-resistant
PU	50 pc(s)

Supporting Tubes for HVI power Conductor / HVI power long Conductor

With air-termination tip

Supporting tube with internal sealing end and EB spring element.
Air-termination tip, Al/StSt, Ø10 mm, length 1000 mm.



General technical data:	
Outside diameter Ø	50 mm
Length of insulating clearance	1800 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D50 ...	3500 FSP1000 IA HVIP GFK AL	5000 FSP1000 IA HVIP GFK AL
Part No.	**105 563**	**105 565**
Material of supporting tube	**GRP** / **Al**	**GRP** / **Al**
Length of supporting tube	3500 mm	5000 mm
Transport length	3500 mm	5000 mm
Suitable for installation outside the tube	yes	yes
Max. free length with air-termination tip (wall mounting)	3500 mm	4000 mm
PU	1 pc(s)	1 pc(s)

Type SR D50 ...	3500 FSP1000 IP HVIP GFK V2A	5000 FSP1000 IP HVIP GFK V2A
Part No.	**105 320**	**105 322**
Material of supporting tube	**GRP** / **StSt**	**GRP** / **StSt**
Length of supporting tube	3500 mm	5000 mm
Transport length	3500 mm	5000 mm
Suitable for installation outside the tube	no	no
Max. free length with air-termination tip (wall mounting)	3500 mm	4000 mm
PU	1 pc(s)	1 pc(s)

With air-termination tip and side outlet

Supporting tube with internal sealing end and EB spring element.
Air-termination tip, Al/StSt, Ø10 mm, length 1000 mm.



General technical data:	
Outside diameter Ø	50 mm
Length of insulating clearance	1800 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D50 ...	3500 FSP1000 IA SA HVIP GFK AL	5000 FSP1000 IA SA HVIP GFK AL
Part No.	**105 513**	**105 515**
Material of supporting tube	**GRP** / **Al**	**GRP** / **Al**
Length of supporting tube	3500 mm	5000 mm
Transport length	3500 mm	5000 mm
Suitable for installation outside the tube	yes	yes
PU	1 pc(s)	1 pc(s)

Type SR D50 ...	3500 FS1000 IP SA HVIP GFK V2A	5000 FS1000 IP SA HVIP GFK V2A
Part No.	**105 392**	**105 394**
Material of supporting tube	**GRP** / **StSt**	**GRP** / **StSt**
Length of supporting tube	3500 mm	5000 mm
Transport length	3500 mm	5000 mm
Suitable for installation outside the tube	no	no
PU	1 pc(s)	1 pc(s)

With air-termination rod

Supporting tube with internal sealing end and EB spring element.
Air-termination rod, Al/StSt, Ø22 / 16 / 10 mm, length 2500 mm.



General technical data:	
Outside diameter Ø	50 mm
Length of insulating clearance	1800 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D50 ...	3500 FS2500 IA HVIP GFK AL	5000 FS2500 IA HVIP GFK AL
Part No.	**105 573**	**105 575**
Material of supporting tube	**GRP** / **Al**	**GRP** / **Al**
Length of supporting tube	3500 mm	5000 mm
Transport length	3500 mm	5000 mm
Suitable for installation outside the tube	yes	yes
Max. free length with air-termination rod (wall mounting)	5000 mm	5500 mm
PU	1 pc(s)	1 pc(s)

Type SR D50 ...	3500 FS22 10 2500 IP HVIP GFK V2A	5000 FS22 10 2500 IP HVIP GFK V2A
Part No.	**105 321**	**105 323**
Material of supporting tube	**GRP** / **StSt**	**GRP** / **StSt**
Length of supporting tube	3500 mm	5000 mm
Transport length	3500 mm	5000 mm
Suitable for installation outside the tube	no	no
Max. free length with air-termination rod (wall mounting)	5000 mm	5500 mm
PU	1 pc(s)	1 pc(s)

With air-termination rod and side outlet

Supporting tube with internal sealing end and EB spring element.
Air-termination rod, Al/StSt, Ø22 / 16 / 10 mm, length 2500 mm.



General technical data:	
Outside diameter Ø	50 mm
Length of insulating clearance	1800 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)

Type SR D50 ...	3500 FS2500 IA SA HVIP GFK AL	5000 FS2500 IA SA HVIP GFK AL
Part No.	**105 543**	**105 545**
Material of supporting tube	**GRP** / **Al**	**GRP** / **Al**
Length of supporting tube	3500 mm	5000 mm
Transport length	3500 mm	5000 mm
Suitable for installation outside the tube	yes	yes
PU	1 pc(s)	1 pc(s)

Type SR D50 ...		5000 FS2500 IP SA HVIP GFK V2A
Part No.		**105 395**
Material of supporting tube		**GRP** / **StSt**
Length of supporting tube		5000 mm
Transport length		5000 mm
Suitable for installation outside the tube		no
PU		1 pc(s)

Accessories for Supporting Tubes for HVI power Conductor / HVI power long Conductor

Sideways air-termination tips Al for supporting tubes



Fixing kit for installing lateral/horizontal air-termination tips to HVI long supporting tubes and HVI power supporting tubes. Consisting of four air-termination tips and a fixing ring.

Note: The additional wind load stress on the air-termination system resulting from the side-mounted air-termination tips must be taken into account!

Type BFRS D80 B35 ...	4FSP 10 1030 AL	4FSP 10 1030 V2A
Part No.	**819 185**	**819 186**
Length of air-termination tip	1030 mm	1030 mm
Material of air-termination tip	Al	StSt
Material of fixing ring	Al	StSt
PU	1 pc(s)	1 Stk.

Tripod for Supporting Tubes without Side Outlet

Stands for holding HVI supporting tubes for internally/externally routed HVI Conductors in/on the supporting tube, with double clamp for connection of 2x Rd 8–10 mm. Adjustable to the roof slope up to max. 10° using a variable fixing on the base holder.

The stackable concrete bases, the plastic base plates and the base holder set for holding additional concrete bases are each available separately in the accessories.

Tripod small



Type	DBS KB D50 RA680 V2A
Part No.	**107 390**
Material of tripod	StSt
Support	50 and 40*) mm
Radius	680 mm
Space required for tripod	1175 x 1020 mm
PU	1 pc(s)

Tripod large



Type	DBS KB D50 RA1330 V2A
Part No.	**107 391**
Material of tripod	StSt
Support	50 and 40*) mm
Radius	1330 mm
Space required for tripod	2300 x 1995 mm
PU	1 pc(s)

Four-legged stand, small



Type	VBS KB D50 RA680 V2A
Part No.	**107 490**
Material of tripod	StSt
Support	50 and 40*) mm
Radius	680 mm
Space required for tripod	960 x 960 mm
PU	1 pc(s)

Four-legged stand, large



Type	VBS KB D50 RA1330 V2A
Part No.	**107 491**
Material of tripod	StSt
Support	50 and 40*) mm
Radius	1330 mm
Space required for tripod	1880 x 1880 mm
PU	1 pc(s)

Tripod, small, HDG steel

Suitable for the inner routing of the HVI Conductor.



Type	DBS KB D40.50 RA620 STTZN	DBS KB D40.50 RA220 STTZN
Part No.	**105 351**	**105 357**
Material of tripod	**St/tZn**	**St/tZn**
Support	40 / 50 mm	40 / 50 mm
Radius	620 mm	220 mm
Number of concrete bases	3-12 blocks, 17 kg each	3-12 blocks, 17 kg each
Space required for tripod	1300 x 1450 mm	668 x 718 mm
PU	1 pc(s)	1 pc(s)

Tripod, large, HDG steel

Suitable for the outer routing of the HVI Conductor.



Type	DBS KB D40.50 RA1435 STTZN
Part No.	**105 201**
Material of tripod	**St/tZn**
Support	40 / 50 mm
Radius	1435 mm
Number of concrete bases	3-12 blocks 17 kg each
Space required for tripod	2520 x 2860 mm
PU	1 pc(s)

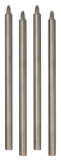
Accessories for Tripod for Supporting Tubes without Side Outlet

Set of base support rods for tripods



Type	SOH 3 200 V2A
Part No.	**107 396**
For tripod	Part No. 107 390 / 107 391
Number of concrete bases	1 to 2
Material	StSt
Diameter	16 mm
Length	200 mm
PU	1 pc(s)

Set of base support rods for four-legged stands



Type	SOH 4 200 V2A
Part No.	**107 496**
For four-legged stand	Part No. 107 490 / 107 491
Number of concrete bases	1 to 2
Material	StSt
Diameter	16 mm
Length	200 mm
PU	1 pc(s)

Adapter set

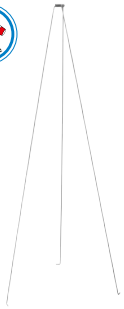
Adapter set for reducing the diameter from 50 mm to 40 mm for tripods and four-legged stands.



Type	RED D40 V2A DBS VBS
Part No.	**107 399**
For tripod	Part No. 107 390 / 107 391
For four-legged stand	Part No. 107 490 / 107 491
Material	StSt
PU	1 pc(s)

Bracing

Brace, 3x with clamp for pipe, Ø50 mm for fixing to the tripod (part no. 105 201). Brace suitable for supporting tubes with a length of 4700 mm (e.g. part nos 105 332, 105 316, 105 333, 105 317, 105 322, 105 323, 105 565, 105 575).



Type	ABST 3F D50 2900 V2A
Part No.	**105 601**
Material	StSt
Brace length	2910 mm
Ø clamp	50 mm
PU	1 pc(s)

Concrete base

With fixing wedge, stackable, for erecting tripods and air-termination rods Ø16 mm, chamfered or tapered, DEHNiso spacer Ø16 mm or conductor holder (Part No. 253 279).



Type	BES 17KG KT16 D337 SET
Part No.	**102 010**
Weight	17 kg
Support	with fixing wedge Ø16 mm
Diameter Ø	337 mm
Material	**concrete (C45/55)**
Material of wedge / adapter	StSt
PU	54 pc(s)

Base plate

To protect the roof sheeting under the concrete base. For concrete bases (Part Nos. 102 010, 102 002).



Type	ULP KS D370 SW
Part No.	**102 050**
Outside diameter Ø	370 mm
Inside diameter Ø	360 mm
Material	**EVA**
Colour	black ●
PU	1 pc(s)

Fixing Elements for Supporting Tubes

Fixing clamp with tensioning strap

For fixing supporting tubes to structural elements, e.g. antenna masts.



Type	BS D50 SB50.300 V2A
Part No.	**105 360**
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
PU	1 pc(s)

Fixing clamp with tensioning strap

With additional spacer for adjusting the sector antenna supports to the mast.



Type BS D50 ...	DS30 SB50.300 V2A
Part No.	**105 361**
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
Length of spacer	30 mm
PU	1 pc(s)

Fixing clamp with tensioning strap

With additional long spacer for adjusting sector antenna supports to the mast.



Type BS D50 ...	DS90 SB50.300 V2A
Part No.	**105 362**
Material of clip	StSt
Clamping range for supporting tube	50 mm
Clamping range for pipe Ø	50-300 mm
Material of tensioning strap	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
Length of spacer	95 mm
PU	1 pc(s)

Wall mounting bracket for horizontal mounting, flat

For fixing supporting tubes onto the structure to be protected or the wall.



Type	WB D50 WA V2A
Part No.	105 340
Material	StSt
Clamping range for supporting tube	50 mm
Distance from wall / corner	80 mm
Dimensions of fixing	320 mm
Fixing	[8x] Ø5.1 / [4x] 11 x 20 mm
PU	1 pc(s)

Wall mounting bracket for horizontal mounting, corner

For fixing supporting tubes onto the structure to be protected or the wall.



Type	EB D50 WA V2A
Part No.	105 341
Material	StSt
Clamping range for supporting tube	50 mm
Distance from wall / corner	80 mm
Dimensions of fixing	152 mm
Fixing	[8x] Ø5.1 / [4x] 11 x 20 mm
PU	1 pc(s)

Accessories for Fixing Elements for Supporting Tubes

Wall mounting bracket for vertical mounting

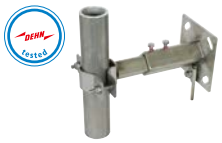
For attaching supporting tubes or air-termination rods D40 / D50 to roof-mounted structures or walls.



Type	WB D40.50 SE WA46 V2A	WB D40.50 SE WA110 V2A
Part No.	105 342	105 348
Material of bracket	StSt	StSt
Fixing	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm	[8x] Ø5.1 / [4x] 7 x 10 / [2x] 11 x 20 mm
Clamping range for supporting tube	40-50 mm	40-50 mm
Distance from wall	46 mm	110 mm
PU	1 pc(s)	1 pc(s)

Wall mounting bracket, adjustable from 150-200 mm

For attaching supporting tubes or air-termination rods D40 / D50, with double clamp for connecting 2x Rd 8-10 mm.



Type	WB D40.50 V150.200 V2A
Part No.	105 344
Material of bracket	StSt
Clamping range for supporting tube	40-50 mm
Distance from wall	150-200 mm
Dimensions of plate	120 x 120 x 4 mm
Fixing	[4x] 12 x 26 mm
Standard	EN 62561-1
PU	1 pc(s)

Wall mounting bracket, adjustable from 230-1300 mm

For fixing supporting tubes or air-termination rods D40 / D50.



General technical data:	
Material of bracket	St/tZn / StSt
Clamping range for supporting tube	40-50 mm
Dimensions of plate	120 x 120 x 4 mm
Fixing	[4x] 12 x 26 mm

Type	WB D40.50 V230.400 STTZN V2A	WB D40.50 V400.700 STTZN V2A
Part No.	105 347	105 343
Distance from wall	230-400 mm	400-700 mm
PU	1 pc(s)	1 pc(s)

Type	WB D40.50 V700.1300 STTZN V2A
Part No.	105 349
Distance from wall	700-1300 mm
PU	1 pc(s)

Railing clamp

For pipes.



Type	BS D40.50 D48.60 V2A
Part No.	105 354
Material	StSt
Clamping range for pipe Ø	48-60 mm (1 1/2-2'')
Clamping range for supporting tube	40-50 mm
PU	5 pc(s)

Railing clamp

For pipes.



Type	BS D40.50 D70.90 V2A
Part No.	105 355
Material	StSt
Clamping range for pipe Ø	70-90 mm (2 1/4-3'')
Clamping range for supporting tube	40-50 mm
PU	1 pc(s)

Railing clamp

For square hollow profiles.



Type	BS D40.50 4K20.50 V2A	BS D40.50 4K60.120 V2A
Part No.	105 356	105 376
Material	StSt	StSt
Clamping range for square profile	20 x 20 to 50 x 50 mm	60 x 120 mm
Clamping range for supporting tube	40-50 mm	40-50 mm
PU	5 pc(s)	1 pc(s)

Spacers for Omnidirectional Antennas

Spacer for DEHNiso Combi supporting tubes with HVI Conductor installed inside and/or outside the supporting tube, mounted on the antenna mast.



General technical data:	
Material of support / square profile	**St/tZn**
Clamping range of supporting tube	50 mm
Length of spacer	1000 mm

Type AH D50 1000 ...	D55.100 STTZN	D100.150 STTZN
Part No.	**105 363**	**105 364**
Clamping range (Ø mast)	55-100 mm	100-150 mm
Dimensions (w1 x h1 x d1)	140 x 120 x 55 mm	190 x 140 x 60 mm
PU	1 pc(s)	1 pc(s)

Type AH D50 1000 ...	D150.190 STTZN
Part No.	**105 365**
Clamping range (Ø mast)	150-190 mm
Dimensions (w1 x h1 x d1)	230 x 180 x 70 mm
PU	1 pc(s)

Spacers for omnidirectional antennas with special lengths or any other diameters are available upon request!

Accessories for HVI power Conductor / HVI power long Conductor

Roof conductor holder

For flat roofs, weight approx. 4.7 kg. Conductor holder, concrete block and base plate for installing the HVI power Conductor on flat roofs.



Type	DLH ZS 27 V2A BES180 GP300 K
Part No.	**253 333**
Material of conductor holder	StSt
Conductor support Rd	27 mm
Total weight	approx. 4.7 kg
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	24 pc(s)

Roof conductor holder

For flat roofs, weight approx. 8.6 kg. Conductor holder, concrete block and base plate for installing the HVI power Conductor on flat roofs.



Type	DLH ZS 27 V2A 8.5KG KT D240 ULP
Part No.	**253 334**
Material of conductor holder	StSt
Conductor support Rd	27 mm
Total weight	approx. 8.6 kg
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Conductor holder

With slotted saddle clamp for HVI power Conductor to be fixed in the concrete block (Part No. 253 301) and base plate (Part No. 253 300).



Type	LH ZS 27 DS10 L75 V2A
Part No.	**253 330**
Material	StSt
Conductor support Rd	27 mm
Height of conductor holder	approx. 87 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Concrete block

For stabilising the base plate.



Type	BES 4.6KG SB10 180X180X70
Part No.	**253 301**
Material	**concrete (C35/45)**
Weight	4.6 kg
Dimensions	180 x 180 x 70 mm
PU	24 pc(s)

Base plate

Base plate to hold the spacer bar (Part Nos. 253 315, 253 325) and conductor holder (Part No. 253 289) and to protect the roof sheeting under the concrete block (Part No. 253 301).



Type	GP B10 H60 D300 KS GR
Part No.	**253 300**
Diameter Ø	300 mm
Diameter Ø of lock bush	10 mm
Height	60 mm
Material	**plastic**
Colour	grey
PU	24 pc(s)

Conductor holder

With slotted saddle clamp for HVI power Conductor for mounting in the concrete block with wedge (Part No. 102 075).



Type	LH ZS 27 KT D16 L85 V2A
Part No.	**253 331**
Material	StSt
Conductor support Rd	27 mm
Height of conductor holder	approx. 125 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Concrete base

With fixing wedge, for air-termination tips Ø10, length 1000 mm or DEHNiso spacers Ø16 mm, length up to 675 mm (distance 0.8 m) or conductor holder (Part No. 253 279).



Type	BES 8.5KG KT10 16 D240 SET
Part No.	**102 075**
Total weight	8.5 kg
Diameter Ø	240 mm
Material	**concrete (C45/55)**
Material of wedge / adapter	StSt
PU	120 pc(s)

Base plate

To protect the roof sheeting under the concrete base. For concrete bases (Part No. 102 075, 102 003).



Type	ULP KS D280 SW
Part No.	**102 060**
Outside diameter Ø	280 mm
Inside diameter Ø	270 mm
Material	**EVA**
Colour	black ●
PU	1 pc(s)

Spacer with EB element for HVI power Conductor (length of variable sealing end 350-900 mm)

Spacer for establishing the variable sealing end of the HVI power Conductor.
With MV clamp for connection to the equi-potential bonding (Rd 16 mm / Rd 8-10 mm).
Concrete base (Part No. 102 010, weight 17 kg) and base plate (Part No. 102 050) must be ordered separately.



Type	DIDH PAE 27 D16 1270 AL V2A
Part No.	**105 462**
Material of spacer	Al
Lenght of spacer	1270
Conductor support Rd	27 mm
Material of conductor holder	StSt
Clamping range Rd MV clamp	8-10 / 16 mm
Material of clamp	Al
Length of variable sealing end	350-900 mm
Max. gust wind speed (1 base, 17 kg each; l = 900 mm)	100 km/h
Max. gust wind speed (2 bases, 17 kg each; l = 900 mm)	141 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Variable tripod with EB element for HVI power Conductor (length of variable sealing end 900 - 1500 mm)

Tripod (hinged) with variable spacer (small) for establishing the variable sealing end of the HVI power Conductor.
With UNI earthing clamp for connecting 1x Rd 8-10 mm and 1x conductor 4-50 mm².
Adjustable to the roof inclination up to max. 10°.
The **three concrete bases** (Part No. 102 075, weight 8.5 kg) and **base plates** (Part No. 102 060) must be **ordered separately**.



Type	V DBS RA320 PAE 27 V 600 1180 V2A
Part No.	**105 468**
Material of tripod	StSt
Radius	320 mm
Number of concrete bases	3 (8.5 kg each)
Conductor support Rd	27 mm
Adjustment range of spacer	600-1180 mm
Length of variable sealing end	900-1500 mm
Max. gust wind speed (3 bases, 8.5 kg each; l = 900 mm)	170 km/h
Max. gust wind speed (3 bases, 8.5 kg each; l = 1500 mm)	104 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Variable tripod with EB element for HVI power Conductor (length of variable sealing end 1500 - 1800 mm)

Tripod (hinged) with variable spacer (large) for establishing the sealing end of the HVI power Conductor.
With UNI earthing clamp for connecting 1x Rd 8-10 mm and 1x conductor 4-50 mm².
Adjustable to the roof inclination up to max. 10°.
The **three concrete bases** (Part No. 102 075, weight 8.5 kg) and the **base plates** (Part No. 102 060) must be **ordered separately**.



Type	V DBS RA320 PAE 27 V 750 1510 V2A
Part No.	**105 467**
Material of tripod	StSt
Radius	320 mm
Number of concrete bases	3 (8.5 kg each)
Conductor support Rd	27 mm
Adjustment range of spacer	750-1510 mm
Length of variable sealing end	1500-1800 mm
Max. gust wind speed (3 bases, each 8.5 kg; l = 1500 mm)	104 km/h
Max. gust wind speed (3 bases, each 8.5 kg; l = 1800 mm)	93 km/h
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Spacer for HVI power Conductor

Spacer for additional mechanical fixing in the variable sealing end range.
The spacer is erected with **two concrete bases** (Part No. 102 010, weight 17 kg). The **concrete bases** and **base plate** (Part No.Nr. 102 050) must be ordered separately.



Type	DH ZS 27 30 D16 1500 GFK PA
Part No.	**106 814**
Material of spacer	**GRP**
Material of conductor holder / adapter	**PA**
Number of concrete bases	2 (17 kg each)
Length	1500 mm
Insulating clearance	1475 mm
Conductor support Rd	27 mm
Thread	M8
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Concrete base

With fixing wedge, stackable, for erecting tripods and air-termination rods Ø16 mm, chamfered or tapered, DEHNiso spacer Ø16 mm or conductor holder (Part No. 253 279).



Type	BES 17KG KT16 D337 SET
Part No.	**102 010**
Weight	17 kg
Support	with fixing wedge Ø16 mm
Diameter Ø	337 mm
Material	**concrete (C45/55)**
Material of wedge / adapter	StSt
PU	54 pc(s)

Base plate

To protect the roof sheeting under the concrete base. For concrete bases (Part Nos. 102 010, 102 002).



Type	ULP KS D370 SW
Part No.	**102 050**
Outside diameter Ø	370 mm
Inside diameter Ø	360 mm
Material	**EVA**
Colour	black ●
PU	1 pc(s)

Conductor holder

With thread.
For wall mounting with two-screw conductor clamp (not for use in the sealing end range).



Type	LH ZS 27 GM8 V2A	LH ZS 27 GM6 V2A
Part No.	**275 240**	**275 241**
Material of conductor holder	StSt	StSt
Conductor support Rd	27 mm	27 mm
Thread	M8	M6
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)	25 pc(s)

Conductor holder

With plastic base
Conductor holder for wall mounting with two-screw clamp (not within the sealing end range).



Type	LH ZS 27 KS H10 V2A
Part No.	**275 249**
Material of conductor holder	StSt
Conductor support Rd	27 mm
Thread	M8
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Conductor holder

With slot hole.
For wall mounting, with two-screw conductor clamp (not for use in the sealing end range).



Type	LH ZS 27 B5.5X10 V2A
Part No.	**275 242**
Material of conductor holder	StSt
Conductor support Rd	27 mm
Fixing hole	5.5 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Saddle clamp



Type	LH ZSUEL 30 2XB6.5 V2A
Part No.	**275 269** NEW
Conductor routing	Fixed
Material of conductor holder	StSt
Conductor support Rd	27-30 mm
Fixing	[2x] Ø6,5 mm
PU	25 pc(s)

Conductor holder with tensioning strap

For fixing the HVI power Conductor, e.g. to pipes.



Type	LH ZS 27 SB50.300 V2A
Part No.	**275 339**
Material of conductor holder	StSt
Conductor support Rd	27 mm
Tensioning range Ø pipe	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Conductor holder for fixing with a tensioning strap

For fixing the HVI power Conductor at pipes e.g. with pipe clamp (Part No. 106 323).



Type	LH ZS 27 30 SBH 25X0.3 V2A
Part No.	**275 359**
Material of conductor holder	StSt
Conductor support Rd	27 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Pipe clamp

For fixing (clamping) conductor holders (e.g. Part No. 275 319).



Type	BRS SPB25 50.300 V2A
Part No.	**106 323**
Material of head / strap	StSt
Clamping range Ø	50-300 mm
Dimensions of strap	1100 x 25 x 0.3 mm
Material of screw	StSt
PU	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901) in case of larger pipe diameters.



Type	SPK 25X0.3 V2A
Part No.	**106 324**
Material of head	StSt
For strap (w x d)	25 x 0.3 mm
Screw	M8 x 20 mm
Material of screw	StSt
PU	20 pc(s)

Tensioning strap



Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Strap dimensions (w x d)	25 x 0.3 mm
Length	100 m
PU	1 pc(s)

Roof conductor holder

With pre-punched points for bending and hooking into the roof tile and for screwing onto battens to install the HVI power Conductor on gable roofs.



Type	DLH ZS 27 30 H55 L205 V2A
Part No.	**202 857**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Conductor support Rd	27 mm
Length of brace	205 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	1 pc(s)

Roof conductor holder for roofs with round standing seam

Roof conductor holder with slotted saddle clamp for fixing the HVI power Conductor onto metal roofs with round standing seam.



Type	DLH RSF ZS 27 V2A
Part No.	**202 860**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	Ø20-25 mm
Conductor support Rd	27 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder for roofs with clamping seam (e.g. RIB-ROOF Speed 500 from Zambelli)

Roof conductor holder with slotted saddle clamp for fixing the HVI power Conductor onto metal roofs with clamping seam.



Type	DLH KF ZS 27 V2A
Part No.	**202 861**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	approx. 18 / 22 mm
Conductor support Rd	27 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder for roofs with standing seam

Roof conductor holder with slotted saddle clamp for fixing the HVI power Conductor onto metal roofs with standing seam.



Type	DLH SF ZS 27 V2A
Part No.	**202 862**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Clamping range	0.7-8 mm
Conductor support Rd	27 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Roof conductor holder with connection lug

Roof conductor holder with slotted saddle clamp for HVI power Conductor and Z-shaped connection lug for riveting or screwing to metal roofs.



Type	DLH AL ZS 27 V2A
Part No.	**202 863**
Material of roof conductor holder	StSt
Material of conductor holder	StSt
Fixing	[4x] Ø5.2 / [2x] Ø6.5 mm
Conductor support Rd	27 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Air-termination tip adapter

Reducing adapter for Ø22-mm fixtures for the central mounting of Ø10/16-mm air-termination rods on HVI supporting tubes.



Type	AD 22 16 L45 AL	AD 22 10 L45 AL
Part No.	**819 895** NEW	**819 898**
Material	Al	Al
Reduction (Ø)	22/16 mm	22/10 mm
PU	10 pc(s)	10 pc(s)

Type	AD 22 16 L45 V2A	AD 22 10 L45 V2A
Part No.	**819 896**	**819 897**
Material	NIRO	NIRO
Reduction (Ø)	22/16 mm	22/10 mm
PU	10 pc(s)	10 pc(s)

Conductor Holders for HVI power Conductor in Ex Areas

The HVI power Conductor is suitable for installation in explosion hazardous areas Ex zone 1 (gases, vapours, mists) as well as Ex zone 21 (dust). The special installation conditions safely prevent electric sparks to neighbouring metal parts when lightning current flows through the HVI power Conductor.
The HVI power Conductor has to be installed in accordance with the installation instructions.

HVI power Ex W85 holder

For fixing on metal structural parts (facades) in Ex zones 1 and 21.



Type	LH ZS 27 EX W85 BP V2A
Part No.	**275 450**
Material	StSt
Conductor support Rd	27 mm
Distance from wall	85 mm
Fixing	[4x] Ø5.1 / [2x] 7 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI power Ex W240 holder

For fixing on metal structural parts (facades) in Ex zones 1 and 21.



Type	LH ZS 27 EX W240 BP V2A
Part No.	**275 451**
Material	StSt
Conductor support Rd	27 mm
Distance from wall	240 mm
Fixing	[4x] Ø5.1 / [2x] 7 x 10 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI power Ex busbar 500

For installing the HVI power Conductor with conductor holders HVI Ex W85 holder (Part No. 275 450) on a non-conductive structure, e.g. stone, wood.



Type	VS EX 500 V2A
Part No.	**275 498**
Fixing	[4x] Ø5.5 / [2x] 7 x 10 mm
PU	10 pc(s)

HVI power Ex P85 holder

For fixing to pipes, e.g. with pipe clamp (Part No. 106 323) in Ex zones 1 und 21.



Type	LH ZS 27 EX P85 SBB V2A
Part No.	**275 454**
Material	StSt
Conductor support Rd	27 mm
Distance from wall	85 mm
Clamping range of tube	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

HVI power Ex P240 holder

For fixing to pipes, e.g. with pipe clamp (Part No. 106 323) in Ex zones 1 and 21.



Type	LH ZS 27 EX P240 SBB V2A
Part No.	**275 455**
Material	StSt
Conductor support Rd	27 mm
Distance from wall	240 mm
Clamping range of tube	50-300 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	10 pc(s)

Accessories for Conductor Holders for HVI power Conductor in Ex Areas

Pipe clamp

For fixing (clamping) conductor holders (e.g. Part No. 275 319).



Type	BRS SPB25 50.300 V2A
Part No.	**106 323**
Material of head / strap	StSt
Clamping range Ø	50-300 mm
Dimensions of strap	1100 x 25 x 0.3 mm
Material of screw	StSt
PU	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901) in case of larger pipe diameters.



Type	SPK 25X0.3 V2A
Part No.	**106 324**
Material of head	StSt
For strap (w x d)	25 x 0.3 mm
Screw	M8 x 20 mm
Material of screw	StSt
PU	20 pc(s)

Tensioning strap



Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Strap dimensions (w x d)	25 x 0.3 mm
Length	100 m
PU	1 pc(s)

Connecting components 200 kA (10/350 µs)

For use in class of LPS I and II (LPL I, II).
Clamps are tested with a 200 kA (10/350 µs) lightning impulse current, based on EN 62561-1.

UNI disconnecting clamp for two round conductors



Type	UTK 200 2X10 FL30 ZP V2A
Part No.	459 200
Material	StSt
Clamping range Rd / Rd	10 / 10 mm
Clamping range Rd / Fl	10 / 30 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

UNI disconnecting clamp for earth entry rods



Type	UTK 200 8.10 16 ZP V2A
Part No.	459 219
Material	StSt
Clamping range Rd / Rd	8-10 / 16 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

Clamping piece



Type	KS 200 B11.11 FL30X4 V2A
Part No.	380 209
Material	StSt
Clamping range Fl	30 x 4 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

KS connector



Type	KSV 200 10 FER V2A
Part No.	301 209
Material	StSt
Clamping range Rd	10 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

MV clamp for round conductors



Type	MVK 200 8.10 SKM10X30 V2A
Part No.	390 209
Material	StSt
Clamping range Rd / Rd	8-10 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

MV clamp for air-termination rods



Type	MVK 200 8.10 16 SKM10X40 FSC V2A
Part No.	392 209
Material	StSt
Clamping range Rd / Rd	8-10 / 16 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

KS connector 100 kA (10/350 µs), one-piece, with spring washer



Type	KSV 7.10 FER STTZN	KSV 6.10 FER CU
Part No.	301 010	301 017
Material of clamping screw	St/tZn	Cu
Material of clamp	ZDC	RCB
Clamping range Rd	7-10 mm	6-10 mm
Connection (single-wire / multi-wire)	–	25-70 mm²
Type	+ spring washer	+ spring washer
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA *)	I_{imp} 100 kA *)
Standard	EN 62561-1	EN 62561-1
PU	100 pc(s)	100 pc(s)

KS connector 100 kA (10/350 µs), two-piece, with spring washer



Type	AP 2X6.10 V2A
Part No.	301 229
Material of clamping screw	StSt
Material of clamp	StSt
Clamping range Rd	6-10 mm
Type	+ spring washer
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA / I_{imp} 50 kA *)
Standard	EN 62561-1
PU	1 pc(s)

Stripping Tool for HVI power Conductors

Tool for stripping the semi-conductive sheath and the PE insulation of the HVI power Conductor (outer diameter 27 mm)

- Tool consists of a of handle and various exchangeable cutting heads
- Stripping length of the HVI power Conductor is adjustable in steps of 0.2 mm (lock points) using the knob. The dial on the handle shows the length set.

Handling
Position the cutting head at the end of the conductor and turn clockwise with light pressure to cut / strip it.
The cutting head can be exchanged without tools via the bayonet coupling.

HVI strip 27
For HVI power Conductors.



Type HVI ...	STRIP 27
Part No.	**597 227**
Diameter Ø conductor	27 mm
Material of moulded part	**plastic** / **Al**
Material of blade	**StSt**
PU	1 pc(s)

HVI head 27
For HVI power Conductor.



Type HVI ...	HEAD 27
Part No.	**597 127**
Diameter Ø conductor	27 mm
Material of moulded part	**Al**
Material of blade	**StSt**
PU	1 pc(s)

Accessories for Stripping Tool for HVI power Conductors

HVI head holder
Adapter with bayonet coupling for attaching the HVI head cutting head (pre-set stripping length 35 mm).
Adapter can be used in a standard three-jaw chuck (Ø10 mm), e.g. with cordless screwdrivers.



Type	HVI HH
Part No.	**597 139**
Material	**Plastic** / **brass**
PU	1 pc(s)

Spare blades for HVI head 27
1 pack = 4 pieces



Type	EK HVI HEAD 27
Part No.	**597 102**
Material	**StSt**
PU	1 PAK

Lateral replacement blades for HVI head 27



Type	EK SEIT HVI HEAD 27
Part No.	**597 103**
Material	**StSt**
PU	1 pc(s)

Cable shears for HVI Conductors

Cable shears for easily cutting the HVI light Conductor, HVI Conductor (outer diameter 20 / 23 mm), HVI power Conductor (outer diameter 27 mm) and CUI Conductor to length.
The special design of the cable shears also allows precise cutting of stranded conductors, making it easier to attach connection elements.

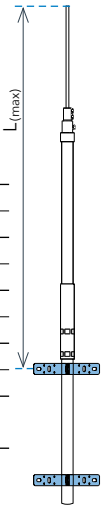


Type	HVI CUTTER 32
Part No.	**597 032**
Diameter Ø conductor	up to 32 mm
Material of blades	**tool steel** (CR-Moly (SCM440))
Material of handles	**carbon steel** (SS400)
Length	600 mm
Colour of handles	red (similar to RAL 3020) ●
PU	1 pc(s)

Max. Gust wind speeds in km/h for air-termination systems.

Wall assembly

Part No.	$L_{(max)}$ [mm]	Number of holders *)	Installation type outside	Installation type inside	
Al 105 563	3500	2 pc(s) *)	0	1	202
			1	0-1	191
Al 105 565	4000	3 pc(s) *)	0	1	202
			1	0-1	181
Al 105 573	5000	2 pc(s) *)	0	1	170
			1	0-1	147
Al 105 575	5500	3 pc(s) *)	0	1	168
			1	0-1	147
Al 819 760	8500	3 pc(s) *)	0	1	147
StSt 105 320 819 430	3500	2 pc(s) *)	0	1	234
StSt 105 322	4000	3 pc(s) *)	0	1	233
StSt 105 321 819 431	5000	2 pc(s) *)	0	1	163
StSt 105 323 819 433	5500	3 pc(s) *)	0	1	166

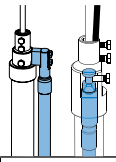


Max. Gust wind speeds in km/h for air-termination systems.

Tripod mounting – support tube

Cable in the support tube

Installation type outside | inside



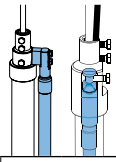
Number of concrete bases

Part No.	Height [mm]			Tripod, small, StSt (V2A), Part No. **107 390**				Tripod, large, StSt (V2A), Part No. **107 391**				Four-legged stand, small, StSt (V2A), Part No. **107 490**				Four-legged stand, large, StSt (V2A), Part No. **107 491**			
				3x	6x	9x	12x	3x	6x	9x	12x	4x	8x	12x	16x	4x	8x	12x	16x
Al	4500	0	1	95	124	149	180	121	163	201	201	120	166	201	201	159	201	201	201
105 513	3.5+1 m	1	0-1	–	104	124	140	103	132	159	189	99	132	166	190	132	182	190	190
Al	4500	0	1	No internal installation possible															
105 563	3.5+1 m	1	0-1	–	104	124	140	103	132	159	189	99	132	166	190	132	182	190	190
Al	6000	0	1	–	93	108	124	93	117	137	159	–	116	137	147	117	149	180	180
105 515	5+1 m	1	0-1	–	–	93	103	–	100	112	129	–	99	112	120	100	124	137	137
Al	6000	0	1	No internal installation possible															
105 565	5+1m	1	0-1	–	–	93	103	–	100	112	129	–	99	112	120	100	124	137	137
Al	6000	0	1	–	108	129	147	105	137	168	168	105	137	168	168	137	168	168	168
105 543	3.5+2.5 m	1	0-1	–	95	112	124	95	120	140	144	93	120	144	144	120	144	144	144
Al	6000	0	1	No internal installation possible															
105 573	3.5+2.5 m	1	0-1	–	95	112	124	95	120	140	144	93	120	144	144	120	144	144	144
Al	7500	0	1	–	–	100	110	–	105	124	140	–	105	124	124	105	137	144	144
105 545	5+2.5 m	1	0-1	–	–	–	97	–	93	105	121	–	93	105	110	93	117	124	124
Al	7500	0	1	No internal installation possible															
105 575	5+2.5 m	1	0-1	–	–	–	97	–	93	105	121	–	93	105	110	93	117	124	124
StSt	4500	0	1	95	121	147	176	122	159	201	231	120	165	221	231	159	231	231	231
105 392	3.5+1 m																		
StSt	6000	0	1	–	93	108	122	95	117	137	159	93	117	137	163	120	159	193	230
105 394	5+1 m																		
StSt	7500	0	1	–	–	100	111	–	108	124	140	–	105	124	140	110	237	155	155
105 395	5+2.5 m																		

Tripod mounting – support tube

Cable in the support tube

Installation type outside | inside



Number of concrete bases

Part No.	Height [mm]			Tripod, small, St/tZn, Part No. **105 351**				... arrow arrangement Part No. **105 351**				Tripod, large, St/tZn, and Bracing, StSt (V2A), Part No. **105 201 + 105 601**				Supporting tube stand Part No. **105 244**
				3x	6x	9x	12x	3x	6x	9x	12x	3x	6x	9x	12x	
Al	4500	0	1	Minimum bending radius!		149	180	Minimum bending radius!		121	137	Installation without bracing does not make sense				–
105 563	3.5+1 m	1	0-1	–	104	124	137	–	–	101	116					179
Al	6000	0	1	Minimum bending radius!		129	147	Minimum bending radius!		105	120					–
105 573	3.5+2.5 m	1	0-1	–	95	110	124	–	–	93	105					144
Al	6000	0	1	Installation without bracing does not make sense				Installation without bracing does not make sense				No internal installation possible				–
105 565	5+1m	1	0-1									–	101	117	132	112
Al	7500	0	1									No internal installation possible				–
105 575	5+2.5 m	1	0-1									–	96	110	124	105
StSt	4500	0	1	Minimum bending radius!		149	177	Minimum bending radius!		120	137	No internal installation possible				No internal installation possible
105 320	3.5+1 m															
StSt	6000	0	1	Minimum bending radius!		124	144	Minimum bending radius!		103	117					
105 321	3.5+2.5 m															



Protection against Step and Touch Voltage

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Protection against Step and Touch Voltage Page 164

Protection against Step and Touch Voltage

IEC/EN 62305-3 points out that in special cases the risk of step and touch voltage outside a building may be extremely high near the down conductors, although there is a lightning protection system in accordance with the current state of standardisation. Special cases are, for example, if bare/uninsulated down conductors and lightning protection earth electrodes are installed near the entrance or sheltering areas of buildings with high visitor frequency, such as theatres, cinemas, shopping centres, etc. Buildings or structures with public access (e.g. shelters) which are particularly exposed (lightning endangered) may also require protection measures against step and touch voltage.

Protection against touch voltage

Touch voltage means a life-threatening voltage that affects a person who touches the down conductor while standing on the ground within a distance of about 1 m from the down conductor. The current flows through the hand into the body and down to the feet (see Figures 1/2).

The hazardous area for people outside of the building is defined as an area of 3 m around the down conductor and from ground level up to a height of approx. 3 m.

Effective protection measures against injuries due to touch voltage are defined according to the standard:

- Installation of an insulated (coated) down conductor providing a surge withstand capability of 100 kV at 1.2/50 µs, e.g. at least 3 mm thick cross-linked polyethylene;
- physical restrictions and/or warning signs to minimise the possibility of down conductors being touched.

The CUI conductor (CU copper Insulated) has an inner cooper conductor with a diameter of 8 mm and a high-voltage-resistant insulation.

Requirements:

- Surge withstand capability of 100 kV (1.2/50 µs)
- Prevention of creepage sparkover even during rain

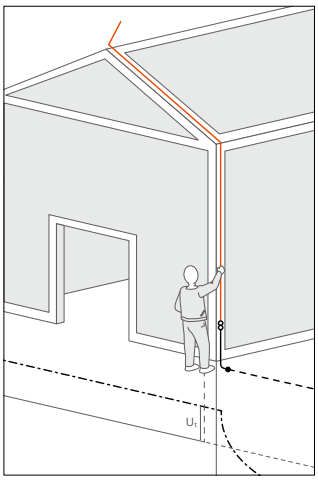


Figure 1: Schematic diagram – tough voltage U_t

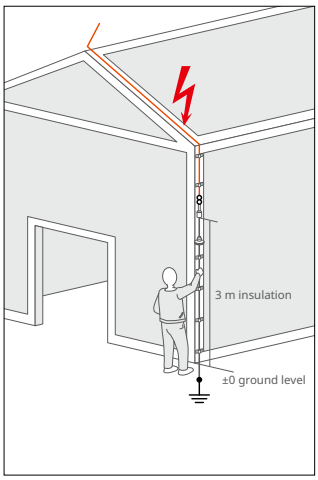


Figure 2: Protective measures

The surge withstand capability of 100 kV (1.2/50 µs) is achieved by a special cross-linked polyethylene insulation (XLPE). Unless additional measures are taken, high impulse voltages cause sparkover on insulating surfaces. This effect is known as creeping discharge. If the creeping discharge inception voltage is exceeded, a surface discharge will be initiated, which can easily spark over a distance of several metres to earthed parts.

In order to avoid the occurrence of creeping discharges even during rain, the CUI conductor additionally has a shield which keeps the conductor dry. Figure 3 shows this shield on the conductor and the drops after the rain test.

Development of the CUI conductor is based on the "rain test" according to IEC 60-1 Subclause 9 (see Figure 3).



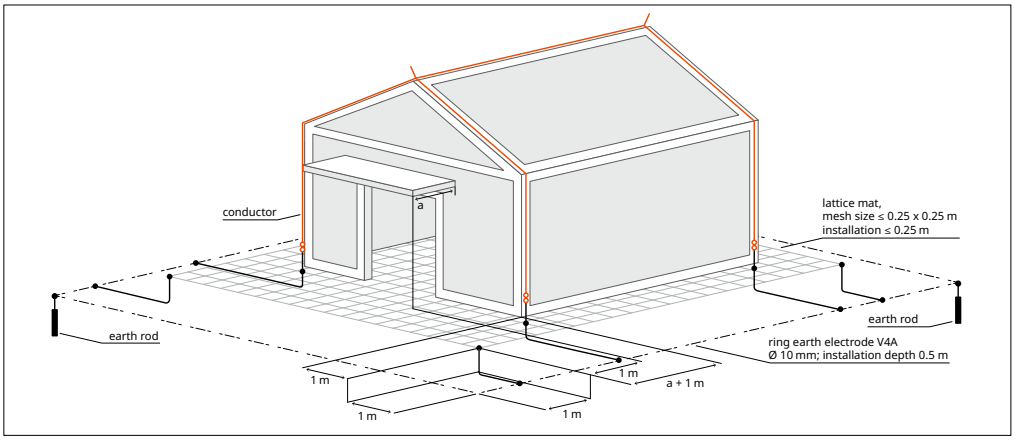
Figure 3: Rain test



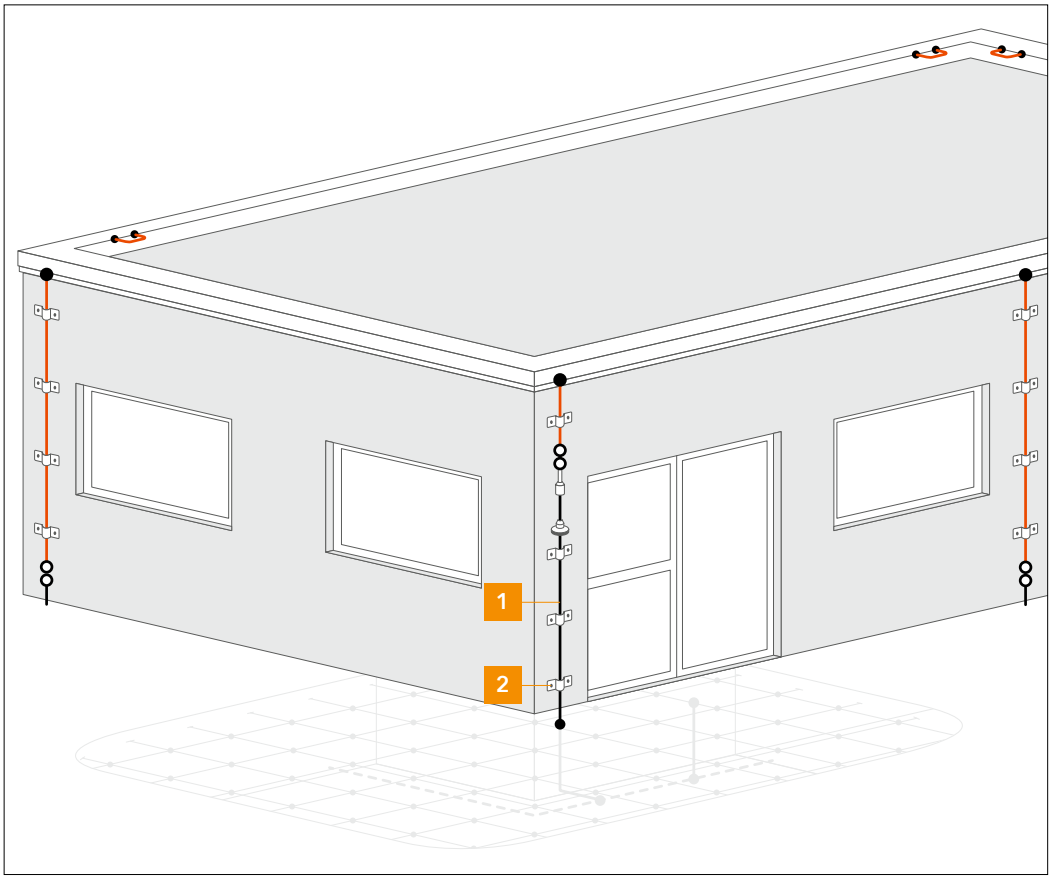
Application in the entrance area

Protection against step voltage

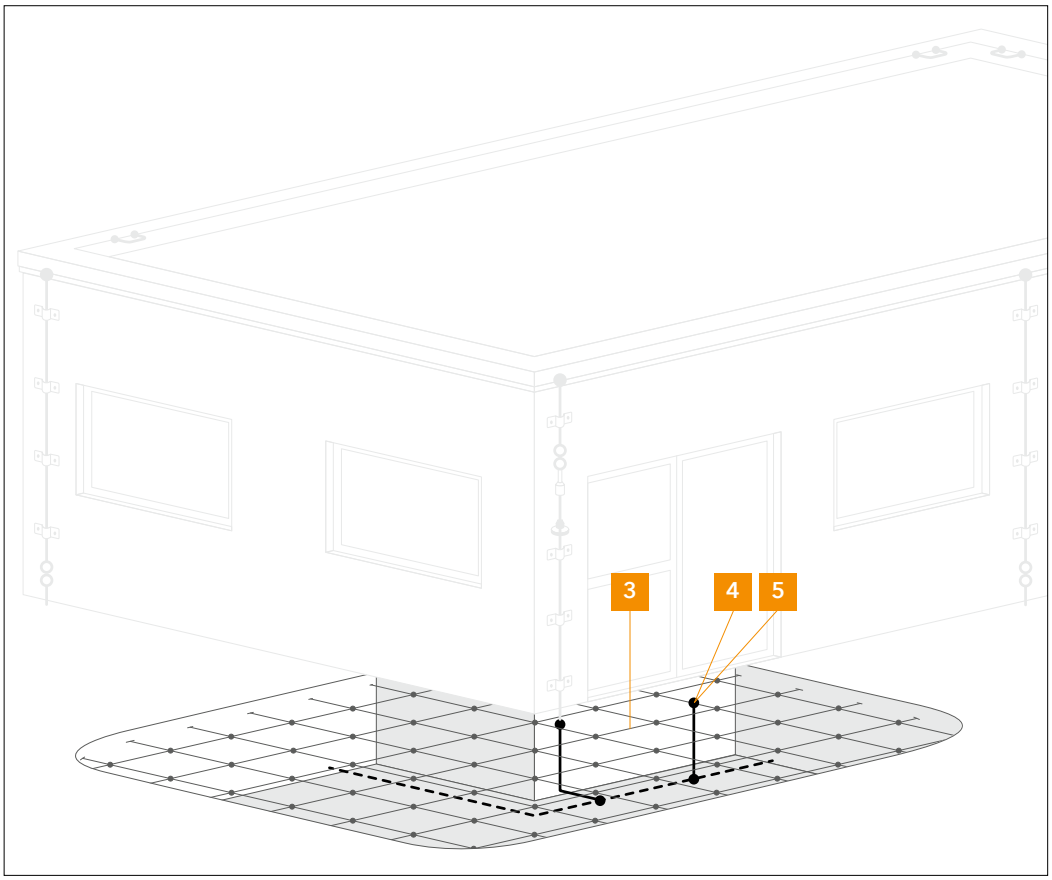
IEC/EN 62305-3 not only mentions the risk of touch voltage, but also the risk of step voltage. The risk for living beings can be reduced by protective measures. In addition to increasing the earth resistivity of the upper ground layer (ground insulation, e.g. asphalt), potential control can also be achieved by installing a close metal grid (mesh mat) in the foundation/ground in areas where people stand (max. mesh size 0.25 m x 0.25 m). In addition, a ring earth electrode should be laid 1.0 m away from the mats at a depth of 0.5 m. Lattice mats should be installed at least 1.0 m beyond the area to be protected (e.g. building boundary). If the enclosed area of the ring earth electrode is ≤ 78.5 m², at least two earth rods, should be installed. If the area is >78.5 m² one earth rod each per down conductor is required (9 m proved to be advantageous). An earth resistance of less than 10 Ω is recommended. The described protection measure is based on a maximum earth resisitivty of 2000 Ωm.



Protection against touch voltage



Protection against step voltage



Product

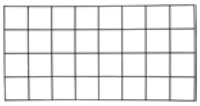
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CUI Conductor

Touch voltage on down conductors can be prevented by using the CUI Conductor.

The dangerous area of touch and step voltages for living beings is defined as an area of approx. 3 m around the down conductor, from ground level up to a height of approx. 3 m.

The CUI Conductor has a copper core and a high-voltage-resistant insulation.

These conductors must:

- have a impulse withstand voltage of 100 kV (1.2/50 µs)
- prevent creeping sparkover even during rain



Type CUI L 20 GR ...	3.5M	5M
Part No.	**830 208**	**830 218**
Material of conductor	Cu	Cu
Material of insulation	**XLPE**	**XLPE**
Diameter Ø conductor	20 mm	20 mm
Standard	EN 62561-2	EN 62561-2
Colour of conductor	light grey	light grey
Cross-section of core	50 mm²	50 mm²
Total length	3500 mm	5000 mm
PU	1 pc(s)	1 pc(s)

Conductor Holders for CUI Conductor

For installing the CUI conductor on walls or façades.

Height 19 mm



Type LH ...	ZS 20 H19 IGM8 GR PA
Part No.	**275 220**
Material of conductor holder	**PA**
Conductor support Rd	20-21 mm
Fixing	Ø6.5 mm
Standard	DIN IEC/TS 62561-8 (VDE V 0185-561-8)
PU	25 pc(s)

Height 10 mm



Type LH ...	ZS 20 H10 B6.5X16 V2A
Part No.	**275 229**
Material of conductor holder	StSt
Conductor support Rd	20-21 mm
Fixing	6.5 x 16 mm
Standard	EN 62561-4
PU	50 pc(s)

Two-screw clamp for mounting directly on the wall



Due to the special kind of installation (without a gap), the conductor cannot be misused as a climbing aid and is therefore especially suitable for schools or kindergarten facilities.

Type LH ...	ZSUEL 20 2XB6.5 V2A
Part No.	**275 129**
Material of conductor holder	StSt
Conductor support Rd	20 mm
Fixing	[2x] 6.5 x 8 mm
PU	10 pc(s)

Stripping Tool for CUI Conductors

Tool for stripping the XLPE insulated CUI Conductor (outer diameter 20 mm).

- Tool consists of a handle and an exchangeable cutting heads
- Stripping length of the CUI Conductor is adjustable in steps of 0.2 mm (lock points) using the knob in the handle. The dial on the handle shows the length set.

Handling
Position the cutting head at the cut-off end of the conductor and turn clockwise applying light pressure to cut/strip it.

CUI-strip 20



Type CUI ...	STRIP 20
Part No.	**597 320**
Diameter Ø conductor	20 mm
Material of moulded part	**plastic**
Material of blade	StSt
PU	1 pc(s)

CUI-head 20

Toolless exchange of the cutting head via a bayonet coupling.



Type CUI ...	HEAD 20
Part No.	**597 020**
Diameter Ø conductor	20 mm
Material of moulded part	**plastic**
Material of blade	StSt
PU	1 pc(s)

Sign Lightning voltage

Sign warning of the hazard of direct lightning strikes, e.g. on park decks (without air-termination systems) or other areas.

Lightning voltage

Front in German
"ACHTUNG! Blitzspannung
Bei Gewitter Bereich räumen / nicht betreten"

Reverse side in English
"ATTENTION! Lightning voltage
Clear / do not enter this area during thunderstorms"



Type	HWS 297X210 ABS DE EN AL
Part No.	**480 698**
Material	Al
Dimensions (l x w x d)	297 x 210 x 0.7 mm
Fixing	[4x] Ø6.5 mm
PU	1 pc(s)

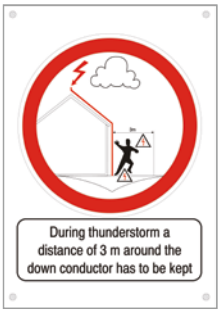
Sign Step and touch voltage

In case of step and touch voltage hazard for living beings. In accordance with the requirements of IEC/EN 62305-3.

Step and touch voltage

Front in German:
Bei Gewitter ist der Aufenthalt im Umkreis von 3 m um die Ableitung verboten!

Reverse side in English:
During thunderstorm a distance of 3 m around the down conductor has to be kept!

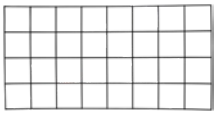


Type	HWS 297X210 AGU3MV DE EN AL
Part No.	**480 699**
Material	Al
Dimensions (l x w x d)	297 x 210 x 0.7 mm
Fixing	[4x] Ø6.5 mm
PU	1 pc(s)

Potential Control

Mesh mats for potential control in shelters and entrance areas.

Mesh mat for protection against step voltage



As per VDE/ABB leaflet "Blitzschutz von Schutzhütten" ("Lightning Protection of Shelters")

If the mesh mats are laid so they overlap, around 6x connecting clamps (with anti-corrosion tape part. no. 556 125) are required per mesh mat.
Please refer to the related installation instructions for more precise data.

Note:
The mesh mats are pickled and passivated in accordance with the normative requirements of DIN VDE 0151.

Type GMA ...	250 2000X1000X4 V4A
Part No.	**618 214**
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Dimensions (l x w x d)	2000 x 1000 x 4 mm
Mesh size	250 mm
PU	1 pc(s)

Connecting clamp for mesh mats



Clamp for interconnecting mesh mats or for connecting mesh mats with earth-termination systems.

Type	MMVK 3.5 8.10 SKM8X30 V4A	UEK 8.10 AQ3/4 M8 V4A
Part No.	**540 271**	**540 270**
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Clamping range Rd	3-10 mm	–
Clamping range Rd / Rd	–	8-10 / 3-4 mm
Clamping range Rd / Rd	–	3-4 / 3-4 mm
Connection (single-wire / multi-wire)	16 mm²	4-50 mm²
Lightning impulse current carrying capability (10/350 µs)	25 kA	25 kA
Standard	based on EN 62561-1	based on EN 62561-1
PU	50 pc(s)	50 pc(s)

Accessories for Potential Control

Stainless steel wire



Stainless steel wire (Rd 10 mm) for use in soil has to be made of StSt (V4A) with a molybdenum content of > 2 %, e.g. 1.457, according to EN 62561-2, IEC/EN 62305-3, DIN 18014 and DIN VDE 0151.

General technical data:	
Diameter Ø conductor	10 mm
Cross-section	78 mm²
Material	StSt (V4A)
Material No.	1.4571 / 1.4404
Standard	EN 62561-2
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	2.9 kA

Type	RD 10 V4A R80M	RD 10 V4A R20M
Part No.	**860 010**	**860 020**
Conductor length	80 m	20 m
Coil weight	approx. 50 kg	approx. 12 kg
PU	80 m	20 m

Type	RD 10 V4A R50M
Part No.	**860 050**
Conductor length	50 m
Coil weight	approx. 31 kg
PU	50 m

Connection lug, straightened



For connecting the down conductors to the earth-termination system; made of corrosion-resistant stainless steel StSt.

General technical data:	
Material	StSt (V4A)
Material No.	1.4571 / 1.4404
Dimensions	Ø10 mm
Cross-section	78 mm²
Standard	EN 62561-2

Type	AF 10 V4A 1000	AF 10 V4A 1500
Part No.	**860 110**	**860 115**
Length	1000 mm	1500 mm
PU	5 pc(s)	5 pc(s)

Type	AF 10 V4A 3000
Part No.	**860 130**
Length	3000 mm
PU	5 pc(s)

MV clamp



Multipurpose connecting clamp (**M**ehrzweck **V**erbindungs-Klemme) for universal use as a cross, T and parallel clamp; two-piece.

Type	MVK 8.10 SKM10X35 V4A
Part No.	**390 079**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404
Clamping range Rd	8-10 mm
Connection (solid/stranded)	35-70 mm²
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	4.7 kA
PU	50 pc(s)

SV clamp

Diagonal connecting clamp (**S**chräg-**V**erbinder-Klemme) for cross and T connections, screws with anti-rotation protection.



Type	SVK 7.10 7.10 FL40 V4A
Part No.	**308 329**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
Clamping range Rd / Rd	7-10 / 7-10 mm
Clamping range Rd / Fl	7-10 / 30-40 mm
Clamping range Fl / Fl	30-40 /30-40 mm
Clamping range (stranded / cable)	35-120 mm²
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	14.0 kA
PU	25 pc(s)

UNI disconnecting clamp

For connecting the down conductors with the earth entry rods.



Type	UTK 8.10 8.10 ZP V2A
Part No.	**459 129**
Material	StSt
Clamping range Rd / Rd	8-10 / 8-10 mm
Distance of screws	40 mm
Standard	EN 62561-1
PU	50 pc(s)

Conductor holder DEHNhold

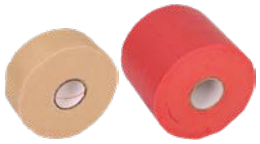
Conductor holder for fixing round conductors with slotted saddle clamp, fixed conductor routing.



Type	LH ZS 8.10 FL20 KS KD8X40 V2A
Part No.	**274 160**
Material of conductor holder	StSt
Conductor support Rd	8-10 mm
Conductor support Fl	20 mm
Height of conductor holder	20 mm
Thread of conductor holder	M8
Screw	5 x 50 mm
Standard	EN 62561-4
PU	50 pc(s)

Anti-corrosion tapes

Anti-corrosion tape for protecting underground connections, such as clamp and screw connections.
The permanently plastic anti-corrosion tape, petrolatum-coated on both sides, effectively prevents the penetration of dirt and moisture.



General technical data:	
Material	**Petrolatum**
Length	10 m
Tape thickness	≥ 1.1 mm
Max. continuous operating temperature	30 °C

Type	KSB 50 L10M	KSB 100 L10M
Part No.	**556 125**	**556 130**
Colour	brown / beige	brown / beige
Width of tape	50 mm	100 mm
Perforation spacing	–	–
PU	24 pc(s)	12 pc(s)

Type	KSB PERF RED 50 L10M	KSB PERF RED 100 L10M
Part No.	**557 125**	**557 130**
Colour	rot	rot
Width of tape	50 mm	100 mm
Perforation spacing	approx. 200 mm	approx. 200 mm
PU	24 pc(s)	12 pc(s)

Earth Mats

BS EN 13601 C101

Earthing Lattices

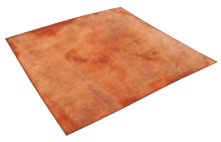
Earth plate lattice copper



Type	EML 600X600X3 CU	EML 900X900X3 CU
Part No.	**138 110**	**138 111**
Material	Copper	Copper
Dimensions	600 x 600 x 3 mm (0.36 m²)	900 x 900 x 3 mm (0.81 m²)
Approvals	BS EN 13601	BS EN 13601
PU	1 pc(s)	1 pc(s)

Earthing Plates

Earth plate solid copper



General technical data:	
Material	Copper
Approvals	BS EN 13601

Type	EMP 600X600X1.5 CU	EMP 900X900X1.5 CU
Part No.	**138 115**	**138 116**
Dimensions	600 x 600 x 1.5 mm (0.36 m²)	900 x 900 x 1.5 mm (0.81 m²)
PU	1 pc(s)	1 pc(s)

Type	EMP 600X600X3 CU	EMP 900X900X3 CU
Part No.	**138 118**	**138 119**
Dimensions	600 x 600 x 3 mm (0.36 m²)	900 x 900 x 3 mm (0.81 m²)
PU	1 pc(s)	1 pc(s)



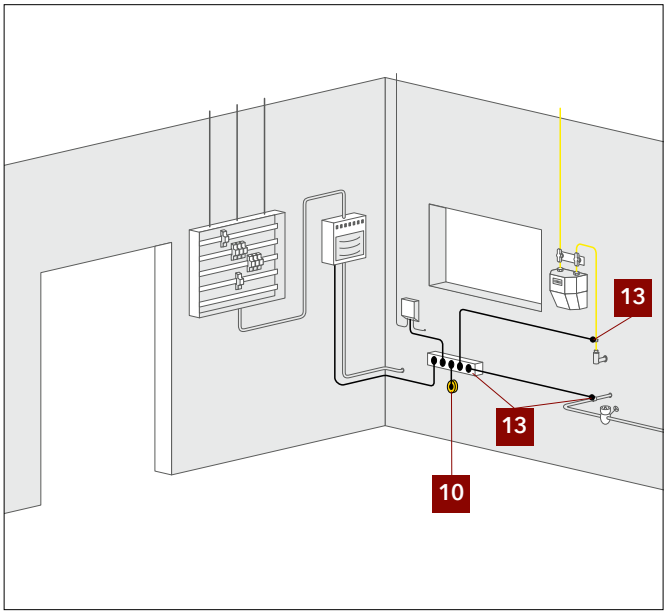
Earthing / Equipotential Bonding

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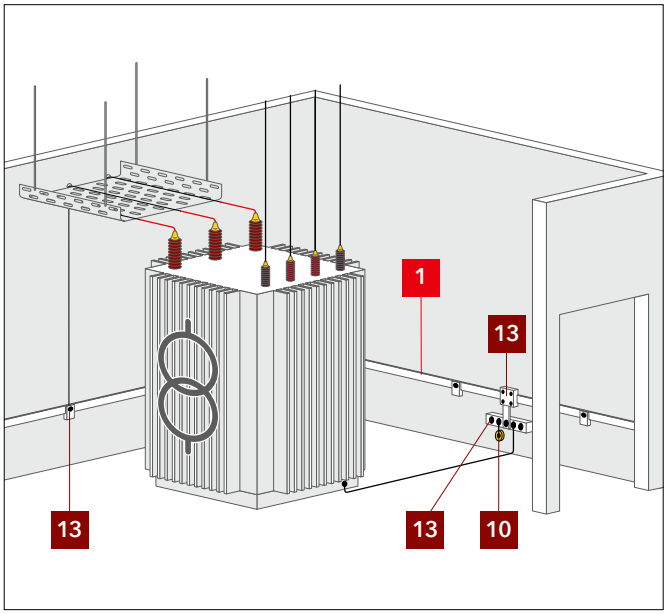
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Equipotential Bonding for Ex Areas	Page 213
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Earthing / Equipotential Bonding

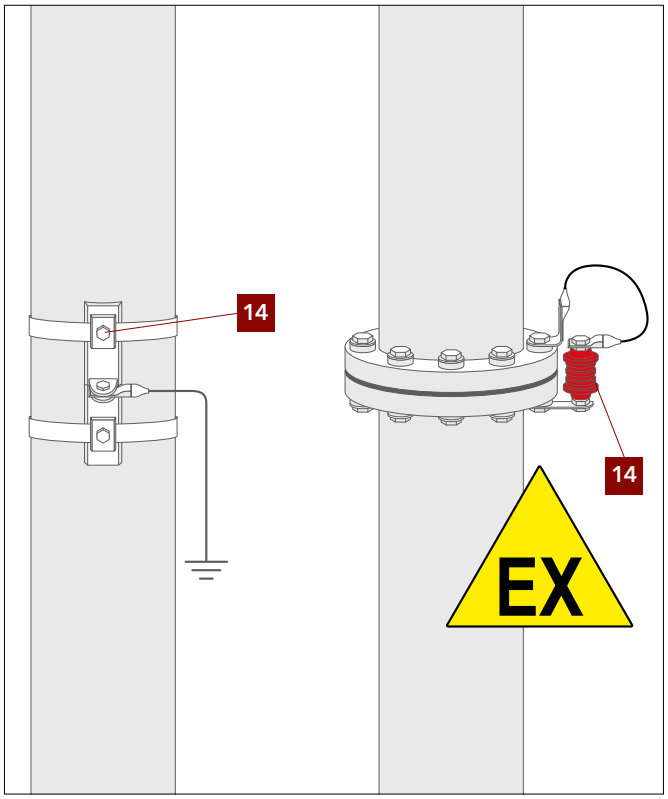
Protective equipotential bonding via main earthing busbar



Protective equipotential bonding in a transformer room



Equipotential bonding in Ex areas



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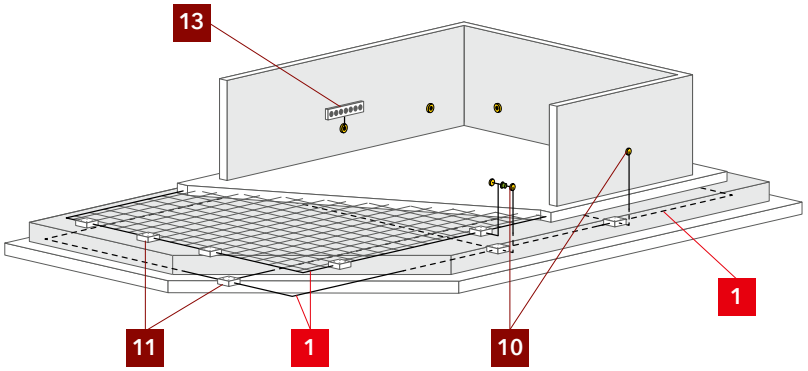
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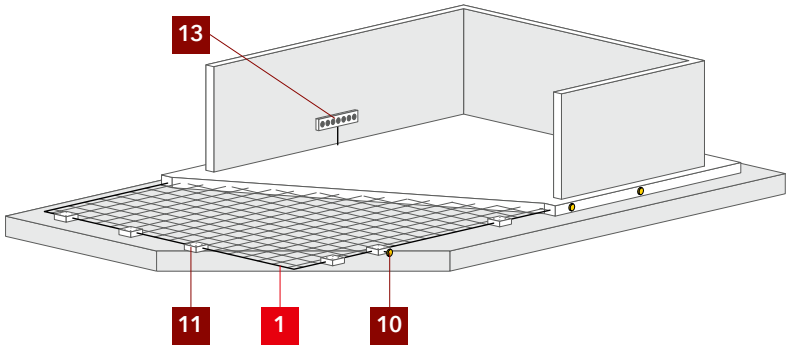
Earthing / Equipotential Bonding

Foundation earth electrode in accordance with DIN 18014 with lightning protection system



Insulated reinforced floor slab as black or white tank (waterproof concrete) with full perimeter insulation, dimpled membrane.

Foundation earth electrode in accordance with DIN 18014 without lightning protection system



Reinforced floor slab, not waterproof concrete.

Product	
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Fixed Earthing Terminal / Wall Bushings



Fixed Earthing Terminals

For installation in concrete as a corrosion-free connection to the earth-termination system for protective equipotential bonding and / or functional equipotential bonding of the down conductor, e.g. to the reinforcement of buildings.
Please observe the following minimum screw lengths for the M10 and M12 double threads:
35 mm of M10 (thread length 40 mm)
15 mm of M12 (thread length 20 mm)

Type M

With connecting shaft
(l = 180 mm, Ø10 mm).



Type	EFPM M10 12 V4A L230 STTZN	EFPM M10 12 V4A L230 V2A
Part No.	**478 011**	**478 019**
Connection thread	M10 / M12	M10 / M12
Material of plate	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Material of shaft	**St/tZn**	StSt
Connection plate Ø	80 mm	80 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	6.5 kA	3.9 kA
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

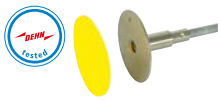
Type M without connecting shaft



Type	EFPM M10 12 V4A
Part No.	**478 012**
Connection thread	M10 / M12
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Connection plate Ø	80 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	9.3 kA (with copper cable lug)
Standard	EN 62561-1
PU	20 pc(s)

Type M, press-fitted

Connecting shaft (l = 180 mm, Ø10 mm).

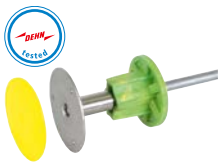


Type	EFPM M10 12 V4A L245 VP STTZN	EFPM M10 12 V4A L245 VP V2A
Part No.	**478 041**	**478 049**
Connection thread	M10 / M12	M10 / M12
Material of plate	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Material of shaft	**St/tZn**	StSt
Connection plate Ø	80 mm	80 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.7 kA	3.3 kA
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Part No. 478 049 with UL approval.

Type M, press-fitted, with additional water barrier

Protection against water ingress along the shaft into the wall (tested according to EN 62561-5 with 5 bar compressed air and 1 bar pressure water). Suitable for waterproof concrete.



Type	EFPM M10 12 V4A WS L245 VP STTZN
Part No.	**478 051**
Connection thread	M10 / M12
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Material of shaft	**St/tZn**
Connection plate Ø	80 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.7 kA
Material of water barrier	**PVC**
Standard	EN 62561-1
PU	10 pc(s)

Type M with MV clamp

For round conductors 8-10 mm, space-saving installation in the formwork.



Type	EFPM M10 12 V4A MVK8.10 STTZN
Part No.	**478 112**
Connection thread	M10 / M12
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Material of MV clamp	**St/tZn**
Clamp Rd / Rd clamping range	8-10 mm
Connection plate Ø	80 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	9.3 kA
Type	with O-ring and MV clamp
Standard	EN 62561-1
PU	25 pc(s)

Type K

With plastic ring and connecting shaft (l = 180 mm, Ø10 mm).



Type	EFPK M10 12 V4A L230 STTZN
Part No.	**478 200**
Connection thread	M10 / M12
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Material of shaft	**St/tZn**
Connection plate Ø	46 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	6.5 kA
Standard	EN 62561-1
PU	25 pc(s)

Accessories for Fixed Earthing Terminals

Foam pad

Foam pad is attached to the yellow protective cover of the fixed earthing terminal (see installation instructions DS1476). One side adhesive, with pull-off tab.



Using the foam pad enables a position compensation of approx. 20 mm at the formwork and makes it easier to find and expose the fixed earthing terminal after concreting.

Type	SSP D90 H20
Part No.	**478 098**
Diameter Ø	90 mm
Height	20 mm
PU	10 pc(s)

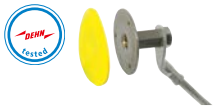
Hexagon screws



Type	SKS M10X35 DIN 933 V2A
Part No.	**561 923** NEW
Screw	M10x35 mm
Material	StSt
PU	1 pc(s)

Fixed Earthing Terminal M16

With M16 connection thread for higher current loads (50 Hz), e.g. for connecting the ring equipotential bonding system with the earth-termination systems of power installations with nominal AC voltages over 1 kV (transformer earthing).



Type	EFP M16 V4A SL400
Part No.	**478 027**
Connection thread	M16
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Material of cable	**Cu/gal Sn**
Cross-section of connecting cable	70 mm²
Length of connecting cable	400 mm
Diameter Ø connecting cable	10.5 mm
Connection plate Ø	80 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	11 kA
PU	10 pc(s)

Fixed Earthing Terminals with flexible Connection Clamp

For installation in concrete as a flexible corrosion-free connection to the earth-termination system for protective equipotential bonding and/or functional equipotential bonding of the down conductor, e.g. to the reinforcement of buildings.



Type UES 16 ...	L600 VK RD8 28 FL30 EFP	L1000 VK RD8 28 FL30 EFP
Part No.	**416 940**	**416 950** NEW
Connecting clamp material	**St/bare**	**St/bare**
Clamping range Rd connecting clamp	8-28 mm	8-28 mm
Clamping range Fl connecting clamp	30 x 3-4 mm	30 x 3-4 mm
Fixed earthing terminal material	StSt (V4A)	StSt (V4A)
Fixed earthing point terminal thread	M10 / M12	M10 / M12
Bridging cable material	Flexible copper conductor, frost-resistant	Flexible copper conductor, frost-resistant
Bridging cable cable length	600 mm	1000 mm
Bridging cable cable cross section	16 mm²	16 mm²
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Connecting Clamps for Fixed Earthing Terminals and Reinforcement

For connecting the reinforcement with clamping piece.

For round conductors or fixed earthing terminals with simultaneous fixing in the formwork.

Arrangement: (II) = parallel (+) = cross

For small diameters



Type	VK 6.22 FL40 KB6.10 BSB STBL
Part No.	**308 035**
Material	**St/bare**
Clamping range Rd / Rd	(+/II) 6-22 / 6-10 mm
Clamping range Rd / Fl	(+) 6-22 / 40 mm
Screw	M10 x 60 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	1.0 kA
PU	25 pc(s)

U-clamp for large diameters



Type	BVK 16.48 FL40 KB6.10 BSB STBL
Part No.	**308 046**
Material	**St/bare**
Clamping range Rd / Rd	(+/II) 16-48 / 6-10 mm
Clamping range Rd / Fl	(II) 16-48 / 30-40 mm
Screw	U-bolt M10 x 48 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	9.9 kA
PU	25 pc(s)

Connection and bridging Device for Reinforcements

Connection and bridging device for using the reinforcing bars (longitudinal bars) of reinforced concrete supports or walls as a down conductor.

Connection device



Special lengths possible on request.
*) For exact assignment, see test certificate.

Type UES 16 ...	L600 VK RD8 28 FL30 EFP	L1000 VK RD8 28 FL30 EFP
Part No.	**416 940**	**416 950** NEW
Connecting clamp material	**St/bare**	**St/bare**
Clamping range Rd connecting clamp	8-28 mm	8-28 mm
Clamping range Fl connecting clamp	30 x 3-4 mm	30 x 3-4 mm
Fixed earthing terminal material	StSt (V4A)	StSt (V4A)
Fixed earthing point terminal thread	M10 / M12	M10 / M12
Bridging cable material	Flexible copper conductor, frost-resistant	Flexible copper conductor, frost-resistant
Bridging cable cable length	600 mm	1000 mm
Bridging cable cable cross section	16 mm²	16 mm²
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Bridging device



Special lengths possible on request.
*) For exact assignment, see test certificate.

Type UES 16 ...	L600 2VK RD8 28 FL30
Part No.	**416 941**
Connecting clamp material	**St/bare**
Clamping range Rd connecting clamp	8-28 mm
Clamping range Fl connecting clamp	30 x 3-4 mm
Bridging cable material	Flexible copper conductor, frost-resistant
Bridging cable cable length	600 mm
Bridging cable cable cross section	16 mm²
Standard	EN 62561-1
PU	25 pc(s)

End Pieces

Screwed to the fixed earthing terminal to connect, e.g. an equipotential bonding bar or structural parts such as steel girders, etc.

Basic design



Universal use for M10 and M12 connections, e.g. at the fixed earthing terminal.

For connection of Rd, e.g. with KS connector (Part No. 301 019), or Fl with M10 or M12 screws and nuts.

Type ES ZF ...	2XB18 V2A
Part No.	**390 499**
Material	StSt
Hole Ø	10.5 / 12.5 mm
PU	50 pc(s)

Design with square holes



Dimensions 11x11 mm, for connecting Rd, e.g. with KS connector (Part No. 301 019), or Fl with M10 screws and nuts.

Type ES ZF ...	2X11.11 1XB13 V2A
Part No.	**390 479**
Material	StSt
Distance of holes	30 mm
Hole Ø	13 mm
PU	50 pc(s)

Design with holes and KS connector



With holes Ø11 mm.

Type ES ZF ...	2XB11 KSV 7.10 STTZN
Part No.	**363 010**
Material	**St/tZn**
Distance of holes	22 mm
Hole Ø	11 mm
Clamping range Rd	7-10 mm
Standard	EN 62561-1
PU	50 pc(s)

Design with holes



With holes Ø11 mm.

Type ES ZF ...	3XB11 STTZN
Part No.	**363 000**
Material	**St/tZn**
Distance of holes	22 mm
Hole Ø	11 mm
PU	50 pc(s)

Connection Clamps with Threaded Bolt

For connecting round and flat conductors to fixed earthing terminals with M10 / M12 thread (e.g. Part Nos. 478 011, 478 200) and M16 thread (Part No. 478 027). Clamps with M10 thread are also suitable for installation on the rear side of the fixed earthing terminal (without connecting shaft), e.g. to connect a flat strip.

Heavy design M10



Type AK ...	7.10 FL40 GBM10X45 STTZN
Part No.	**478 141**
Material of clamp	**St/tZn**
Clamping range Rd / Fl	7-10 / 30-40 mm
Clamping range (stranded / cable)	35-95 mm²
Dimensions	70 x 70 x 3 mm
Standard	EN 62561-1
PU	10 pc(s)

Heavy design M12



Type AK ...	7.10 FL40 GBM12X55 V4A
Part No.	**478 149**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd / Fl	7-10 / 30-40 mm
Dimensions	70 x 70 x 3 mm
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	3.3 kA
PU	10 pc(s)

Heavy design M16



Type AK ...	7.10 FL40 GBM16X65 V4A
Part No.	**478 150**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd / Fl	7-10 / 30-40 mm
Clamping range (stranded / cable)	35-95 mm²
Dimensions	70 x 70 x 3 mm
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	5.9 kA
PU	10 pc(s)

Light design M10



Type AK ...	ZS 8.10 FL30 GBM10X60 V4A
Part No.	**478 129**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd / Fl	8-10 / 30 mm
Clamping range (stranded / cable)	35-95 mm²
Dimensions	58 x 30 x 2.5 mm
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	2.7 kA
PU	10 pc(s)

Threaded Adapter

For connection to fixed earthing terminals with M10 thread, lock nut and spring washer, for use in case of perimeter insulation or thermal insulation composite systems.



Type	GAD EFP M10 10 L130 V4A
Part No.	**478 699**
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Female thread	M10 x 25 mm
Male thread	M10 x 80 mm
Total length	130 mm
Standard	EN 62561-1
PU	10 pc(s)

Wall Bushings

With MV clamp made of StSt (V4A) for round conductors 8–10 mm.
Water-pressure-tight wall bushing for leading earthing conductors / equipotential bonding conductors through brickwork or walls; with M10 threaded rod made of StSt.
For subsequent installation through borehole (Ø14 mm) or through spacer in the formwork.
Test for water pressure-tightness up to 1 bar features an installation depth of 10 m in stagnant water.



General technical data:	
Sealings	Neoprene
Sealing disc Ø	80 mm
Material of disc	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.7 kA
Standard	EN 62561-1

Type EWD MVK8.10 M10 ...	L100 300 V4A	L300 500 V4A
Part No.	**478 410**	**478 430**
Length of bushing (l2)	100-300 mm	300-500 mm
Length of threaded rod (l1)	308 mm	508 mm
PU	5 pc(s)	5 pc(s)

Type EWD MVK8.10 M10 ...	L500 700 V4A
Part No.	**478 450**
Length of bushing (l2)	500-700 mm
Length of threaded rod (l1)	708 mm
PU	1 pc(s)

Water-Pressure-Tight Wall Bushings for White Tank

For installation in the formwork.
Is suitable for water-pressure-tight wall bushings; e.g. for connecting the ring earth electrode with the equipotential bonding bar or the equipotential bonding conductor in the foundation.



General technical data:	
Material of plate	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Material of axis	**St/tZn**
Connection thread	M10 / 12
Connection plate Ø	80 mm
Standard	EN 62561-(1+5)

Type WD M10 12 V4A ...	DWD L200 300 STTZN	DWD L300 400 STTZN
Part No.	**478 530**	**478 540**
Wall thickness (l1)	200-300 mm	300-400 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.6 kA	2.4 kA
PU	10 pc(s)	4 pc(s)

Type WD M10 12 V4A ...	DWD L400 500 STTZN
Part No.	**478 550**
Wall thickness (l1)	400-500 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2 kA
PU	4 pc(s)

Sealing Collar for round and flat Conductors

Water-pressure-tight sealing collar for round conductors (Ø8-10 mm) and flat conductors (30 x 3.5 mm) with waterproof foundation slabs / walls (e.g. watertight concrete constructions).

With torque control spanner for easy tightening of the two stainless steel tensioning straps.

MPA-tested to 5.0 bar, methane-resistant, radon-safe (as per FHRK leaflet MB 101)

Waterproof concrete construction guideline: Load class 1 + 2.



Type	DM RD8.10 FL30X3.5 D114MM TPE
Part No.	**478 597**
Sealing collar material	**Thermoplastic elastomer (TPE)**
Material of tensioning straps	**StSt**
Diameter of sealing collar	114 mm
Bushing / seal, Rd.	8-10 mm
Bushing / seal, Fl.	30 x 3.5 mm
PU	12 pc(s)

Earth Points

Earth Points connect reinforced steel bars used as down conductors to the Lightning Protection and/or Earthing System using mechanical clamps or Exo-thermic Welding. For connecting flat and stranded conductors in parallel or T connection arrangement to form a continuous network. The Clamps have a high resistance to corrosion and show high mechanical strength to ensure a lasting connection.

Without Pre-Welded Tail, For Flat and Stranded Conductors

Earth Points for connecting to the internal rebars using either mechanical clamps or exo-thermic welding.



General technical data:	
Material	High Copper Alloy
Conductor Material	Copper
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA

Type	EP1H FLSC 20.31X2.5.6/50.95 HCA	EP2H FLSC 25X2.5.6/50.95 HCA
Part No.	**118 338**	**118 342**
Clamping range (Stranded / Cable)	50 - 95 mm²	50 - 95 mm²
Clamping range Fl	W (20 - 31) mm x T (2.5 - 6) mm	25 x 2.5 - 6 mm
Recommended Fixings for Stranded / Cable (50 - 95 mm²)	M10 x 10 mm (Hex Head Screw) + M10 (Cable Lug)	M8 x 10 mm (Hex Head Screw) + M8 (Cable Lug)
Recommended Fixings for Fl T (2.5 - 4) mm	M10 x 10 mm (Hex Head Screw)	M8 x 10 mm (Hex Head Screw)
Recommended Fixings for Fl T (5 - 6) mm	M10 x 15 mm (Hex Head Screw)	M8 x 15 mm (Hex Head Screw)
Tightening Torque	15 Nm	15 Nm
PU	8 pc(s)	4 pc(s)

Type	EP2H CP FLSC 25X3/70 HCA	EP4H FLSC 25X2.5.6/50.95 HCA
Part No.	**118 349**	**118 336**
Clamping range (Stranded / Cable)	70 mm²	50 - 95 mm²
Clamping range Fl	25 x 3 mm	25 x 2.5 - 6 mm
Recommended Fixings for Stranded / Cable (50 - 95 mm²)	–	M8 x 10 mm (Hex Head Screw) + M8 (Cable Lug)
Recommended Fixings for Fl T (2.5 - 4) mm	–	M8 x 10 mm (Hex Head Screw)
Recommended Fixings for Fl T (5 - 6) mm	–	M8 x 15 mm (Hex Head Screw)
Tightening Torque	10 Nm	15 Nm
PU	4 pc(s)	4 pc(s)

With Pre-Welded Tail, For Flat and Stranded Conductors

Earth Points with pre-welded tail for connecting to the internal rebars using either mechanical clamps or exo-thermic welding.

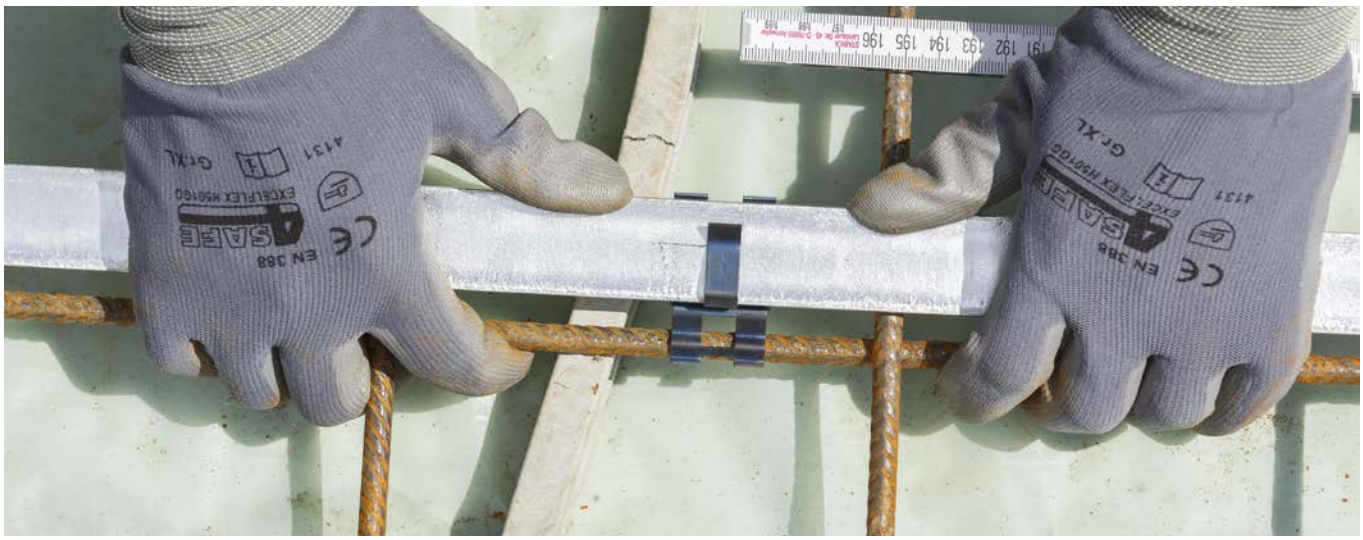


General technical data:	
Conductor Material	Copper
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA

Type	EP1H PWT70 FLSC 20.31X2.5.6/50.95 HCA	EP2H CP PWT70 FLSC 25X3/70 HCA
Part No.	**118 339**	**118 337**
Material	High Copper Alloy + Single Pre-Welded Tail (70 mm² x 500 mm, PVC Cu Cable)	High Copper Alloy + Single Pre-Welded Tail (70 mm² x 500 mm, PVC Cu Cable)
Clamping range (Stranded / Cable)	50 - 95 mm²	70 mm²
Clamping range Fl	W (20 - 31) mm x T (2.5 - 6) mm	25 x 3 mm
Recommended Fixings for Stranded / Cable (50 - 95 mm²)	M10 x 10 mm (Hex Head Screw) + M10 (Cable Lug)	–
Recommended Fixings for Fl T (2.5 - 4) mm	M10 x 10 mm (Hex Head Screw)	–
Recommended Fixings for Fl T (5 - 6) mm	M10 x 15 mm (Hex Head Screw)	–
Tightening Torque	15 Nm	10 Nm
PU	8 pc(s)	8 pc(s)

Type	EP2H CP 2PWT70 FLSC 25X3/70 HCA
Part No.	**118 346**
Material	High Copper Alloy + Double Pre-Welded Tail (70 mm² x 500 mm, PVC Cu Cable)
Clamping range (Stranded / Cable)	70 mm²
Clamping range Fl	25 x 3 mm
Recommended Fixings for Stranded / Cable (50 - 95 mm²)	–
Recommended Fixings for Fl T (2.5 - 4) mm	–
Recommended Fixings for Fl T (5 - 6) mm	–
Tightening Torque	10 Nm
PU	8 pc(s)

Components for Foundation Earth Electrodes



DEHNclip Rebar Clamp

Nominal diameter d_s



Outer diameter d_A



The outer diameter including corrugation is approx. 1.15 x d_s											
Nominal diameter d_s (mm)	6	8	10	12	14	16	20	25	28	32	40
Average outer diameter incl. corrugation d_A (mm)	7.1	9.4	11.8	14.2	16.5	18.9	23.6	29.5	33.1	37.8	47.2
Nominal cross section (mm^2)	28.3	50.3	78.5	113.1	154	201	314	491	616	804	1257

In accordance with DIN 18014 "Earthing systems for buildings – Planning, execution and documentation", the equipotential bonding conductor / foundation earth electrode must be connected to the reinforcement of the foundation slab every 2 metres.

For connecting reinforcing steel mesh or reinforcements with round and flat conductors.
Arrangement: (II) = parallel (+) = cross

Quick and safe:
The DEHNclip rebar clip for quick connection of the earth electrode to the reinforcement without tools. DEHNclip is tested for a lightning current carrying capability of 50 kA (10/350 µs) in accordance with DIN EN 62561-1.

For connecting round conductors with the reinforcement



General technical data:	
Material	St/bare
Standard	EN 62561-1

Type DC BK ...	6 RD10 STBLANK	8 RD10 STBLANK
Part No.	308 130	308 131
Clamping range Rd* / Rd	6-7 / 10 mm	8-9 / 10 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.5 kA	2.7 kA
PU	50 pc(s)	50 pc(s)

Type DC BK ...	10 RD10 STBLANK	12 RD10 STBLANK
Part No.	308 132	308 133
Clamping range Rd* / Rd	10 / 10 mm	12 / 10 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.4 kA	2.7 kA
PU	50 pc(s)	50 pc(s)

For connecting flat conductors with the reinforcement



General technical data:	
Material	St/bare
Standard	EN 62561-1

Type DC BK ...	6 FL30 STBLANK	8 FL30 STBLANK
Part No.	308 140	308 141
Clamping range Rd* / Fl	6-7 / 30 mm	8-9 / 30 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.0 kA	2.3 kA
PU	50 pc(s)	50 pc(s)

Type DC BK ...	10 FL30 STBLANK	12 FL30 STBLANK
Part No.	308 142	308 143
Clamping range Rd* / Fl	10 / 30 mm	12 / 30 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.3 kA	2.3 kA
PU	50 pc(s)	50 pc(s)

For connecting reinforcing steel



General technical data:	
Material	St/bare
Standard	EN 62561-1

Type DC BK ...	6 RD6 STBLANK	8 RD8 STBLANK
Part No.	308 134	308 135
Clamping range Rd* / Rd*	6-7 / 6-7 mm	8-9 / 8-9 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.2 kA	2.4 kA
PU	50 pc(s)	50 pc(s)

Type DC BK ...	8 RD12 STBLANK	12 RD12 STBLANK
Part No.	308 137	308 136
Clamping range Rd* / Rd*	8-9 / 12 mm	12 / 12 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	2.4 kA	2.6 kA
PU	50 pc(s)	50 pc(s)

*) Nominal diameter d_s of the reinforcement
**) For exact assignment see test certificate.

Connecting Clamps for Reinforcements

For T, cross and parallel connections



Type	VK A UNI ST
Part No.	**308 025**
Material	**St/tZn**
Clamping range Rd / Rd	(+) 6-10 / 6-10 mm
Clamping range Rd / Fl	(+) 6-10 / 30 mm
Clamping range Fl / Fl	(II) 30 / 30 mm
Screw	M10 x 25 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	9 kA
PU	50 pc(s)

For T, cross and parallel connections



Type	VK 6.10 FL30 FL30 BSB STTZN
Part No.	**308 026**
Material	**St/tZn**
Clamping range Rd / Fl	(+) 6-10 / 30 mm
Clamping range Fl / Fl	(+ / II) 30 / 30 mm
Screw	M10 x 25 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	13 kA
PU	25 pc(s)

For T and cross connections

Note: recommended tightening torque ≥ 10 Nm



Type	VK A R22 F40 STBL
Part No.	**308 030**
Material	**St/bare**
Clamping range Rd / Fl	(+) 6-22 / 30-40 mm
Screw	M10 x 40 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	1.0 kA
PU	50 pc(s)

For T, cross and parallel connections with clamping piece

For flexible connection of round conductors or for fixed earthing terminals while fixing in the formwork.



Type	VK 6.22 FL40 KB6.10 BSB STBL
Part No.	**308 035**
Material	**St/bare**
Clamping range Rd / Rd	(+/II) 6-22 / 6-10 mm
Clamping range Rd / Fl	(+) 6-22 / 40 mm
Screw	M10 x 60 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	1.0 kA
PU	25 pc(s)

U-bolt clamp for large diameters



Type	BVK 16.48 6.10 FL40 BSB STBL
Part No.	**308 045**
Material	**St/bare**
Clamping range Rd / Rd	(II) 16-48 / 6-10 mm
Clamping range Rd / Fl	(II) 16-48 / 30-40 mm
Screw	U-bolt M10 x 48 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	16 kA
PU	25 pc(s)

U-bolt clamp for large diameters with two additional clamping pieces

For cross connections of round conductors (6-10 mm) or for fixing and simultaneous connection of fixed earthing terminals.



Type	BVK 16.48 FL40 KB6.10 BSB STBL
Part No.	**308 046**
Material	**St/bare**
Clamping range Rd / Rd	(+/II) 16-48 / 6-10 mm
Clamping range Rd / Fl	(II) 16-48 / 30-40 mm
Screw	U-bolt M10 x 48 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	9.9 kA
PU	25 pc(s)

MAXI MV clamps

For T, cross and parallel connections.



Type	MAMVK 8.16 15.25 STTZN	MAMVK 8.16 15.25 STBL
Part No.	**308 041**	**308 040**
Material	**St/tZn**	**St/bare**
Clamping range Rd / Rd	(+/II) 8-16 / 15-25 mm	(+/II) 8-16 / 15-25 mm
Screw	M12 x 65 mm	M12 x 65 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	6.2 kA	10.2 kA
Approvals	–	UL 467
Stock No.	5999-12-362-1557	–
PU	20 pc(s)	20 pc(s)

MV clamps with hexagon screw

Threaded base part.



Type	MVK 8.10 SKM10X30 STTZN	MVK 10 SKM10X35 STTZN
Part No.	**390 050**	**391 050**
Material	**St/tZn**	**St/tZn**
Clamping range Rd	8-10 mm	10 mm
Screw	M10 x 30 mm	M10 x 35 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	7.3 kA	–
PU	50 pc(s)	50 pc(s)

MV clamps with hexagon screw and spring washer

Threaded base part.



Type	MVK 8.10 SKM10X30 FSC STTZN
Part No.	**390 550**
Material	**St/tZn**
Clamping range Rd	8-10 mm
Screw	M10 x 30 mm
Standard	EN 62561-1
PU	50 pc(s)

Parallel connectors with truss head screw



Type	PV 6.22 FRM10X40 STBLANK	PV 6.22 FRM10X40 STTZN
Part No.	**306 121**	**306 122**
Material	**St/bare**	**St/tZn**
Clamping range Rd / Rd	6-22 / 6-22 mm	6-22 / 6-22 mm
Screw	M10 x 40 mm	M10 x 40 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	6.1 kA	6.1 kA
PU	50 pc(s)	50 pc(s)

Connecting Clamps for Foundation Earth Electrodes

For connecting round and flat conductors in the concrete foundation.
For T, cross and parallel connections, without having to insert the conductor.

Arrangement: (II) = parallel (+) = cross



Type VK EH R10 F30 ...	ST	V2A
Part No.	**308 120**	**308 129**
Material	**St/tZn**	**StSt**
Clamping range Rd / Fl	(II) 10 / 30 mm	(II) 10 / 30 mm
Clamping range Fl / Fl	(+/II) 30 / 30 mm	(+/II) 30 / 30 mm
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Connecting Clamps for Foundation Earth Electrodes and Reinforcements

For connecting round and flat conductors in the concrete foundation or reinforcing steel meshes and reinforcements with round and flat conductors.

Arrangement: (II) = parallel (+) = cross

Connecting clamp with thrust bracket

For T, cross and parallel connections.



Type VK ...	DB 6.20 8.10 FL30 BSB STBL	DB KR 6.20 8.10 FL30 BSB STBL
Part No.	**308 031**	**308 033**
Material	**St/bare**	**St/bare**
Clamping range Rd / Rd	(+/II) 6-20 / 8-10 mm	(+/II) 6-20 / 8-10 mm
Clamping range Rd / Fl	(+/II) 6-20 / 30 x 3-4 mm	(+/II) 6-20 / 30 x 3-4 mm
Clamping range Fl / Fl	(+/II) 30 x 3-4 / 30 x 3-4 mm	(+/II) 30 x 3-4 / 30 x 3-4 mm
Version	Without clamping ring	With clamping ring
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	8.4 kA	8.4 kA
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Connecting clamp MAXI with thrust bracket

For T, cross and parallel connections.



Type VK ...	DB 20.32 8.10 FL40 BSB STBL
Part No.	**308 036**
Material	**St/bare**
Clamping range Rd / Rd	(+/II) 20-32 / 8-10 mm
Clamping range Rd / Fl	(+/II) 20-32 / 40 x 4-5 mm
Version	With clamping ring
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	14.0 kA
Standard	EN 62561-1
PU	25 pc(s)

Connecting clamp without thrust bracket

For cross connections.



Type VK ...	6.20 FL30 BSB STBL
Part No.	**308 032**
Material	**St/bare**
Clamping range Rd / Fl	(+) 6-20 / 30 x 3-4 mm
Clamping range Fl / Fl	(+/II) 30 x 3-4 / 30 x 3-4 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	7.0 kA
Standard	EN 62561-1
PU	25 pc(s)

Connecting clamp MAXI without thrust bracket

For cross connections.



Type VK ...	20.32 FL40 BSB STBL
Part No.	**308 037**
Material	**St/bare**
Clamping range Rd / Fl	(+) 20-32 / 30 x 3-40 x 5 mm
Standard	EN 62561-1
PU	25 pc(s)

Anti-Corrosion Tape

For the corrosion-protective insulation and enclosure of underground connections, such as clamp and screw connections in the field of earthing and lightning protection, but also for the subsequent enclosure of welded seam areas and formed parts as well as sleeves, flanges, fittings, etc.
The petrolatum-coated lining on both sides effectively prevents the penetration of dirt and moisture.

- Quick and easy to use
- Strong adhesion
- Stays permanently plastic
- Exceptional electrical insulation
- Does not contain any substances harmful to people or the environment

Anti-corrosion tape with perforation

Specially developed for earthing and lightning protection applications

- Backing is easy to cut with additional perforations every 20 cm
- Red colour for clearer photo documentation



Type KSB ...	PERF RED 50 L10M	PERF RED 100 L10M
Part No.	**557 125**	**557 130**
Material	Petrolatum	Petrolatum
Colour	red ●	red ●
Length	10 m	10 m
Width	50 mm	100 mm
Strenght	≥ 1.1 mm	≥ 1.1 mm
Max. continuous operating temperature	30 °C	30 °C
Perforation spacing	approx. 200 mm	approx. 200 mm
PU	24 pc(s)	12 pc(s)

Anti-corrosion tape without perforation

Backing is easy to cut without perforation

- Standard colour brown / beige



Type KSB ...	50 L10M	100 L10M
Part No.	**556 125**	**556 130**
Material	Petrolatum	Petrolatum
Colour	brown / beige ●	brown / beige ●
Length	10 m	10 m
Width	50 mm	100 mm
Strenght	≥ 1.1 mm	≥ 1.1 mm
Max. continuous operating temperature	30 °C	30 °C
PU	24 pc(s)	12 pc(s)

MV clamps, with locking lug

Multi-purposeconnecting clamp with locking lug for universal use as a cross clamp, T clamp and parallel clamp; two-part

- Secure locking of the MV clamp in a cross arrangement
- Time saving during installation due to screw-in technology

With truss head screw

Multi-purpose connecting clamp for universal use as a cross clamp, T clamp and parallel clamp for aboveground and underground connections.
The locking lug is used to lock the MV clamp securely in a cross arrangement.



Type MVK AR 8.10 ...	FRM10X40 V4A
Part No.	**391 070**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd	8-10 mm
Screw	M10 x 40 mm
Material of screw / nut	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	9.8 *) kA
PU	50 pc(s)

With hexagon screw

Multi-purpose connecting clamp for universal use as a cross clamp, T clamp and parallel clamp for aboveground and underground connections.
The locking lug is used to lock the MV clamp securely in a cross arrangement.



Type MVK AR 8.10 ...	SKM10X40 V4A
Part No.	**391 079**
Material of clamp	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd	8-10 mm
Clamping range (stranded / cable)	35-70 mm²
Screw	M10 x 40 mm
Material of screw / nut	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Standard	EN 62561-1
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	9.8 *) kA
PU	50 pc(s)

SV Clamps for Underground Connections

SV (angled connector) clamps for cross, parallel and T connections.



Type	SVK 6.28 FL30 STBL
Part No.	**308 062**
Material of clamp	**St/bare**
Clamping range Rd / Fl	6-28 / 30 mm
Standard	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	7.3 kA
PU	50 pc(s)

SV Clamps for Aboveground and Underground Connections

SV (angled connector) clamps for cross, parallel and T connections, with anti-rotation protection of the screws.

For flat and round conductors

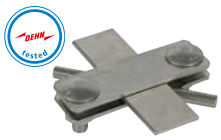


General technical data:	
Clamping range Rd / Rd	7-10 / 7-10 mm
Screw	M10 x 30 mm
Standard	EN 62561-1

Type SVK ...	7.10 7.10 FL30 STTZN	7.10 7.10 FL30 V4A
Part No.	**308 220**	**308 229**
Material of clamp	**St/tZn**	StSt (V4A)
Clamping range Rd / Fl	7-10 / 30 mm	7-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions (l1 x d1)	94 x 4 mm	94 x 3 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	7.3 kA	3.2 kA
PU	25 pc(s)	25 pc(s)

Type SVK ...	7.10 7.10 FL40 STTZN	7.10 7.10 FL40 V4A
Part No.	**308 320**	**308 329**
Material of clamp	**St/tZn**	StSt (V4A)
Clamping range Rd / Fl	7-10 / 30-40 mm	7-10 / 30-40 mm
Clamping range Fl / Fl	30-40 / 30-40 mm	30-40 / 30-40 mm
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions (l1 x d1)	108 x 4 mm	108 x 3 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	14.0 kA	14.0 kA
PU	25 pc(s)	25 pc(s)

For one flat and round conductor or two flat conductors



Type SVK ...	7.10 FL30 V4A
Part No.	**308 249**
Material of clamp	StSt (V4A)
Clamping range Rd / Fl	7-10 / 30 mm
Clamping range Fl / Fl	30 / 30 mm
Screw	M10 x 30 mm
ASTM / AISI:	316Ti / 316L / 316
Dimensions (l1 x d1)	94 x 3 mm
Standard	EN 62561-1
PU	25 pc(s)

For flat conductors



Type SVK ...	FL30 STTZN	FL30 V4A
Part No.	**308 230**	**308 239**
Material of clamp	**St/tZn**	StSt (V4A)
Clamping range Fl / Fl	30 / 30 mm	30 / 30 mm
Screw	M10 x 30 mm	M10 x 30 mm
ASTM / AISI:	–	316Ti / 316L / 316
Dimensions (l1 x d1)	94 x 4 mm	94 x 3 mm
Standard	EN 62561-1	EN 62561-1
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	8.2 kA	3.9 kA
PU	25 pc(s)	25 pc(s)

For flat conductors, round conductors and earth entry rods



Type SVK ...	7.10 16 FL40 STTZN
Part No.	**308 330**
Material of clamp	**St/tZn**
Clamping range Rd / Rd	7-10 / 16 mm
Clamping range Rd / Fl	16 / 30-40 mm
Screw	M10 x 30 mm
Dimensions (l1 x d1)	108 x 4 mm
Standard	EN 62561-1
PU	25 pc(s)

Expansion Strap for Foundation Earth Electrodes

For leading the foundation earth electrode through the expansion joints of large foundations (several sections). It is not necessary to lead the earth electrode out of the base plate.



Type	DB 700X30X4 V2A
Part No.	**308 150**
Material of strap	StSt
Dimensions of strap (l x w x d)	approx. 700 x 30 x (4 x 1) mm
Cross-section	120 mm²
Material of block	**polystyrene**
Dimensions of block (l x w x d)	180 x 85 x 45 mm
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	6 kA
PU	1 pc(s)

Spacers

For the installation of earthing conductors in the foundation slab.
With catch lug to avoid loosening of the conductor.

Angled and reinforced design



Type AH FE ...	RF V G
Part No.	**290 001**
Material	**St/tZn**
Support Fl	40 mm
Support Rd	8-10 mm
Length	300 mm
PU	25 pc(s)

Straight design



Type AH FE ...	RF
Part No.	**290 002**
Material	**St/tZn**
Support Fl	40 mm
Support Rd	8-10 mm
Length	280 mm
PU	50 pc(s)

Assembly tool

For effortless installation of clamps in hard-to-reach reinforcement layers and use as a universal extension tool.

Our assembly tool is available in three different lengths (200 mm, 400 mm, 800 mm) and can be attached to the cordless screwdriver or impact wrench as required.

It has a socket (width across flats 17) with an integrated spring-loaded magnet. The magnet makes it easy to hold and screw clamps from a distance.

Nuts can also be screwed on easily thanks to the spring mechanism. The red handle provides a firm grip and remains stable while the underlying shaft rotates.

With square socket and magnetic socket (AF17)



Stainless steel extension tool with magnetically spring-loaded socket (AF17) and a 1/2-inch square holder for use with an impact wrench. With a red freewheel handle. Also included: O-ring and locking pin.

General technical data:	
Holder	Square (1/2 inch)
Material	StSt
Hexagon socket width across flats	17 mm

Type SA ...	200 4KANT SN V2A	400 4KANT SN V2A
Part No.	**597 150** NEW	**597 151** NEW
Length (l1)	200 mm	400 mm
PU	1 pc(s)	1 pc(s)

Type SA ...	800 4KANT SN V2A
Part No.	**597 152** NEW
Length (l1)	800 mm
PU	1 pc(s)

With hexagonal socket and magnetic socket (AF17)



Stainless steel extension tool with magnetically spring-loaded socket (AF17) and a hexagonal holder for use with a cordless screwdriver (chuck). With a red freewheel handle.

General technical data:	
Holder	Hexagon
Material	StSt
Hexagon socket width across flats	17 mm

Type SA ...	200 6KANT SN V2A	400 6KANT SN V2A
Part No.	**597 153** NEW	**597 154** NEW
Length (l1)	200 mm	400 mm
PU	1 pc(s)	1 pc(s)

Type SA ...	800 6KANT SN V2A
Part No.	**597 155** NEW
Length (l1)	800 mm
PU	1 pc(s)

U-Bolt Clamps for Reinforcement Technology

U-Bolt clamps are used for interconnecting various sizes of earth rods, reinforcing bars (rebars), stranded cables and flat condutors.
The clamps have a high resistance to corrosion and show high mechanical strength to ensure a lasting connection.

Earth Rods/Rebars to Flat Conductors



General technical data:	
Material	High Copper Alloy
Conductor Material	Copper
Earth Rod Material	Copper, Copper Bonded Steel, Stainless Steel
Clamp Fixings	Nut & Washer M10
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA

Type	UBC FLERRB 25X3/12.25 HCA	UBC FLERRB 25X3/12.25 HCA CU
Part No.	**138 261**	**138 265**
Clamping range Fl / Rod	25 x 3 / 14.2 - 25 mm	25 x 3 / 14.2 - 25 mm
Clamping range Fl / Rebar	25 x 3 / 12 - 25 mm	25 x 3 / 12 - 25 mm
Material of U-Bolt	Stainless Steel	Copper
Material of Clamp Fixings	Stainless Steel	Copper
Tightening Torque	20 Nm	15 Nm
Dimensions (l x w x h)	62 x 25 x 70 mm	62 x 25 x 70 mm
PU	8 pc(s)	8 pc(s)

Type	UBC FLER 25X3/16.25 HCA CU	UBC FLRB 25.50X3.6/25.38 HCA
Part No.	**138 148**	**138 260**
Clamping range Fl / Rod	25 x 3 / 16 - 25 mm	–
Clamping range Fl / Rebar	25 x 3 / 16 - 25 mm	W (25-50) x T (3-6) / 25-38 mm
Material of U-Bolt	Copper	Stainless Steel
Material of Clamp Fixings	Copper	Stainless Steel
Tightening Torque	20 Nm	20 Nm
Dimensions (l x w x h)	60 x 22.5 x 70 mm	90 x 25 x 83 mm
PU	8 pc(s)	4 pc(s)

Type	UBC FLRB 25.50X3.6/38.50 HCA
Part No.	**138 263**
Clamping range Fl / Rod	–
Clamping range Fl / Rebar	W (25-50) x T (3-6) / 38-50 mm
Material of U-Bolt	Stainless Steel
Material of Clamp Fixings	Stainless Steel
Tightening Torque	20 Nm
Dimensions (l x w x h)	90 x 25 x 98 mm
PU	4 pc(s)

Note: For Single Plate U-Bolt application - Stranded cables crimped using appropriate cable lugs may be connected by removing the bottom plate and fixed directly to the top plate using the clamp fixings.

Earth Rods/Rebars to Stranded Conductors



General technical data:	
Material	High Copper Alloy
Conductor Material	Copper
Earth Rod Material	Copper, Copper Bonded Steel, Stainless Steel
Clamp Fixings	Nut & Washer M10
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA

Type	UBC ERRBSC 12.20/16.70 HCA CU	UBC ERRBSC 12.20/70.150 HCA CU
Part No.	**138 164**	**138 165**
Clamping range Rod / Stranded cable	14.2 - 20 mm / 16 - 70 mm²	14.2 - 20 mm / 70 - 150 mm²
Clamping range Rebar / Stranded cable	12 - 20 mm / 16 - 70 mm²	12 - 20 mm / 70 - 150 mm²
Material of U-Bolt	Copper	Copper
Material of Clamp Fixings	Copper	Copper
Tightening Torque	15 Nm	20 Nm
Dimensions (l x w x h)	82.5 x 52 x 38 mm	82.5 x 52 x 42 mm
PU	8 pc(s)	8 pc(s)

Type	UBC ERRBSC 12.20/150.300 HCA CU	UBC ERRBSC 12.20/16.70 HCA
Part No.	**138 166**	**138 170**
Clamping range Rod / Stranded cable	14.2 - 20 mm / 150 - 300 mm²	14.2 - 20 mm / 16 - 70 mm²
Clamping range Rebar / Stranded cable	12 - 20 mm / 150 - 300 mm²	12 - 20 mm / 16 - 70 mm²
Material of U-Bolt	Copper	Stainless Steel
Material of Clamp Fixings	Copper	Stainless Steel
Tightening Torque	20 Nm	20 Nm
Dimensions (l x w x h)	75 x 60 x 42 mm	82.5 x 52 x 38 mm
PU	6 pc(s)	8 pc(s)

Type	UBC ERRBSC 12.20/70.150 HCA	UBC ERRBSC 12.20/150.300 HCA
Part No.	**138 171**	**138 172**
Clamping range Rod / Stranded cable	14.2 - 20 mm / 70 - 150 mm²	14.2 - 20 mm / 150 - 300 mm²
Clamping range Rebar / Stranded cable	12 - 20 mm / 70 - 150 mm²	12 - 20 mm / 150 - 300 mm²
Material of U-Bolt	Stainless Steel	Stainless Steel
Material of Clamp Fixings	Stainless Steel	Stainless Steel
Tightening Torque	20 Nm	20 Nm
Dimensions (l x w x h)	82.5 x 52 x 42 mm	75 x 60 x 42 mm
PU	8 pc(s)	6 pc(s)

Type	UBC ERRBSC 12.25/70.300 HCA CU
Part No.	**138 177**
Clamping range Rod / Stranded cable	14.2 - 25 mm / 70 - 300 mm²
Clamping range Rebar / Stranded cable	12 - 25 mm / 70 - 300 mm²
Material of U-Bolt	Copper
Material of Clamp Fixings	Copper
Tightening Torque	20 Nm
Dimensions (l x w x h)	–
PU	4 pc(s)

Rebar to Rebar



General technical data:	
Material	High Copper Alloy
Conductor Material	Rebar
Material of U-Bolt	Stainless Steel
Material of Clamp Fixings	Stainless Steel
Tightening Torque	20 Nm
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA

Type	UBC RB 12.16/12.16 HCA	UBC RB 16.25/16.25 HCA
Part No.	138 174	138 176
Clamping range Rebar / Rebar	12 - 16 / 12 - 16 mm	16 - 25 / 16 - 25 mm
Clamp Fixings	Nut & Washer M10	Nut & Washer M10
Dimensions (l x w x h)	70.4 x 52 x 35 mm	92.4 x 60 x 38 mm
PU	6 pc(s)	6 pc(s)

Type	UBC RB 25.32/25.32 HCA	UBC RB 32.42/32.42 HCA
Part No.	138 178	138 179
Clamping range Rebar / Rebar	25 - 32 / 25 - 32 mm	32 - 42 / 32 - 42 mm
Clamp Fixings	Nut & Washer M10	Nut & Washer M12
Dimensions (l x w x h)	110 x 70 x 42 mm	135 x 88 x 55 mm
PU	4 pc(s)	2 pc(s)

Mulitpurpose Rebar Clamps, Stainless Steel



138187 is expected to be available for delivery in Q2/2025!

General technical data:	
Conductor Material	Copper, Stainless Steel, Galvanised Steel
Material of U-Bolt	Stainless Steel
Clamp Fixings	Nut & Washer M8
Material of Clamp Fixings	Stainless Steel
Tightening Torque	15 Nm
Dimensions (l x w x h)	95 x 30 x 103 mm
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA

Type	MUBC RBFLSC 12.20/25.40x3.6/50.300 STST	MUBC RBFLSC 16.25/25.40X3.6/50.300 STST
Part No.	138 185	138 186
Material	Stainless Steel	Stainless Steel
Clamping range Rebar / Fl	12 - 20 mm / W (25 - 40) x T (3 - 6) mm	16 - 25 mm / W (25 - 40) x T (3 - 6) mm
Clamping range Rebar / Stranded cable	12 - 20 mm / 50 - 300 mm²	16 - 25 mm / 50 - 300 mm²
Clamping range Rebar / Rebar	12 - 20 mm / 12 - 20 mm	16 - 25 mm / 16 - 25 mm
PU	4 pc(s)	4 pc(s)

Type	MUBC RBFLSC 22.32/25.40x3.6/50.300 STST
Part No.	138 187
Material	Stainless Steel
Clamping range Rebar / Fl	22 - 32 mm / W (25 - 40) x T (3 - 6) mm
Clamping range Rebar / Stranded cable	22 - 32 mm / 50 - 300 mm²
Clamping range Rebar / Rebar	22 - 32 mm / 22 - 32 mm
PU	4 pc(s)

Multipurpose Rebar Clamp



Type	UBC FLERRBSC 25X3.6/25.40/50.185 HCA CU
Part No.	138 173
Material	High Copper Alloy
Conductor Material	Copper
Clamping range Fl / Rod	25 x 3 / 25 - 40 mm
Clamping range Rod / Stranded cable	25 - 40 mm / 50 - 185 mm²
Clamping range Fl / Rebar	25 x 3 / 25 - 40 mm
Clamping range Rebar / Stranded cable	25 - 40 mm / 50 - 185 mm²
Material of U-Bolt	Copper
Clamp Fixings	Nut & Washer M10
Material of Clamp Fixings	Copper
Tightening Torque	20 Nm
Dimensions (l x w x h)	83 x 83 x 110 mm
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA
PU	2 pc(s)

Earthing Enhancement Compounds

Marconite®

By adding MARCONITE instead of the sand and aggregate used in a standard concrete mix a highly conductive concrete is formed. Used as a backfill material around the earth electrodes, it provides a conductive medium increasing the surface area of the electrode and ensuring a highly conductive path between the earth electrode and the surrounding ground. Being a concrete it provides a permanent solution.

Bentonite®

BENTONITE is a moisture retaining clay consisting of sodium montmorillonite. By mixing BENTONITE with water the resultant slurry will swell to many times its original dry volume. When used as a backfill material, within a borehole earth system, it will continue to absorb water from the surrounding soil thus helping provide a stable earth resistance. This is also true when the clay is used to surround earth plates and lattice mats. It strongly adheres to the earth electrodes ensuring good electrical conductivity between the electrodes and surrounding ground.

Ad-Mixture Compounds



Type EEC ...	MARCONITE 25KG
Part No.	138 125
Weight	25 kg
PU	1 pc(s)

Pre-Mixed Compounds



Type EEC ...	BENTONITE 25KG
Part No.	138 126
Weight	25 kg
PU	1 pc(s)

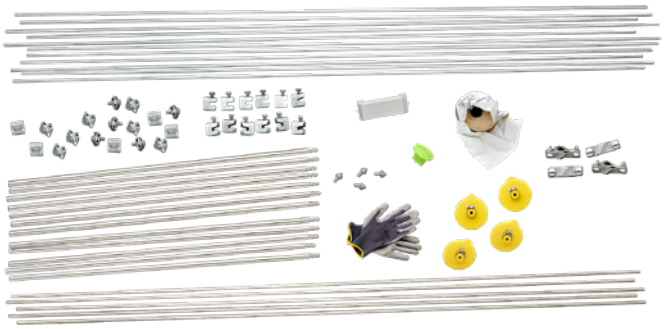


Earthing kit

Earthing kit for use in residential buildings up to 120 m² Ground area and without lightning protection system.

Basic earthing kit

Earthing kit content (4 packages)



Package 1:	
5x round steel, StSt V4A, Ø10 mm, L 2000 mm	
11x round steel, **HDG steel**, Ø10 mm, L 2000 mm	
Dimensions: approx. 60 x 60 x 2000 mm	Weight: approx. 21 kg
Package 2:	
4x sealing collar	
4x driving spike for earth rods	
4x connection bracket, StSt V4A	
1x anti-corrosion tape	
17x MV clamps, **HDG steel**	
12x connecting clamps, **HDG steel**	
1x equipotential bonding bar	
1x marker for connection lug	
1x glove pair (size 10)	
1x installation instructions	
1x test report	
Dimensions: approx. 240 x 180 x 50 mm	Weight: approx. 7 kg
Package 3:	
6x earth rod, StSt, Ø20 mm, L 1000 mm	
Dimensions: approx. 40 x 60 x 1000 mm	Weight: approx. 15 kg
Package 4:	
6x earth rod, StSt, Ø20 mm, L 1000 mm	
Dimensions: approx. 40 x 60 x 1000 mm	Weight: approx. 15 kg

Type	**ESET 1 EFH 120**
Part No.	**690 001**
Application	Residential buildings up to 120 m² of ground area
Standard	DIN 18014:2023-06
PU	1 pc(s)

Earth Rods

For setting up earthing systems for down conductors or transformer stations.

Features:

- No thickening of the cross-section at the coupling joint
- Self-locking coupling
- Corrosion resistance
- Easier storage and transport
- Universal use according to local soil conditions
- Constant resistance values
- Easily driven in with a vibration hammer

Type Z

With triple knurled pin.



General technical data:		
Material		**St/tZn**
Standard		EN 62561-2

Type TE ...	**20 1000 Z STTZN**	**20 1500 Z STTZN**
Part No.	**620 101**	**620 151**
Rod length (l1)	1000 mm	1500 mm
Diameter Ø (d1)	20 mm	20 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	7.9 kA	7.9 kA
PU	6 pc(s)	6 pc(s)

Type TE ...	**25 1000 Z STTZN**	**25 1500 Z STTZN**
Part No.	**625 101**	**625 151**
Rod length (l1)	1000 mm	1500 mm
Diameter Ø (d1)	25 mm	25 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	12.3 kA	12.3 kA
PU	6 pc(s)	6 pc(s)

Type AZ

With offset knurled pin.



Type TE ...	**20 1000 AZ V4A**	**20 1500 AZ V4A**
Part No.	**620 903**	**620 902**
Material	StSt (V4A)	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316	316Ti / 316L / 316
Rod length (l1)	1000 mm	1500 mm
Diameter Ø (d1)	20 mm	20 mm
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	4.2 kA	4.2 kA
Standard	EN 62561-2	EN 62561-2
PU	6 pc(s)	6 pc(s)

Connection Brackets

For connecting round conductors, cables and flat strips to earth rods.

Diagonal design
Also for use with uncut earth conductors.

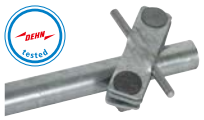


General technical data:	
Clamping range Rd / Fl	7-10 / -40 mm
Standard	EN 62561-1

Type AS ...	S TE 20 7.10 FL40 STTZN	S TE 20 7.10 FL40 V4A
Part No.	620 015	620 915
Material	St/tZn	StSt (V4A)
Clamping range (stranded / cable)	–	35-120 mm²
Type for earth rods	Ø20 mm	Ø20 mm
Material No.	–	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	–	316Ti / 316L / 316
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	21.0 kA	7.3 kA
PU	20 pc(s)	20 pc(s)

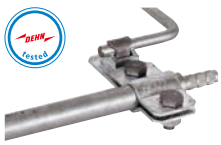
Type AS ...	S TE 25 7.10 FL40 STTZN	S TE 25 7.10 FL40 V4A
Part No.	625 015	649 015
Material	St/tZn	StSt (V4A)
Clamping range (stranded / cable)	–	35-120 mm²
Type for earth rods	Ø25 mm	Ø25 mm
Material No.	–	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	–	316Ti / 316L / 316
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	18 kA	8 kA
PU	20 pc(s)	20 pc(s)

Diagonal design – especially for tubular earth rods St/tZn
Also for use with uncut earth electrodes.



Type AS ...	S RE 27 7.10 FL40 STTZN
Part No.	640 015
Material	St/tZn
Clamping range Rd / Fl	7-10 / -40 mm
Type for earth rods	Ø27 mm
Standard	EN 62561-1
PU	1 pc(s)

One-sided connection with KS connector



Type AS ...	TE 20 KSV 7.10 STTZN	TE 25 KSV 7.10 STTZN
Part No.	620 011	625 011
Material	St/tZn	St/tZn
Clamping range Rd	7-10 mm	7-10 mm
Type for earth rods	Ø20 mm	Ø25 mm
Standard	EN 62561-1	EN 62561-1
PU	20 pc(s)	20 pc(s)

Note:
Anti-corrosion tapes (Part No. 557 125, 557 130, 556 125 and 556 130), see page xxx.

Connection Clamps

For cross and parallel connection of round conductors, flat strips or cables to earth rods.

For earth rods Ø20-30 mm



Type AK ...	TE 20.30 8.12 FL40 STTZN
Part No.	610 010
Material	St/tZn
Clamping range Rd / Fl	8-12.5 / -40 mm
Clamping range (stranded / cable)	50-95 mm²
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	18 kA
Standard	EN 62561-1
PU	1 pc(s)

For earth rods Ø20-25 mm
Connection clamp for equipotential bonding connection of pipes (e.g. antenna poles) to earth rods via a solid /stranded conductor.



Type AK ...	8.10 AQ4 50 TE20 25 V4A
Part No.	540 121
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd	8-10 mm
Connection (solid /stranded)	4-50 mm²
Standard	EN 62561-1
PU	25 pc(s)

For earth rods Ø20 mm



Type AK ...	TE 20 7.10 FL40 V4A
Part No.	610 020
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd / Fl	7-10 / -40 mm
Clamping range (stranded / cable)	25-120 mm²
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	8 kA
Standard	EN 62561-1
PU	25 pc(s)

Single-screw Connection Clamps

For connecting round conductors, flat strips or cables to earth rods.
For cross and parallel connection.



Type AK ES TE 20 RD10 ...	FL30 STTZN	FL30 V4A
Part No.	630 120	630 129
Material	St/tZn	StSt (V4A)
Clamping range Rd / Fl	10 / -30 x 4 mm	10 / -30 x 4 mm
Clamping range of cable	70 mm²	70 mm²
Type for earth rods	Ø20 mm	Ø20 mm
Material No.	–	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	–	316Ti / 316L / 316
Standard	EN 62561-1	EN 62561-1
PU	25 pc(s)	25 pc(s)

Screwable earth rod

Complete system for the installation of drilled earthing systems up to 99 m by means of core drilling; e.g. in pipeline applications or also for rocky ground.

Starter kit



Screwable earth rod starter kit
1x used for each drill hole, consisting of:
1x connector L 320 mm (part no. 621 092)
2x screwable earth rod, L 500 mm (part no. 621 050)
1x foot piece with flange Ø80 mm (part no. 621 091)
1x M16 ring nut (part no. 621 097)
1x heat-shrinkable sleeve L 140 mm (part no. 621 096)

Type	SET STARTER KIT TE 20 M16 STTZN
Part No.	**621 090**
Earth electrode material	**HDG steel**
Rod length (l1)	500 mm
Earth electrode diameter	20 mm
PU	1 pc(s)

Earth rod



Screwable earth rod, HDG steel, Ø20 mm with M16 thread for the installation of drilled earthing systems; e.g. in rocky ground or for pipeline applications.

General technical data:	
Material	**HDG steel**
Earth electrode diameter	20 mm
Thread	M16
Lightning current carrying capability (10/350 µs) (I_{imp})	100 kA
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	7.4 kA
Standard	EN 62561-2

Type	TE 20 500 M16 STTZN	TE 20 1500 M16 STTZN
Part No.	**621 050**	**621 150**
Rod length (l1)	500 mm	1500 mm
PU	1 pc(s)	6 pc(s)

Type	TE 20 3000 M16 STTZN
Part No.	**621 300**
Rod length (l1)	3000 mm
PU	3 pc(s)

Foot piece



Foot with flange plate St/tZn Ø20 mm M16 for connection at the bottom to the screwable earth rod to prevent from sinking into the soil due to own weight.

Type	FS TE 20 100 M16 FP80 STTZN
Part No.	**621 091**
Material	**HDG steel**
Rod length (l1)	100 mm
Earth electrode diameter	20 mm
Plate diameter Ø	80 mm
Thread	M16
PU	1 pc(s)

Connection clamp



St/galZn connection clamp for earth rod Ø20 mm with 4 contact options for cable lug via M6 screws.

Type	AK TE 20 STGALZN
Part No.	**621 094**
Clamp material	**St/gal Zn**
Earth electrode diameter	20 mm
Screws	6x M6 x 10 mm ✪TX30 (4x 2.5 mm² – max. 16 mm²) [2x earth electrode / 4x connection]
Screw / spring washer material	StSt
Max. continuous current load T_{max}=100 °C (VDE 0101-2)	125 A
PU	1 pc(s)

Connector



Connector for earth rod screwable HDG steel Ø20 mm rod length 320 mm for creating tested connection options on the screwable earth rod.

Type	AS TE 20 320 M16 STTZN
Part No.	**621 092**
Material	**HDG steel / StSt**
Rod length (l1)	320 mm
Earth electrode diameter	20 mm
Thread	M16
Connection	4x M6 x 10 mm ✪TX30 (4x 2.5 mm² – max. 16 mm²) or 1x M8 x 20 mm ⬢AF13 (Ø6–10 mm)
Lightning current carrying capability (10/350 µs) (I_{imp})	100 kA
Short-circuit current (AC 50 Hz / DC) (0.2 s; ≤ 300°C)	5.3 kA (35 mm², stranded)
Max. continuous current load T_{max}=100 °C (VDE 0101-2)	125 A
Standard	DIN EN 62561-1
PU	1 pc(s)

Accessories for Screwable earth rod

Earth rod fork



Earth rod fork for the secure suspension of the screwable earth rods above the borehole.

Type	HG TE 20 STTZN
Part No.	**621 095**
Material	**HDG steel**
Application note	for screwable earth rod Ø20 mm
Maximum static load by earth electrode	99 m (approx. 250 kg)
PU	1 pc(s)

Ring nut, M16, HDG steel (St/tZn)



Type	RM M16 STTZN
Part No.	**621 097**
Inner diameter	35 mm
Female thread	M16
Material	**HDG steel (C15E)**
Load capacity (F max.)	700 kg
PU	1 pc(s)

Gel connecting sleeve

Gel connecting sleeve for screwable earth rod for permanent protection of the connecting cables of connector (part no. 621 092) and connection clamp (part no. 621 094) against the ingress of water or moisture.



Type	VM EASY 5 TE M16
Part No.	**621 093**
Outer diameter (L x W x H)	240 x 75 x 44 mm
Cable diameter	19 - 28 mm
Standard	Type-tested acc. to EN 50393
Degree of protection	IP 68
PU	1 pc(s)

Heat-shrinkable sleeve, black



Type	WSS KL D40 L140
Part No.	**621 096**
Material	thin-walled, adhesive-coated, cross-linked polyolefin
Length (l)	140 mm
Inner diameter (d)	40 mm
Colour	black
PU	1 pc(s)

Tubular Earth Rods

Light design, for implementing earth-termination systems for down conductors.



Type	RE 25 1500 V4A
Part No.	**649 150**
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Rod length	1500 mm
Diameter Ø	25 mm
Standard	EN 62561-2
PU	6 pc(s)

Driving Spikes

For driving in the first earth rod.
The driving spikes can be used for earth rods made of steel and StSt as well as tubular earth rods.



Type SSP TE ...	20 TGTZN	25 TGTZN
Part No.	**620 001**	**625 001**
Material	**MCI/tZn**	**MCI/tZn**
Type	for earth rods Ø20 mm or tubular earth rods St/tZn Ø27 mm	for earth rods Ø25 mm or tubular earth rods StSt (V4A) Ø25 mm
PU	100 pc(s)	50 pc(s)

Earthing Pipe with Driving Spike

With driving spike for earthing mobile objects such as vehicles, power generators, etc.



Type	ERO SSP ASSM8 600 STTZN
Part No.	**646 000**
Material	**St/tZn**
Pipe Ø	34 mm
Length	600 mm
Screw	wing nut M8
Stock No.	5975-12-133-4342
PU	1 pc(s)

DEHNIT Earthing Method

For improving and stabilising the earth electrode resistance.

Highly swellable, powdery and extremely moisture retaining special clay provides a conductive earth electrode enclosure and reduces the soil resistivity.

More information at www.dehn-international.com/.



Type	DEHNIT 25KG
Part No.	**573 000**
Material	**special clay**
Mixture ratio [weight proportions in kg]	5 parts sand / 1 part DEHNIT / 0.5 parts water
Weight	25 kg
PU	25 kg

*) Sand compactness assumption: 1.23 t/m³

More information at www.dehn-international.com/

Profiled Earth Rods

For the installation of earth-termination systems e.g. for antennas or construction site distribution cabinets.

Profile 50 x 50 x 3 mm

With connection lug and holes, e.g. for KS connector.



General technical data:		
Material		**St/tZn**
Holes Ø		[2x] 11 / [1x] 13 mm

Type PSE 50X50X3 ...	1000 STTZN	1500 STTZN
Part No.	**635 100**	**635 150**
Length (l1)	1000 mm	1500 mm
PU	5 pc(s)	5 pc(s)

Type PSE 50X50X3 ...	2000 STTZN	2500 STTZN
Part No.	**635 200**	**635 250**
Length (l1)	2000 mm	2500 mm
PU	5 pc(s)	3 pc(s)

Selection Guide for Hammer Inserts according to their Brand

Brand	Type	Holder	Earth rod		Tubular earth rods
			Type Z St/tZn (Ø20) Type AZ V4A (Ø20)	Type Z St/tZn (Ø25)	V4A (Ø25)
Wacker Neuson	BH 23 / BH 55 / BH 65 / BH 55rw	round Ø27 x 80 mm	620 005 620 009	625 005 625 009	648 005
	EH 50 / EH 75 / EH 22/400 / EH 23/230 / EH 24/042/200				
	BHF 30				
Atlas Copco	Cobra 149 (Combi) Cobra 248	hexagon wrench size 22 x 108 mm	620 007	625 007	648 007
	Pionjär 120 Pionjär 130				
	TEX 15 PE TEX 19 PE TEX 23 PE	hexagon wrench size 25 x 108 mm	620 008	625 008	–
	TEX 15 PE TEX 19 PE TEX 23 PE TEX 27 H TEX 28 HE TEX 22 PS	hexagon wrench size 28 x 160 mm	620 019	625 019	–
	Cobra TT Cobra PRO	hexagon wrench size 32 x 160 mm	620 010	625 010	–
Chicago Pneumatic	CP Red Hawk Rail CP Red Hawk Road				
	CP Red Hawk Drill	hexagon wrench size 22 x 108 mm	620 007	625 007	648 007
Milwaukee	K 2628 H	hexagon wrench size 28	620 029	625 029	648 029
Bosch	GSH 27 **GSH 27 VC**				
Hilti	**TE 3000 AVR** (bis Modell 2021)				
	TE 1000 AVR **TE 2000 AVR** **TE 2000-22** (Akku)	TE-S (hexagon wrench size 22)	620 031	625 031	648 031
Other	Other	SDS-Max (Ø18 x 175 mm)	620 030	625 030	648 009

our recommendation

Hammer Inserts for Earth Rods

For driving in earth rods with a vibration hammer.

For earth rods type S and Z.
Ø20 mm (pin Ø12 mm Part No. 620...) or
Ø25 mm (pin Ø15 mm Part No. 625...)

With the Atlas Copco equipment different adapter types can be used. Please note that when placing your order.

Design for Wacker Neuson



Type HE TE ...	20 R27 VH WN STBLANK	25 R27 VH WN STBLANK
Part No.	**620 005**	**625 005**
Type	BHF 30	BHF 30
Adapter	round Ø27 x 80 mm	round Ø27 x 80 mm
Material	**St/bare**	**St/bare**
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	200 mm	200 mm
Earth rod diameter	20 mm	25 mm
Earth rod type	Z, AZ	S, Z
PU	1 pc(s)	1 pc(s)

Special hammer insert Part No. 620 039 for earth rods Part No. 620 902 TYPE AZ StSt (V4A).

Heavy design for Wacker Neuson



Type HE TE ...	20 R27 LVH WN STBLANK	25 R27 LVH WN STBLANK
Part No.	**620 009**	**625 009**
Type	BH 55, BH 65, BH 55rw, EH 50, EH 75 and EH 22/400	BH 55, BH 65, BH 55rw, EH 50, EH 75 and EH 22/400
Adapter	round Ø27 x 80 mm	round Ø27 x 80 mm
Material	**St/bare**	**St/bare**
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	260 mm	260 mm
Earth rod diameter	20 mm	25 mm
Earth rod type	Z, AZ	Z
PU	1 pc(s)	1 pc(s)

Design for Atlas Copco AF 22



Type HE TE ...	20 SW22 VH AC STBLANK	25 SW22 VH AC STBLANK
Part No.	**620 007**	**625 007**
Type	Cobra Combi, Pionjär 120+130, CP Red Hawk (Cobra Standard)	Cobra Combi, Pionjär 120+130, CP Red Hawk (Cobra Standard)
Adapter	hexagon, wrench size 22 x 108 mm	hexagon, wrench size 22 x 108 mm
Material	**St/bare**	**St/bare**
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	240 mm	240 mm
Earth rod diameter	20 mm	25 mm
Earth rod type	Z, AZ	Z
PU	1 pc(s)	1 pc(s)

Design for Atlas Copco AF 25



Type HE TE ...	20 SW25 VH AC STBLANK	25 SW25 VH AC STBLANK
Part No.	**620 008**	**625 008**
Type	TEX 15 PE, 19 PE, 23 PE	TEX 15 PE, 19 PE, 23 PE
Adapter	hexagon, wrench size 25 x 108 mm	hexagon, wrench size 25 x 108 mm
Material	**St/bare**	**St/bare**
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	240 mm	240 mm
Earth rod diameter	20 mm	25 mm
Earth rod type	Z, AZ	Z
PU	1 pc(s)	1 pc(s)

Design for Atlas Copco AF 28



Type HE TE ...	20 SW28 VH AC STBLANK	25 SW28 VH AC STBLANK
Part No.	**620 019**	**625 019**
Type	TEX 28 HE, 27 H, 15 PE, 19 PE, 23 PE, 22 PS	TEX 28 HE, 27 H, 15 PE, 19 PE, 23 PE, 22 PS
Adapter	hexagon, wrench size 28 x 160 mm	hexagon, wrench size 28 x 160 mm
Material	**St/bare**	**St/bare**
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	350 mm	350 mm
Earth rod diameter	20 mm	25 mm
Earth rod type	Z, AZ	Z
PU	1 pc(s)	1 pc(s)

Design for Atlas Copco AF 32



Type HE TE ...	20 SW32 VH AC STBLANK	25 SW32 VH AC STBLANK
Part No.	**620 010**	**625 010**
Type	TT, PRO, MK1	TT, PRO, MK1
Adapter	hexagon, wrench size 32 x 160 mm	hexagon, wrench size 32 x 160 mm
Material	**St/bare**	**St/bare**
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	350 mm	350 mm
Earth rod diameter	20 mm	25 mm
Earth rod type	Z, AZ	Z, AZ
PU	1 pc(s)	1 pc(s)

Design for Bosch / Hilti / Milwaukee



Type HE TE ...	20 SW28 VH BO STBLANK	25 SW28 VH BO STBLANK
Part No.	**620 029**	**625 029**
Type	GSH 27 / TE 3000 AVR (up to 2021 model) / K 2628 h	GSH 27 / TE 3000 AVR (up to 2021 model) / K 2628 h
Adapter	hexagon, wrench size 28 (1 $^{1}/_{8}$'')	hexagon, wrench size 28 (1 $^{1}/_{8}$'')
Material	**St/bare**	**St/bare**
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	250 mm	250 mm
Earth rod diameter	20 mm	25 mm
Earth rod type	Z, AZ	Z
PU	1 pc(s)	1 pc(s)

Design for Hilti TE-S



Type HE TE ...	20 TES VH HI STBLANK	25 TES VH HI STBLANK
Part No.	**620 031**	**625 031**
Type	vibration / impact hammer with TE-S adapter	vibration / impact hammer with TE-S adapter
Adapter	hexagon, wrench size 22	hexagon, wrench size 22
Material	**St/bare**	**St/bare**
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	280 mm	280 mm
Earth rod diameter	20 mm	25 mm
Earth rod type	Z, AZ	Z
PU	1 pc(s)	1 pc(s)

Design for SDS-max



Type HE TE ...	20 SDS MAX VH STBLANK	25 SDS MAX VH STBLANK
Part No.	**620 030**	**625 030**
Type	vibration / impact hammer with SDS-max adapter	vibration / impact hammer with SDS-max adapter
Adapter	round Ø18 x 175 mm	round Ø18 x 175 mm
Material	**St/bare**	**St/bare**
Hole (d1 x l1)	13 x 50 mm	16 x 55 mm
Length	260 mm	260 mm
Earth rod diameter	20 mm	25 mm
Earth rod type	Z, AZ	Z
PU	1 pc(s)	1 pc(s)

Note: It is recommended to use a hammer with a minimum striking force of 26 joules. The maximum drive-in depth depends on the soil conditions.

Designs for other types of hammer available on request.

Hammer Inserts for Tubular Earth Rods

For driving in tubular earth rods with a vibration hammer.

Design Wacker Neuson



Type HE RE 25 ...	R27 VH WN STBLANK
Part No.	**648 005**
Type	EH 22/400, EH 23/230, EH 24/042/200, BH 23 and BHF 30
Adapter	round Ø27 x 80 mm
Material	**St/bare**
Hole (d1 x l1)	25.6 x 39 mm
Length	246 mm
Earth rod diameter	25 mm
Earth rod type	RE
PU	1 pc(s)

Design SDS-max



Type HE RE 25 ...	SDS MAX VH STBLANK
Part No.	**648 009**
Type	vibration / impact hammer with SDS-max adapter
Adapter	round Ø18 x 175 mm
Material	**St/bare**
Hole (d1 x l1)	25.6 x 39 mm
Length	260 mm
Earth rod diameter	25 mm
Earth rod type	RE
PU	1 pc(s)

Note: It is recommended to use a hammer with a minimum striking force of 26 joules. The maximum drive-in depth depends on the soil conditions.

Design Bosch / Hilti / Milwaukee



Type HE RE 25 ...	SW28 VH BO STBLANK
Part No.	**648 029**
Type	GSH 27, GSH 27 VC, TE 3000 AVR (up to 2021 model), K 2628 H
Adapter	hexagon AF28
Material	**St/bare**
Hole (d1 x l1)	25.6 x 39 mm
Length	266 mm
Earth rod diameter	25 mm
Earth rod type	RE
PU	1 pc(s)

Design Hilti TE-S



Type HE RE 25 ...	TES VH HI STBLANK
Part No.	**648 031**
Type	vibration / impact hammer with TE-S adapter
Adapter	Hilti TE-S
Material	**St/bare**
Hole (d1 x l1)	25,6 x 39 mm
Length	280 mm
Earth rod diameter	25 mm
Earth rod type	RE
PU	1 pc(s)

Designs for other types of hammer available on request.

Driving Heads

For driving in earth rods with a mallet.



Type SKO TE ...	20 STBLANK	25 STBLANK
Part No.	**620 002**	**625 002**
Type of earth rod	types Z + AZ (Ø20 mm)	type Z (Ø25 mm)
Material	**St/bare**	**St/bare**
PU	1 pc(s)	1 pc(s)

Hammer Rig

For driving earth rods of 1000 mm or 1500 mm in length into the ground using a vibration hammer.

The hammer rig is delivered with a hammer slide guide.



Type	HG TE VH STTZN
Part No.	**600 003**
Material	**St/tZn**
Height	2550 mm
PU	1 pc(s)

Hammer Support

For vibration hammers of the following brands

Design for Wacker Neuson



Type HA VH ...	WA BH55 BH65 BH55RW
Part No.	**600 035**
Types	BH 55, BH 65, BH 55 rw, EH 50, K 2500 H
Material	**St/tZn**
PU	1 pc(s)

Design for Bosch



Type HA VH ...	BO GSH 27	BO GSH 27 VC
Part No.	**600 050**	**600 055**
Types	GSH 27	GSH 27 VC
Material	**St/tZn**	**St/tZn**
PU	1 pc(s)	1 pc(s)

Design for Hilti



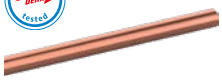
Type HA VH ...	HI TE 3000 AVR
Part No.	**600 060**
Types	TE 3000 AVR (up to 2021 model)
Material	**St/tZn**
PU	1 pc(s)

Earth Rods and Accessories

Range of Earth Rods for the installation in Lightning Protection Systems and Earthing applications in various conditions, including Couplers and other necessary accessories for installation.

Solid Copper Earth Rods

Manufactured from high conductivity copper offering a high corrosion resistance, for applications where the soil conditions are aggressive. Internally threaded at both ends to be joined using our threaded coupling dowels.



General technical data:	
Material	Copper
Internal thread size	M10
Standards	IEC / EN IEC / BS EN IEC 62561-2

Type	ER 15 1200 IM10 CU	ER 15 1500 IM10 CU
Part No.	138 031	138 035
Rod Length (L)	1200 mm	1500 mm
Rod Diameter (D)	15 mm	15 mm
PU	5 pc(s)	5 pc(s)

Type	ER 15 3000 IM10 CU	ER 16 1200 IM10 CU
Part No.	138 038	138 033
Rod Length (L)	3000 mm	1200 mm
Rod Diameter (D)	15 mm	16 mm
PU	5 pc(s)	5 pc(s)

Type	ER 16 1500 IM10 CU	ER 16 3000 IM10 CU
Part No.	138 050	138 051
Rod Length (L)	1500 mm	3000 mm
Rod Diameter (D)	16 mm	16 mm
PU	5 pc(s)	5 pc(s)

Type	ER 20 1200 IM10 CU	ER 20 1500 IM10 CU
Part No.	138 060	138 062
Rod Length (L)	1200 mm	1500 mm
Rod Diameter (D)	20 mm	20 mm
PU	5 pc(s)	5 pc(s)

Type	ER 20 3000 IM10 CU
Part No.	138 063
Rod Length (L)	3000 mm
Rod Diameter (D)	20 mm
PU	5 pc(s)

Stainless Steel Earth Rods

Manufactured from high grade stainless steel offering a very high corrosion resistance, for applications where the soil conditions are extremely aggressive. Internally threaded at both ends to be joined using our threaded coupling dowels.



General technical data:	
Material	Stainless Steel
Material Grade	316L
Internal thread size	M10
Standards	IEC / EN IEC / BS EN IEC 62561-2

Type	ER 16 1200 IM10 STST	ER 16 1500 IM10 STST
Part No.	138 032	138 055
Rod Length (L)	1200 mm	1500 mm
Rod Diameter (D)	16 mm	16 mm
PU	10 pc(s)	10 pc(s)

Type	ER 16 3000 IM10 STST	ER 20 1200 IM10 STST
Part No.	138 056	138 034
Rod Length (L)	3000 mm	1200 mm
Rod Diameter (D)	16 mm	20 mm
PU	5 pc(s)	5 pc(s)

Type	ER 20 1500 IM10 STST	ER 20 3000 IM10 STST
Part No.	138 057	138 058
Rod Length (L)	1500 mm	3000 mm
Rod Diameter (D)	20 mm	20 mm
PU	5 pc(s)	5 pc(s)

Nickel Plated Solid Copper Earth Rods

Manufactured from high conductivity copper with nickel electroplating offering a high corrosion resistance and a long service life. Internally threaded at both ends to be joined using our threaded coupling dowels.



General technical data:	
Material	Nickel Plated Copper
Rod Length (L)	1200 mm
Internal thread size	M10
Standards	IEC / EN IEC / BS EN IEC 62561-2

Type	ER 15 1200 IM10 NI pl CU	ER 16 1200 IM10 NI pl CU
Part No.	138 064	138 065
Rod Diameter (D)	15 mm	16 mm
PU	5 pc(s)	5 pc(s)

Type	ER 20 1200 IM10 NI pl CU
Part No.	138 061
Rod Diameter (D)	20 mm
PU	5 pc(s)

Coupling Dowels

Fittings for the installation of Solid Copper and Stainless Steel Earth Rods.



Type	ERC IM10 STST	ERC IM10 PBRO
Part No.	138 040	138 041
Material	StSt (V4A)	Phosphor Bronze
Thread Size	M10	M10
For use with	Stainless Steel Earth Rods	Solid Copper Earth Rods
Length	40 mm	40 mm
Standards	IEC / EN IEC / BS EN IEC 62561-2	IEC / EN IEC / BS EN IEC 62561-2
PU	100 pc(s)	100 pc(s)

Driving Heads and Spikes

Enables an easier driving of the Earth Rods into the ground.



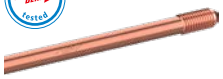
General technical data:	
Material	StSt (V4A)
Thread Size	M10
For use with	Solid Copper and Stain-less Steel Earth Rods

Type	ER DH 16 M10 ST	ER DH 20 M10 ST
Part No.	138 068	138 069
Diameter	16 mm	20 mm
PU	50 pc(s)	50 pc(s)

Type	ER SPIKE 16 M10 ST	ER SPIKE 20 M10 ST
Part No.	138 072	138 073
Diameter	16 mm	20 mm
PU	50 pc(s)	50 pc(s)

Copper-Bonded Earth Rods

Manufactured from a low carbon, high tensile strength steel core and electroplated with pure copper (99,9%). Threaded at both ends to be joined using our couplers.



General technical data:	
Material	Copper/Steel
Thread Size	UNC-2A
Cu layer	250 microns / 0.25 mm

Type	ER 14.2 1200 5/8" ST CU	ER 14.2 1500 5/8" ST CU
Part No.	614 120	614 150
Nominal diameter (T)	5/8" : 15.87 mm	5/8" : 15.87 mm
Rod Diameter (D)	14.2 mm	14.2 mm
Standards	IEC / EN IEC / BS EN IEC 62561-2	IEC / EN IEC / BS EN IEC 62561-2
PU	5 pc(s)	5 pc(s)

Type	ER 14.2 1800 5/8" ST CU	ER 14.2 2400 5/8" ST CU
Part No.	614 180	614 240
Nominal diameter (T)	5/8" : 15.87 mm	5/8" : 15.87 mm
Rod Diameter (D)	14.2 mm	14.2 mm
Standards	IEC / EN IEC / BS EN IEC 62561-2	IEC / EN IEC / BS EN IEC 62561-2 & UL 467
PU	5 pc(s)	5 pc(s)

Type	ER 14.2 3000 5/8" ST CU	ER 17.2 1200 3/4" ST CU
Part No.	614 300	617 120
Nominal diameter (T)	5/8" : 15.87 mm	3/4" : 19.05 mm
Rod Diameter (D)	14.2 mm	17.2 mm
Standards	IEC / EN IEC / BS EN IEC 62561-2 & UL 467	IEC / EN IEC / BS EN IEC 62561-2
PU	5 pc(s)	5 pc(s)

Type	ER 17.2 1800 3/4" ST CU	ER 17.2 1500 3/4" ST CU
Part No.	617 180	617 150
Nominal diameter (T)	3/4" : 19.05 mm	3/4" : 19.05 mm
Rod Diameter (D)	17.2 mm	17.2 mm
Standards	IEC / EN IEC / BS EN IEC 62561-2	IEC / EN IEC / BS EN IEC 62561-2
PU	5 pc(s)	5 pc(s)

Type	ER 17.2 2400 3/4" ST CU	ER 17.2 3000 3/4" ST CU
Part No.	617 240	617 300
Nominal diameter (T)	3/4" : 19.05 mm	3/4" : 19.05 mm
Rod Diameter (D)	17.2 mm	17.2 mm
Standards	IEC / EN IEC / BS EN IEC 62561-2 & UL 467	IEC / EN IEC / BS EN IEC 62561-2 & UL 467
PU	5 pc(s)	5 pc(s)

Couplers for Copper-Bonded Earth Rods

Fittings for the installation of Copper-Bonded Earth Rods.



Type	ERC 5/8" HCA	ERC 3/4" HCA
Part No.	138 036	138 037
Material	Silicon Bronze	Silicon Bronze
Thread Size	UNC-2B	UNC-2B
For use with	5/8" Copper Bonded Earth Rod	3/4" Copper Bonded Earth Rod
Length	70 mm	70 mm
Standards	IEC / EN IEC / BS EN IEC 62561-2	IEC / EN IEC / BS EN IEC 62561-2
PU	15 pc(s)	15 pc(s)

Driving Head and Spikes for Copper-Bonded Earth Rods

Enables an easier driving of the Earth Rods into the ground.



General technical data:	
Material	Steel
For use with	Copper-Bonded Earth Rods

Type	ER DHE 3/4" ST	ER DHE 5/8" ST
Part No.	610 234	610 258
Thread Size	3/4" UNC	5/8" UNC
PU	50 pc(s)	50 pc(s)

Type	ER DSP 3/4" ST	ER DSP 5/8" ST
Part No.	610 233	610 257
Thread Size	3/4" UNC	5/8" UNC
PU	50 pc(s)	50 pc(s)

Earth Rod to Conductor Clamps

Earth Rod Clamps are used for interconnecting various sizes of earth rods with stranded cables and flat condutors.
The clamps have a high resistance to corrosion and show high mechanical strength to ensure a lasting connection.

Earth Rods to Stranded Conductors



General technical data:	
Material	High Copper Alloy
Conductor Material	Copper
Earth Rod Material	Copper, Copper Bonded Steel, Stainless Steel
Material of Clamp Fixings	Stainless Steel
Tightening Torque	12 Nm
Standards	IEC / EN / BS EN 62561-1

Type	ERCC ERSC 14.2.16/16.95 HCA	ERCC ERSC 14.2.16/95.150 HCA
Part No.	138 136	138 134
Clamping range Rod / Stranded cable	Ø14.2 - 16 mm / 16 - 95 mm²	Ø14.2 - 16 mm / 95 - 150 mm²
Clamp Fixings	Hex Head Bolt M10	Hex Head Bolt M10 x 2 Nos
Dimensions (l x w x h)	25.5 x 24 x 44 mm	26 x 46 x 51 mm
Classification	Class N	Class H
Lightning current carrying capability (10/350 µs)	limp 50 kA	limp 100 kA
PU	20 pc(s)	10 pc(s)

Type	ERCC ERSC 17.2.20/16.95 HCA	ERCC ERSC 17.2.20/95.150 HCA
Part No.	138 137	138 135
Clamping range Rod / Stranded cable	Ø17.2 - 20 mm / 16 - 95 mm²	Ø17.2 - 20 mm / 95 - 150 mm²
Clamp Fixings	Hex Head Bolt M10	Hex Head Bolt M10
Dimensions (l x w x h)	28.5 x 24 x 50 mm	29 x 46 x 54 mm
Classification	Class N	Class H
Lightning current carrying capability (10/350 µs)	limp 50 kA	limp 100 kA
PU	20 pc(s)	9 pc(s)

Note: M10 x 25mm Phosphor Bronze (Bolt) can be supplied upon request.

U-Bolt Clamp Earth Rods to Multi-Stranded Conductors



Type UBC ERSC ...	14.2.20/35.150 HCA
Part No.	138 283
Material	High Copper Alloy
Conductor Material	Copper
Earth Rod Material	Copper, Copper Bonded Steel, Stainless Steel
Clamping range Rod / Stranded cable	Ø14.2 - 20 mm / 3 x (35 - 150 mm²)
Material of U-Bolt	Stainless Steel
Clamp Fixings	Nut & Washer M10
Material of Clamp Fixings	Stainless Steel
Tightening Torque	15 Nm
Dimensions (l x w x h)	88 x 35 x 72 mm
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA
PU	10 pc(s)

U-Bolt Clamps for Earth Rods to Stranded Conductors



General technical data:	
Material	High Copper Alloy
Conductor Material	Copper
Earth Rod Material	Copper, Copper Bonded Steel, Stainless Steel
Clamp Fixings	Nut & Washer M10
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA

Type	UBC ERRBSC 12.20/16.70 HCA CU	UBC ERRBSC 12.20/70.150 HCA CU
Part No.	138 164	138 165
Clamping range Rod / Stranded cable	Ø14.2 - 20 mm / 16 - 70 mm²	Ø14.2 - 20 mm / 70 - 150 mm²
Clamping range Rebar / Stranded cable	Ø12 - 20 mm / 16 - 70 mm²	Ø12 - 20 mm / 70 - 150 mm²
Material of U-Bolt	Copper	Copper
Material of Clamp Fixings	Copper	Copper
Tightening Torque	15 Nm	20 Nm
Dimensions (l x w x h)	82.5 x 52 x 38 mm	82.5 x 52 x 42 mm
PU	8 pc(s)	8 pc(s)

Type	UBC ERRBSC 12.20/150.300 HCA CU	UBC ERRBSC 12.20/16.70 HCA
Part No.	138 166	138 170
Clamping range Rod / Stranded cable	Ø14.2 - 20 mm / 150 - 300 mm²	Ø14.2 - 20 mm / 16 - 70 mm²
Clamping range Rebar / Stranded cable	Ø12 - 20 mm / 150 - 300 mm²	Ø12 - 20 mm / 16 - 70 mm²
Material of U-Bolt	Copper	Stainless Steel
Material of Clamp Fixings	Copper	Stainless Steel
Tightening Torque	20 Nm	20 Nm
Dimensions (l x w x h)	75 x 60 x 42 mm	82.5 x 52 x 38 mm
PU	6 pc(s)	8 pc(s)

Type	UBC ERRBSC 12.20/70.150 HCA	UBC ERRBSC 12.20/150.300 HCA
Part No.	138 171	138 172
Clamping range Rod / Stranded cable	Ø14.2 - 20 mm / 70 - 150 mm²	Ø14.2 - 20 mm / 150 - 300 mm²
Clamping range Rebar / Stranded cable	Ø12 - 20 mm / 70 - 150 mm²	Ø12 - 20 mm / 150 - 300 mm²
Material of U-Bolt	Stainless Steel	Stainless Steel
Material of Clamp Fixings	Stainless Steel	Stainless Steel
Tightening Torque	20 Nm	20 Nm
Dimensions (l x w x h)	82.5 x 52 x 42 mm	75 x 60 x 42 mm
PU	8 pc(s)	6 pc(s)

Type	UBC ERRBSC 12.25/70.300 HCA CU
Part No.	138 177
Clamping range Rod / Stranded cable	Ø14.2 - 25 mm / 70 - 300 mm²
Clamping range Rebar / Stranded cable	Ø12 - 25 mm / 70 - 300 mm²
Material of U-Bolt	Copper
Material of Clamp Fixings	Copper
Tightening Torque	20 Nm
Dimensions (l x w x h)	–
PU	4 pc(s)

Earth Rods to Flat Conductors



General technical data:	
Material	High Copper Alloy
Conductor Material	Copper
Earth Rod Material	Copper, Copper Bonded Steel, Stainless Steel
Clamp Fixings	Hex Head Bolt M10
Material of Clamp Fixings	Stainless Steel
Tightening Torque	15 Nm
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA

Type	ERCC ERFL 14.2.20/25X3 HCA	ERCC ERFL 14.2.20/25X9 HCA
Part No.	138 150	138 151
Clamping range Rod / Fl	Ø14.2 - 20 mm / 25 x 3 mm	Ø14.2 - 20 mm / 25 x 3 mm (3 nos)
Dimensions (l x w x h)	46 x 36.5 x 17.5 mm	48 x 33 x 18.5 mm
PU	20 pc(s)	20 pc(s)

Type	ERCC ERFL 14.2.20/25.50X3.6 HCA
Part No.	138 152
Clamping range Rod / Fl	Ø14.2 - 20 mm / W (25-50) x T (3-6) mm
Dimensions (l x w x h)	61 x 55 x 20 mm
PU	8 pc(s)

Multipurpose Earth Rod Clamp



Type	MUBC FLERSC 25X3.6/ 14.2.20/50.150 HCA
Part No.	138 284
Material	High Copper Alloy
Conductor Material	Copper
Earth Rod Material	Copper, Copper Bonded Steel, Stainless Steel
Clamping range Rod / Fl / Fl	Ø14.2 - 20 mm / 25 x 3-6 mm / 25 x 3-6 mm
Clamping range Rod / Fl / Stranded cable	Ø14.2 - 20 mm / 25 x 3-6 mm / 50 - 150 mm²
Clamping range Rod / Stranded cable / Stranded cable	Ø14.2 - 20 mm / 50 - 150 mm² / 50 - 150 mm²
Material of U-Bolt	Stainless Steel
Clamp Fixings	Nut & Washer M10
Material of Clamp Fixings	Stainless Steel
Tightening Torque	20 Nm
Dimensions (l x w x h)	56 x 56 x 89 mm
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA
PU	4 pc(s)

U-Bolt Clamps for Earth Rods to Flat Conductors



General technical data:	
Material	High Copper Alloy
Conductor Material	Copper
Earth Rod Material	Copper, Copper Bonded Steel, Stainless Steel
Clamp Fixings	Nut & Washer M10
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA

Type	UBC FLER 25X3/16.25 HCA CU	UBC FLERRB 25X3/12.25 HCA
Part No.	138 148	138 261
Clamping range Fl / Rod	25 x 3 / Ø16 - 25 mm	25 x 3 / Ø14.2 - 25 mm
Clamping range Fl / Rebar	25 x 3 / Ø16 - 25 mm	25 x 3 / Ø12 - 25 mm
Material of U-Bolt	Copper	Stainless Steel
Material of Clamp Fixings	Copper	Stainless Steel
Tightening Torque	20 Nm	20 Nm
Dimensions (l x w x h)	60 x 22.5 x 70 mm	62 x 25 x 70 mm
PU	8pc(s)	8 pc(s)

Type	UBC FLERRB 25X3/12.25 HCA CU
Part No.	138 265
Clamping range Fl / Rod	25 x 3 / Ø14.2 - 25 mm
Clamping range Fl / Rebar	25 x 3 / Ø12 - 25 mm
Material of U-Bolt	Copper
Material of Clamp Fixings	Copper
Tightening Torque	15 Nm
Dimensions (l x w x h)	62 x 25 x 70 mm
PU	8 pc(s)

Note: For Single Plate U-Bolt application - Stranded cables crimped using appropriate cable lugs may be connected by removing the bottom plate and fixed directly to the top plate using the clamp fixings.



Equipotential Bonding Busbars K12 with Snap-on Terminals

Equipotential bonding busbars for protective and functional equipotential bonding according to IEC 60364-4-41/60364-5-54 and lightning equipotential bonding according to IEC/EN 62305-3.

- Tested according to DIN VDE 0618-1
- VDE sign
- CE sign
- Fixing frames and plastic cover, grey or black (halogen-free)
- Sealable / labelable cover
- Snap-on terminals, St/gal Zn
- With 12 contact studs

Assignment:
For Rd one contact stud each
For Fl two contact studs each.

Standard design

Terminals for:
10 conductors 2.5-95 mm² (solid / stranded)
or Rd Ø10 mm
1 conductor Fl up to 30 x 4 mm.



Type PAS ...	11AK
Part No.	**563 200**
Material of contact rail	**Cu/gal Sn**
Cross section	30 mm²
Fixing	[2x] 6 x 8 mm
Standard	EN 62561-1
PU	1 pc(s)

UV-stabilised design

Terminals for:
10 conductors 2.5-95 mm² (solid / stranded)
or Rd Ø10 mm
1 conductor Fl up to 30 x 4 mm.



Type PAS ...	11AK UV
Part No.	**563 201**
Material of contact rail	**Cu/gal Sn**
Cross section	30 mm²
Fixing	[2x] 6 x 8 mm
Standard	EN 62561-1
PU	1 pc(s)

Equipotential Bonding Busbar MS

For equipotential bonding.

Terminals for:
7 conductors 2.5-25 mm² (solid / stranded).
1 conductor Rd Ø7-10 mm.
1 conductor Fl up to 30 x 3.5 mm or Rd Ø8-10 mm.



Type	PAS 9AK
Part No.	**563 050**
Contact rail	**brass**
Cross section	35 mm²
Fixing	[4x] 6 x 9 mm
PU	1 pc(s)

Equipotential Bonding Busbars R15 with Terminal Block System / Kit

Equipotential bonding busbars for protective and functional equipotential bonding according to IEC 60364-4-41/60364-5-54 and lightning equipotential bonding according to IEC/EN 62305-3

- Tested according to DIN VDE 0609
- 15 modules
- Grey plastic bar frames and cover (halogen-free)
- Sealable / labelable cover
- Terminal block, St/gal Zn

Type A

Terminals for:
7 conductors 2.5-25 mm² (solid / stranded).
2 conductors 16-95 mm² (solid / stranded)
or Rd Ø8-10 mm.
1 conductor Fl up to 30 x 4 mm.



Type PAS AH RK ...	7X25 2X8.10 1XFL30
Part No.	**563 010**
Clamping bar	**brass/gal Sn**
Cross section	100 mm²
Fixing	[4x] 6 x 12 mm
Standard	EN 62561-1
PU	1 pc(s)

Type B

Terminals for:
5 conductors 2.5-25 mm² (solid / stranded).
3 conductors 16-95 mm² (solid / stranded)
or Rd Ø8-10 mm.
1 conductor Fl up to 30 x 4 mm.



Type PAS AH RK ...	5X25 3X8.10 1XFL30
Part No.	**563 020**
Clamping bar	**brass/gal Sn**
Cross section	100 mm²
Fixing	[4x] 6 x 12 mm
Standard	EN 62561-1
PU	1 pc(s)

Type C

Terminals for:
13 conductors 2.5-25 mm² (solid / stranded).
1 conductor 16-95 mm² (solid / stranded)
or Rd Ø8-10 mm.



Type PAS AH RK ...	13X25 1X8.10
Part No.	**563 030**
Clamping bar	**brass/gal Sn**
Cross section	100 mm²
Fixing	[4x] 6 x 12 mm
Standard	EN 62561-1
PU	1 pc(s)

Type D

Terminals for:
7 conductors 2.5-25 mm² (solid / stranded).
2 conductors 16-95 mm² (solid / stranded)
or Rd Ø8-10 mm.
1 conductor Fl up to 40 x 5 mm.



Type PAS AH RK ...	7X25 2X8.10 1XFL40
Part No.	**563 040**
Clamping bar	**brass/gal Sn**
Cross section	100 mm²
Fixing	[4x] 6 x 12 mm
Standard	EN 62561-1
PU	1 pc(s)

Accessories for Equipotential Bonding Busbars R15 with Terminal Block System / Kit

Terminal block

Connection of:
1 conductor 2.5-25 mm² (solid / stranded).



Type	RK 16 PAS
Part No.	**563 011**
Material	**St/gal Zn**
Modules	1
Standard	EN 62561-1
PU	200 pc(s)

Terminal block

Connection of:
1 conductor 16-95 mm² (solid / stranded)
or Rd Ø8-10 mm.



Type	RK 95 PAS
Part No.	**563 013**
Material	**St/gal Zn**
Modules	2
Standard	EN 62561-1
PU	100 pc(s)

Terminal block

Connection of:
1 conductor Fl up to 30 x 4 mm.



Type	RK FL30 PAS
Part No.	**563 012**
Material	**St/gal Zn**
Modules	4
Standard	EN 62561-1
PU	1 pc(s)

Terminal block

Connection of:
1 conductor Fl up to 40 x 5 mm.



Type	RK FL40 PAS
Part No.	**563 019**
Material	**St/gal Zn**
Modules	5
Standard	EN 62561-1
PU	1 pc(s)

Clamping bar



General technical data:		
Material		**brass/gal Sn**
Cross section		100 mm²

Type	KS 198 PAS	KS 398 PAS
Part No.	**563 016**	**563 017**
Length (l1)	198 mm	398 mm
Modules	15	30
Number of bar frames	2	4
Number of covers	1	2
PU	10 pc(s)	10 pc(s)

Type	KS 798 PAS
Part No.	**563 018**
Length (l1)	798 mm
Modules	60
Number of bar frames	8
Number of covers	4
PU	1 pc(s)

Bar frame



Type	SB PAS RK
Part No.	**563 014**
Material	**plastic**
Colour	grey
Fixing	[2x] 6 x 12 mm
Modules	2
PU	50 pc(s)

Cover

Snap-on / can be labelled



Type	AH PAS RK
Part No.	**563 015**
Material	**plastic**
Colour	grey
Modules	15
PU	10 pc(s)

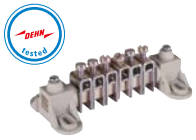
Equipotential Bonding Busbar with Miniature Terminal Block System

Equipotential bonding busbars for protective and functional equipotential bonding according to IEC 60364-4-41/60364-5-54 in small installations.

- Tested according to DIN EN 60999-2
- Terminal block, St/gal Zn

Without cover.

Terminals for:
6 conductors 2.5-25 mm² (solid / stranded).



Type	PAS 6RK OH
Part No.	**563 105**
Clamping bar	**brass/gal Sn**
Cross section	100 mm²
Bar frames	**plastic**
Fixing	[4x] 6 x 12 mm
Standard	EN 62561-1
PU	10 pc(s)

Equipotential Bonding Busbars Industry

Equipotential bonding busbars for the protective and functional equipotential bonding according to IEC 60364-4-41/60364-5-54 (DIN VDE 0100-410/540) and lightning equipotential bonding according to IEC/EN 62305-3.
Also for use in potentially explosive atmospheres (secured against self-loosening of screws).

- With spring washer
- Insulator UP (duroplastic, red) with M10 thread
- UV-stabilised and halogen-free

6 terminals



Type PAS I ...	6AP M10 CU	6AP M10 V2A
Part No.	**472 207**	**472 209**
Number of terminals	6	6
Material	Cu	StSt
Dimensions (l x w x d1)	295 x 40 x 5 mm	295 x 40 x 6 mm
Cross-section	200 mm²	240 mm²
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	39 kA	8.9 kA
Screw	M10 x 25 mm	M10 x 25 mm
Material of screw / nut	StSt	StSt
Design	with spring washer	with spring washer
Material of insulator	**UP**	**UP**
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

8 terminals



Type PAS I ...	8AP M10 CU	8AP M10 V2A
Part No.	**472 227**	**472 229**
Number of terminals	8	8
Material	Cu	StSt
Dimensions (l x w x d1)	365 x 40 x 5 mm	365 x 40 x 6 mm
Cross-section	200 mm²	240 mm²
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	39 kA	8.9 kA
Screw	M10 x 25 mm	M10 x 25 mm
Material of screw / nut	StSt	StSt
Design	with spring washer	with spring washer
Material of insulator	**UP**	**UP**
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

10 terminals



Type PAS I ...	10AP M10 CU	10AP M10 V2A
Part No.	**472 217**	**472 219**
Number of terminals	10	10
Material	Cu	StSt
Dimensions (l x w x d1)	435 x 40 x 5 mm	435 x 40 x 6 mm
Cross-section	200 mm²	240 mm²
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	39 kA	8.9 kA
Screw	M10 x 25 mm	M10 x 25 mm
Material of screw / nut	StSt	StSt
Design	with spring washer	with spring washer
Material of insulator	**UP**	**UP**
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

12 terminals



Type PAS I ...	12AP M10 CU	12AP M10 V2A
Part No.	**472 237**	**472 239**
Number of terminals	12	12
Material	Cu	StSt
Dimensions (l x w x d1)	505 x 40 x 5 mm	505 x 40 x 6 mm
Cross-section	200 mm²	240 mm²
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	39 kA	8.9 kA
Screw	M10 x 25 mm	M10 x 25 mm
Material of screw / nut	StSt	StSt
Design	with spring washer	with spring washer
Material of insulator	**UP**	**UP**
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

Special designs available on request.

Accessories f. Equipotential Bonding Busbars Industry

Cover for EBB industry

Covers for EBB with insulators.



General technical data:	
Material	StSt

Type	AD PAS 6AP V2A	AD PAS 8AP V2A
Part No.	472 279	472 269
Type of EBB	6 terminals	8 terminals
Dimensions (l x w x d)	301 x 60 x 0.8 mm	371 x 60 x 0.8 mm
PU	1 pc(s)	1 pc(s)

Type	AD PAS 10AP V2A	AD PAS 12AP V2A
Part No.	472 289	472 299
Type of EBB	10 terminals	12 terminals
Dimensions (l x w x d)	441 x 60 x 0.8 mm	511 x 60 x 0.8 mm
PU	1 pc(s)	1 pc(s)

Insulator for EBB industry



Type	IS PAS M10
Part No.	472 210
Material	UP (thermoset)
Connection thread	M10 (length 12 mm)
Colour	rot ●
Dimensions (d x h)	32 x 40 mm
PU	1 pc(s)

Fixing kit for EBBs, HDG steel

For mounting the insulators, e.g. on walls.



Type	BFS M10X20 PAS STTZN
Part No.	472 201
Material of screw	St/tZn
Screw	M10 ✪ TX25
Version	Hexalobular T25
Plastic dowel	Ø12 x 60 mm
Total length	80 mm
PU	1 pc(s)

Fixing kit for EBBs (stainless steel)

For mounting the insulators onto walls, for example.



Type	BFS M10X20 PAS V2A
Part No.	472 202
Screw material	StSt
Screw	45 mm ⇑ M10 x 20 mm
Plastic dowel	Ø12 x 60 mm
Total length	80 mm
PU	1 pc(s)

Single-Row Earthing Busbars

Earthing busbars for screwing on steel contructions, hole spacing 35 mm.

Connection possibilities:

- Flat strip with hole: with M10 flat head screws (with anti-rotation protection), nuts and spring washer
- Round conductor: with KS connector, e.g. Part No. 301 000 / 301 019 or with clamping frame, e.g. Part No. 390 150

1x 4 terminals



Type ES ...	4AP 11X11 V2A
Part No.	472 309
Material	StSt
Cross-section	105 mm²
Connection holes	11 x 11 mm
Dimensions (l x w x d1)	232 x 30 x 3.5 mm
Fixing	[2x] 12 x 15 mm
Standard	EN 62561-1
PU	1 pc(s)

1x 6 terminals



Type ES ...	6AP 11X11 V2A
Part No.	472 319
Material	StSt
Cross-section	105 mm²
Connection holes	11 x 11 mm
Dimensions (l x w x d1)	292 x 30 x 3.5 mm
Fixing	[2x] 12 x 15 mm
Standard	EN 62561-1
PU	1 pc(s)

1x 8 terminals



Type ES ...	8AP 11X11 V2A
Part No.	472 329
Material	StSt
Cross-section	105 mm²
Connection holes	11 x 11 mm
Dimensions (l x w x d1)	352 x 30 x 3.5 mm
Fixing	[2x] 12 x 15 mm
Standard	EN 62561-1
PU	1 pc(s)

1x 10 terminals



Type ES ...	10AP 11X11 V2A
Part No.	472 339
Material	StSt
Cross-section	105 mm²
Connection holes	11 x 11 mm
Dimensions (l x w x d1)	412 x 30 x 3.5 mm
Fixing	[2x] 12 x 15 mm
Standard	EN 62561-1
PU	1 pc(s)

1x 12 terminals



Type ES ...	12AP 11X11 V2A
Part No.	472 349
Material	StSt
Cross-section	105 mm²
Connection holes	11 x 11 mm
Dimensions (l x w x d1)	472 x 30 x 3.5 mm
Fixing	[2x] 12 x 15 mm
Standard	EN 62561-1
PU	1 pc(s)

Special designs are available on request.

Two-Row Earthing Busbars

Earthing busbars for screwing on steel constructions, hole spacing 50 mm.

Connection possibilities:

- Flat strip with hole: with hexagon screws M10, nuts and spring washer
- Flat strip (-40 mm) without hole: with clamping plate of disconnecting clamps, e.g. Part No. 454 100
- Round conductor: with KS connector, e.g. Part No. 301 000 / 301 019 or with clamping piece, e.g. Part No. 390 150

2x 2 terminals



Type ES ...	2X2 ASB11 STTZN	2X2 ASB11 V2A
Part No.	**472 023**	**472 109**
Material	**St/tZn**	StSt
Cross-section	240 mm²	300 mm²
Connection bores Ø	11 mm	11 mm
Dimension s (l x w x d1)	196 x 60 x 4 mm	196 x 60 x 5 mm
Fixing	[2x] 12 x 15 mm	[2x] 12 x 15 mm
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

2x 3 terminals



Type ES ...	2X3 ASB11 STTZN	2X3 ASB11 V2A
Part No.	**472 022**	**472 119**
Material	**St/tZn**	StSt
Cross-section	240 mm²	300 mm²
Connection bores Ø	11 mm	11 mm
Dimension s (l x w x d1)	242 x 60 x 4 mm	242 x 60 x 5 mm
Fixing	[2x] 12 x 15 mm	[2x] 12 x 15 mm
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

2x 4 terminals



Type ES ...	2X4 ASB11 STTZN	2X4 ASB11 V2A
Part No.	**472 024**	**472 129**
Material	**St/tZn**	StSt
Cross-section	240 mm²	300 mm²
Connection bores Ø	11 mm	11 mm
Dimension s (l x w x d1)	293 x 60 x 4 mm	293 x 60 x 5 mm
Fixing	[2x] 12 x 15 mm	[2x] 12 x 15 mm
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

2x 6 terminals



Type ES ...	2X6 ASB11 STTZN	2X6 ASB11 V2A
Part No.	**472 021**	**472 139**
Material	**St/tZn**	StSt
Cross-section	240 mm²	300 mm²
Connection bores Ø	11 mm	11 mm
Dimension s (l x w x d1)	393 x 60 x 4 mm	393 x 60 x 5 mm
Fixing	[2x] 12 x 15 mm	[2x] 12 x 15 mm
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

Special designs available on request.

Earthing Pipe Clamps

Earthing pipe clamps for integrating pipes into the protective and functional equipotential bonding according to IEC 60364-4-41/5-54, with continuously adjustable tensioning strap.

Type standard

For connecting 1 or 2 conductors or through-wiring, connection cross-section 4-25 mm² (solid / stranded).



General technical data:	
Material	StSt
Connection (solid / stranded)	4-25 mm²
Standard	EN 62561-1

Type	BRS 27.60 AQ4 25 V2A	BRS 27.114 AQ4 25 V2A
Part No.	**540 910**	**540 911**
Clamping range pipe Ø	27-60 mm (3/4-2'')	27-114 mm (3/4-4'')
Dimensions of strap (l1 x w x d)	240 x 25 x 0.3 mm	410 x 25 x 0.3 mm
PU	10 pc(s)	10 pc(s)

Type	BRS 27.168 AQ4 25 V2A
Part No.	**540 912**
Clamping range pipe Ø	27-168 mm (3/4-6'')
Dimensions of strap (l1 x w x d)	570 x 25 x 0.3 mm
PU	10 pc(s)

Type BRS17

For connecting 1 or 2 conductors or through-wiring, connection cross-section 2.5-10 mm² (solid).



Type	BRS 10.27 AQ2.5 10 V2A
Part No.	**540 920**
Material	StSt
Clamping range pipe Ø	10-27 mm (1/8-3/4'')
Dimensions of strap (l1 x w x d)	135 x 14 x 0.3 mm
Connection (solid)	2.5-10 mm²
PU	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901), connection cross-section 4-25 mm² (solid / stranded).



Type	SPK 25 BRS AQ4 25 V2A
Part No.	**540 900**
Material	StSt
Connection	4-25 mm²
Standard	EN 62561-1
PU	50 pc(s)

Antenna Earthing

Pipe clamp for lightning equipotential bonding of pipes (e.g. antenna poles) according to IEC/EN 62305-3. With gradually adjustable tensioning strap, for connecting one or two conductors and suitable for through-wiring.

Pipe clamps for antennas – complete

Connection for:
1 conductor Rd Ø10 mm or
1-2 conductors Rd Ø6-8 mm **or** 4-50 mm² (solid / stranded).



Type	BRS 16.89 AK1X10 2X6.8 V2A	BRS 16.168 AK1X10 2X6.8 V2A
Part No.	**540 103**	**540 100**
Material	StSt	StSt
Clamping range pipe Ø	16-89 mm (3/8-3'')	16-168 mm (3/8-6'')
Dimensions of strap (l1 x w x d)	330 x 25 x 0.3 mm	570 x 25 x 0.3 mm
Connection (solid / stranded)	4-50 mm²	4-50 mm²
Screw	M8 x 20 mm	M8 x 20 mm
Material of screw	StSt	StSt
Standard	EN 62561-1	EN 62561-1
Stock No.	–	5975-12-120-7744
PU	10 pc(s)	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901).

Connection for:
1 conductor Rd Ø10 mm or
1-2 conductors Rd Ø6-8 mm **or** 4-50 mm² (solid / stranded).

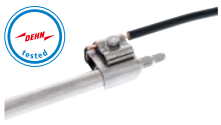


Type	SPK 25 BRS AK1X10 2X6.8 V2A
Part No.	**540 110**
Material	StSt
Connection (solid / stranded)	4-50 mm²
Screw	M8 x 20 mm
Material of screw	StSt
Standard	EN 62561-1
PU	50 pc(s)

Note:
Endless tensioning strap (Part No. 540 901, see page 206.

Connection clamp for earth rods

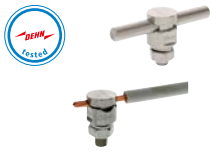
Connection clamp for equipotential bonding connection of pipes (e.g. antenna poles) to earth rods via a solid /stranded conductor.



Type	AK 8.10 AQ4 50 TE20 25 V4A
Part No.	**540 121**
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
For earth rods Ø	20-25 mm
Clamping range Rd	8-10 mm
Connection (solid / stranded)	4-50 mm²
Screw	M8 x 20 / 25 mm
Standard	EN 62561-1
PU	25 pc(s)

UNI KS connector

Universal clamping screw connector for the lightning-current-carrying connection of round conductors and also of solid / stranded conductors, e.g. to flat profiles, downpipe clamps as well as equipotential bonding bars.



Type	UKSV 6.10 AQ16 50 V4A
Part No.	**540 122**
Material	StSt (V4A)
Material No.	1.4571 / 1.4404 / 1.4401
ASTM / AISI:	316Ti / 316L / 316
Clamping range Rd	6-10 mm
Connection (solid / stranded)	16-50 mm²
Screw	M10 mm
Standard	EN 62561-1
PU	25 pc(s)

Gutter clamp

Gutter clamp for the lightning-current-carrying connection of the antenna earthing (e.g. 16 mm²) at the cross point with the gutter.



Type	DRK 8.10 AQ4 50 W16.22 V2A
Part No.	**540 120**
Material	StSt
Clamping range bead	16-22 mm
Clamping range Rd	8-10 mm
Connection (solid / stranded)	4-50 mm²
Screw	M8 x 20 / 25 mm
Material of screw	StSt
Standard	EN 62561-1
PU	25 pc(s)

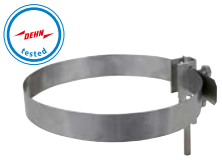
Lightning Protection Pipe Clamp with Tines

Pipe clamp for the integration of pipes with surface protection into the lightning equipotential bonding according to IEC/EN 62305-3.
For use on surfaces (e.g. varnished or powder-coated) with a coating thickness up to 0.2 mm.

The special tines penetrate the surface protection and provide the necessary contact so that it is not necessary to remove the surface protection.

Lightning protection pipe clamp with tines, complete

Connection for:
1 conductor Rd Ø10 mm or
1-2 conductors Rd Ø6-8 mm **or** 4-50 mm² (solid / stranded).



Type	BRS 27.168 Z AK1X10 2X6.8 V2A
Part No.	**540 200**
Material	StSt
Clamping range pipe Ø	27-168 mm (3/4-6")
Dimensions of strap (l1 x w x d)	570 x 25 x 0.3 mm
Standard	EN 62561-1
PU	10 pc(s)

Grip head, separate

For combination with endless tensioning strap (Part No. 540 901).

Connection for:
1 conductor Rd Ø10 mm or
1-2 conductors Rd Ø6-8 mm **or** 4-50 mm² (solid / stranded).



Type	SPK Z 25 BRS AK1X10 2X6.8 V2A
Part No.	**540 210**
Material	StSt
Standard	EN 62561-1
PU	50 pc(s)

Accessories for Grip Heads

Endless tensioning strap

For cutting to length, e.g with snips.



Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
Length	100 m
PU	1 pc(s)

Lightning Protection Earthing Pipe Clamps

Earthing pipe clamps for integrating pipes into the protective and functional equipotential bonding according to IEC 60364-4-41/60364-5-54 and lightning equipotential bonding according to IEC/EN 62305-3.

The clamping range (specified in mm and inch) refers to the outer diameter according to DIN EN ISO 228-1 of the pipes.

With M10 screws

Connection for Rd 4-10 mm or conductor cross-section max. 70 mm².



General technical data:		
Material		MCI / St/tZn
Standard		EN 62561-1

Type ERS ...	21 AS4.10 TG STTZN	27 AS4.10 TG STTZN
Part No.	**407 012**	**407 034**
Clamping range pipe Ø	21 mm	27 mm
Dimensions (l1 x r1)	80 x 11 mm	83 x 14 mm
PU	10 pc(s)	10 pc(s)

Type ERS ...	34 AS4.10 TG STTZN	42 AS4.10 TG STTZN
Part No.	**407 100**	**407 114**
Clamping range pipe Ø	34 mm	42 mm
Dimensions (l1 x r1)	85 x 17.5 mm	100 x 24.5 mm
PU	10 pc(s)	10 pc(s)

Type ERS ...	48 AS4.10 TG STTZN	60 AS4.10 TG STTZN
Part No.	**407 112**	**407 200**
Clamping range pipe Ø	48 mm	60 mm
Dimensions (l1 x r1)	95 x 22 mm	113 x 30.5 mm
PU	10 pc(s)	1 pc(s)

HDG steel version with hexagon screw

HDG steel, material thickness 3 mm.
Connection for flat conductor with screws and nuts, for round steel 7-10 mm, e.g. KS connector part no. 301 000 or clamping piece part no. 390 150.



General technical data:		
Material		St/tZn
Standard		EN 62561-1

Type ERS ...	17 AB11 STTZN	21 AB11 STTZN
Part No.	**410 038**	**410 012**
Clamping range pipe Ø	17 mm	21 mm
Dimensions (l1 x r1)	110 x 8.5 mm	115 x 10.5 mm
PU	25 pc(s)	25 pc(s)

Type ERS ...	27 AB11 STTZN	34 AB11 STTZN
Part No.	**410 034**	**410 100**
Clamping range pipe Ø	27 mm	34 mm
Dimensions (l1 x r1)	115 x 13.5 mm	124 x 17 mm
PU	25 pc(s)	25 pc(s)

Type ERS ...	42 AB11 STTZN	48 AB11 STTZN
Part No.	**410 114**	**410 112**
Clamping range pipe Ø	42 mm	48 mm
Dimensions (l1 x r1)	132.5 x 21 mm	140.5 x 24 mm
PU	25 pc(s)	25 pc(s)

Type ERS ...	55 AB11 STTZN	60 AB11 STTZN
Part No.	**410 134**	**410 200**
Clamping range pipe Ø	55 mm	60 mm
Dimensions (l1 x r1)	145 x 27.5 mm	151 x 30 mm
PU	1 pc(s)	25 pc(s)

Type ERS ...	76 AB11 STTZN	89 AB11 STTZN
Part No.	**410 212**	**410 300**
Clamping range pipe Ø	76 mm	89 mm
Dimensions (l1 x r1)	169 x 38 mm	182.5 x 44.5 mm
PU	1 pc(s)	1 pc(s)

Stainless steel version with hexagon screw



StSt, material thickness 2.5 mm.
Connection for flat conductor with screws and nuts, for round steel 7–10 mm, e.g. KS connector part no. 301 000 or clamping piece part no. 390 150.

General technical data:		
Material		StSt
Standard		EN 62561-1

Type ERS ...	17 AB11 V2A	21 AB11 V2A
Part No.	410 309	410 319
Clamping range pipe Ø	17 mm	21 mm
Dimensions (l1 x r1)	110.5 x 8.5 mm	114.5 x 10.5 mm
PU	1 pc(s)	25 pc(s)

Type ERS ...	27 AB11 V2A	34 AB11 V2A
Part No.	410 329	410 339
Clamping range pipe Ø	27 mm	34 mm
Dimensions (l1 x r1)	115.5 x 13.5 mm	124 x 17 mm
PU	25 pc(s)	25 pc(s)

Type ERS ...	42 AB11 V2A	48 AB11 V2A
Part No.	410 349	410 359
Clamping range pipe Ø	42 mm	48 mm
Dimensions (l1 x r1)	132.5 x 21 mm	140.5 x 24 mm
PU	1 pc(s)	1 pc(s)

Type ERS ...	55 AB11 V2A	60 AB11 V2A
Part No.	410 369	410 379
Clamping range pipe Ø	55 mm	60 mm
Dimensions (l1 x r1)	145 x 27.5 mm	151 x 30 mm
PU	25 pc(s)	1 pc(s)

Type ERS ...	76 AB11 V2A	89 AB11 V2A
Part No.	410 389	410 399
Clamping range pipe Ø	76 mm	89 mm
Dimensions (l1 x r1)	169 x 38 mm	182.5 x 44.5 mm
PU	1 pc(s)	1 pc(s)

UNI Saddle Clamp

For integrating mounting systems, e.g. of PV installations, in the functional equipotential bonding / functional earthing (black conductor possible) and lightning equipotential bonding.

The StSt contact plate (intermediate element) allows different conductor materials (Cu, Al, St/tZn and StSt) to be connected to the normal mounting systems, e.g. to aluminium, without the risk of contact corrosion.

With M8 screw and self-locking nut



Type	UNI FK 8.10 KBF0.7 8 AL V2A
Part No.	365 250
Clamping range of saddle	0.7-8 mm
Material of clamping bracket	Al
Clamping range Rd	8-10 mm
Connection (solid / stranded)	4-50 mm²
Material of double clamp	StSt
Standard	EN 62561-1
PU	50 pc(s)

UNI Earthing Clamps

For integrating the mounting systems, e.g. of PV installations in the functional equipotential bonding / functional earthing (black conductor possible) and lightning equipotential bonding.
The StSt contact plate (intermediate element) allows different conductor materials (Cu, Al, St/tZn and StSt) to be connected to the usual mounting systems, e.g. to aluminium, without the risk of contact corrosion.

With M8 hammer-head bolt and self-locking nut



Type	UEK 8.10 AQ4 50 HKSM8X25 V2A	UEK 8.10 AQ4 50 HKSM8 V2A
Part No.	540 249	540 250
Material of clamp	StSt	StSt
Clamping range Rd	8-10 mm	8-10 mm
Connection (solid / stranded)	4-50 mm²	4-50 mm²
Screw	Hammer-head bolt M8 x 25 mm	hammer-head bolt M8 x 30 mm
Material of screw / nut	StSt	StSt
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

With M10 hammer-head bolt and self-locking nut



Type	UEK 8.10 AQ4 50 HKSM10 V2A	UEK 8.10 AQ4 50 HKSBM10 V2A
Part No.	540 260	540 262
Material of clamp	StSt	StSt
Clamping range Rd	8-10 mm	8-10 mm
Connection (solid / stranded)	4-50 mm²	4-50 mm²
Screw	Hammer-head bolt (23 x 11 mm), M10 x 30 mm	Hammer-head bolt (31 x 13 mm), M10 x 30 mm
Material of screw / nut	StSt	StSt
Standard	EN 62561-1	EN 62561-1
PU	50 pc(s)	50 pc(s)

With M10 truss head screw and self-locking nut with serrated bearing



Type	KP AQ4 50 DUL 8.10 VKL11 FRSM10 V2A
Part No.	540 263
Material of clamp	StSt
Clamping range Rd	8-10 mm
Connection (solid / stranded)	4-50 mm²
Screw	M10 x 35 mm
Material of screw / nut	StSt
PU	10 pc(s)

Contact plate and double clamp (separate) with square hole for M8 screw



Type	KP AQ4 50 DUL 8.10 VKL9 V2A
Part No.	**540 251**
Material of clamp	StSt
Clamping range Rd	8-10 mm
Connection (solid / stranded)	4-50 mm²
PU	100 pc(s)

Contact plate and double clamp (separate) with square hole for M10 screw



Type	KP AQ4 50 DUL 8.10 VKL11 V2A
Part No.	**540 261**
Material of clamp	StSt
Clamping range Rd	8-10 mm
Connection (solid / stranded)	4-50 mm²
PU	100 pc(s)

Protective Spark Gap

Protective spark gap in closed design with plastic sheath for indirect connection of an overhead line roof pole to the external lightning protection system.

DSFS

Plastic-insulated protective spark gap for indirect connection of an overhead line roof pole to the external lightning protection system.



Type	DSFS
Part No.	**920 000**
100% lightning impulse sparkover voltage (1.2/50 µs) (U_{rimp})	~ 25 kV
Nominal discharge current (8/20 µs) (I_n)	25 kA
Power frequency sparkover voltage (50 Hz) (U_{aw})	~ 10 kV

Pipe Clamps for Service Entry Masts

For connecting spark gaps with service entry masts



Type ERS ...	76 AB11 STTZN	89 AB11 STTZN
Part No.	**410 212**	**410 300**
Clamping range Ø pipe	76 mm (2 1/2")	89 mm (3")
Material	**St/tZn**	**St/tZn**
Hole Ø	11 mm	11 mm
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

Conductor Holders for Service Entry Masts

For fixing round conductors to service entry masts, insulated with clamp bush.



Type LH KD 8.10 ...	D76 STTZN	D89 STTZN
Part No.	**425 076**	**425 089**
Clamping range Ø pipe	76 mm	89 mm
Material	**St/tZn**	**St/tZn**
Conductor support Rd	8-10 mm	8-10 mm
Conductor routing	fixed	fixed
PU	50 pc(s)	1 pc(s)

TFS / KFSU

For lightning equipotential bonding according to IEC 62305 as well as for use in IT installations according to IEC 60364-5-54.

TFS / KFSU

Isolating spark gaps with plastic sheath and two stainless steel connections (Rd 10 mm).

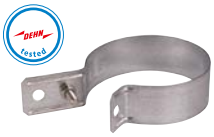


Type	TFS	KFSU
Part No.	**923 023**	**923 021**
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes	yes
Lightning impulse current (10/350 µs) (I_{imp})	100 kA	–
Class (lightning current carrying capability)	H	–
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 4 kV	≤ 4 kV
Degree of protection protection	IP 65	IP 65

Downpipe Clamps

Pipe clamps for connecting downpipes to the lightning equipotential bonding according to IEC/EN 62305-3. Connection possibilities for Rd, e.g. with KS connector (Part No. 301 000) or with clamping piece (Part No. 390 150) (depending on material).

For fixed pipe diameters



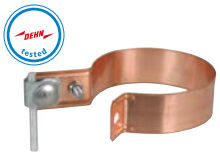
General technical data:		
Hole Ø		11 mm
Standard		EN 62561-1

Type	RRS 100 B11 STTZN	RRS 120 B11 STTZN
Part No.	**420 100**	**420 120**
Material	**St/tZn**	**St/tZn**
Clamping range pipe Ø (d1)	100 mm	120 mm
PU	50 pc(s)	1 pc(s)

Type	RRS 100 B11 CU	RRS 120 B11 CU
Part No.	**420 107**	**420 127**
Material	Cu	Cu
Clamping range pipe Ø (d1)	100 mm	120 mm
PU	1 pc(s)	1 pc(s)

Bimetallic type

For connecting St conductors with Cu downpipes, with St/tZn clamping piece and intermediate plate (Cupal).



Type	ZMRRS 100 KB 6.10 CU STTZN
Part No.	**420 207**
Material	**Cu / St/tZn**
Clamping range pipe Ø (d1)	100 mm
Clamping range Rd	6-10 mm
Standard	EN 62561-1
PU	1 pc(s)

Type RV, adjustable

With additional anti-rotation protection of the fixing screw and markings, predetermined bending points as well as prepunched cutting aids.



General technical data:	
Hole Ø	10.5 mm
Standard	EN 62561-1

Type	RRS V 60.100 B10.5 STTZN	RRS V 60.100 B10.5 AL
Part No.	**423 010**	**423 011**
Material	**St/tZn**	**Al**
Clamping range pipe Ø (d1)	60-100 mm	60-100 mm
Length (l1)	337 mm	337 mm
PU	50 pc(s)	50 pc(s)

Type	RRS V 60.100 B10.5 CU	RRS V 60.100 B10.5 V2A
Part No.	**423 017**	**423 019**
Material	**Cu**	**StSt**
Clamping range pipe Ø (d1)	60-100 mm	60-100 mm
Length (l1)	337 mm	337 mm
PU	1 pc(s)	50 pc(s)

Type	RRS V 60.150 B10.5 STTZN	RRS V 60.150 B10.5 AL
Part No.	**423 020**	**423 021**
Material	**St/tZn**	**Al**
Clamping range pipe Ø (d1)	60-150 mm	60-150 mm
Length (l1)	494 mm	494 mm
PU	50 pc(s)	50 pc(s)

Type	RRS V 60.150 B10.5 CU	RRS V 60.150 B10.5 V2A
Part No.	**423 027**	**423 029**
Material	**Cu**	**StSt**
Clamping range pipe Ø (d1)	60-150 mm	60-150 mm
Length (l1)	494 mm	494 mm
PU	50 pc(s)	50 pc(s)

Earthing Tongs

- For connection to tank vehicles, aircraft, etc.
- For discharging static charge
- For use in hazardous areas

Small design

Brass jaw with steel tips (Material No. 1.4104) and copper contact clip.
Connection: Flat head screw with slot or with enclosed crimped cable lug 25 mm² – M6 (Cu/gal Sn).



Part No. 546 002 may also be combined with earthing conductor. See Safety Equipment catalogue Part No. 758 216.

Type EZ ...	16 FL13 ASM6 STGALZN	16 FL13 ASM6 V2A
Part No.	**546 025**	**546 002**
Material of tongs	**St/gal Zn**	**StSt**
Clamping range Rd / Fl	up to Ø16 / up to 13 mm	up to Ø16 / up to 13 mm
Length	140 mm	140 mm
Terminal screw	M6 x 12 mm	M6 x 16 mm
PU	1 pc(s)	1 pc(s)

Large version with brass jaw without steel tips and copper contact clip.

Connection: Threaded pin with nut.



Type EZ ...	55 FL45 ASM10 STGALZN	55 FL45 ASM10 V2A
Part No.	**546 000**	**546 001**
Material of tongs	**St/gal Zn**	**StSt**
Clamping range Rd / Fl	up to Ø55 / up to 45 mm	up to Ø55 / up to 45 mm
Length	205 mm	205 mm
Connection nut	M10	M10
PU	1 pc(s)	1 pc(s)

Large version with two brass jaws with steel tips

Connection: Threaded pin with nut.



Type EZ ...	55 FL45 ASM10 4KSP V2A
Part No.	**546 211** NEW
Material of tongs	**StSt**
Clamping range Rd / Fl	up to Ø55 / up to 45 mm
Length	205 mm
Connection nut	M10
PU	1 pc(s)

Conductor Holder

Conductor holder for installing round and flat conductors for equipotential bonding,e.g. in transformer stations, processor rooms. Insulated conductor holder.



Type	LH 6.13 FL30 B10 K GR
Part No.	**277 130**
Conductor support Rd / Fl	6-13 / 30 x 4 mm
Fixing	Ø10 and 6 x 19 mm
Material	**plastic**
Colour	grey
PU	50 pc(s)

Connection Clamp

For universal connection to the ring equipotential bonding for St/tZn, copper or stainless steel (StSt).



Type	AK RPA V2A
Part No.	**563 169**
Conductor support Rd / Fl	Ø8-10 / 30 x 3 up to 11 mm
Material	StSt
Material (cage clamp)	**St/galZn**
Terminal cross section	2.5-95 mm²
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	5.5 kA
Standard	EN 62561-1
PU	50 pc(s)

Flat Strip / Round Conductor Holders with Thrust Piece

For wall mounting.
Thrust piece with M8 screw for installing flat strips up to 11 mm and round conductors 6-10 mm.

Distance from wall 11 mm



General technical data:	
Fixing	Ø15 / 9 x 20 mm
Slot width	12 mm
Material of screw	StSt
Standard	EN 62561-4

Type FRH 11 6.10 ...	WA11 B7 STTZN	WA11 B7 CU
Part No.	**277 230**	**277 237**
Material of conductor holder	**St/tZn**	Cu
PU	25 pc(s)	25 pc(s)

Type FRH 11 6.10 ...	WA11 B7 V2A
Part No.	**277 239**
Material of conductor holder	StSt
PU	25 pc(s)

Distance from wall 15 mm



Type FRH 11 6.10 ...	WA15 B7 STTZN	WA15 B7 V2A
Part No.	**277 240**	**277 249**
Material of conductor holder	**St/tZn**	StSt
Fixing	7 x 15 mm	Ø15 / 9 x 20 mm
Slot width	12 mm	12 mm
Material of screw	StSt	StSt
Pressure plate material	StSt	StSt
Standard	EN 62561-4	EN 62561-4
PU	25 pc(s)	25 pc(s)

Earth Bar disconnecting links

DEHN offers a range of Earth Bars Tested and Certified in accordance with the latest IEC EN 62561-1 standard and are in compliance with IEC 60364-5-54 standards and BS 7430. DEHN Earth Bars provides a common earthing point for multiple electrical installations and are a key component in both Earthing, Equipotential Bonding and Lightning Protection which helps to eliminate the risk of earth potential loops. DEHN Earth Bars are available with Single and Double Disconnecting link options which allows for quick and easy temporary disconnection from the earthing and lightning protection system to facilitate the testing of the earthing grid/rods in isolation.

Copper and Tinned Copper

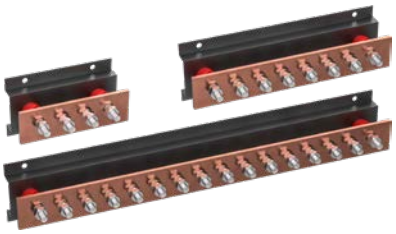


Type EB DL M10 50X6 ...	CU	SNCU
Part No.	**118 380**	**119 998**
Material	Copper	Tinned Copper
Number of Connections	2	2
Dimensions W x T	50 x 6 mm	50 x 6 mm
Dimensions L x W1 x H	116 x 95 x 90 mm	116 x 95 x 90 mm
Thread size	M10	M10
Tightening Torque	20 Nm	20 Nm
Recommended Fixings	Countersunk Wood Screws 1 ½" No. 12 or M8 and No. 12 Wall Plugs (To be Purchased Separately)	Countersunk Wood Screws 1 ½" No. 12 or M8 and No. 12 Wall Plugs (To be Purchased Separately)
Standards	IEC / EN / BS EN 62561-1	IEC / EN / BS EN 62561-1
Classification	Class H	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA	I_{imp} 100 kA
PU	1 pc(s)	1 pc(s)

Earth Bars without disconnecting link

DEHN offers a range of Earth Bars Tested and Certified in accordance with the latest IEC EN 62561-1 standard and are in compliance with IEC 60364-5-54 standards and BS 7430. DEHN Earth Bars provides a common earthing point for multiple electrical installations and are a key component in both Earthing, Equipotential Bonding and Lightning Protection which helps to eliminate the risk of earth potential loops. DEHN Earth Bars are available with Single and Double Disconnecting link options which allows for quick and easy temporary disconnection from the earthing and lightning protection system to facilitate the testing of the earthing grid/rods in isolation.

Copper



General technical data:	
Material	Copper
Dimensions W x T	50 x 6 mm
Thread size	M10
Tightening Torque	20 Nm
Recommended Fixings	Countersunk Wood Screws 1 ½" No. 12 or M8 and No. 12 Wall Plugs (To be Purchased Separately)
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA

Type EB ...	2W M10 50X6 CU	4W M10 50X6 CU
Part No.	118 900	118 901
Number of Connections	2	4
Dimensions L x W1 x H	165 x 95 x 90 mm	235 x 95 x 90 mm

Type EB ...	6W M10 50X6 CU	8W M10 50X6 CU
Part No.	118 350	118 351
Number of Connections	6	8
Dimensions L x W1 x H	305 x 95 x 90 mm	375 x 95 x 90 mm

Type EB ...	10W M10 50X6 CU	12W M10 50X6 CU
Part No.	118 352	118 353
Number of Connections	10	12
Dimensions L x W1 x H	445 x 95 x 90 mm	515 x 95 x 90 mm

Type EB ...	14W M10 50X6 CU	16W M10 50X6 CU
Part No.	118 354	118 907
Number of Connections	14	16
Dimensions L x W1 x H	585 x 95 x 90 mm	690 x 95 x 90 mm

Type EB ...	18W M10 50X6 CU	20W M10 50X6 CU
Part No.	118 908	118 909
Number of Connections	18	20
Dimensions L x W1 x H	760 x 95 x 90 mm	830 x 95 x 90 mm

Type EB ...	22W M10 50X6 CU	24W M10 50X6 CU
Part No.	118 910	118 911
Number of Connections	22	24
Dimensions L x W1 x H	935 x 95 x 90 mm	1005 x 95 x 90 mm

Type EB ...	26W M10 50X6 CU	28W M10 50X6 CU
Part No.	118 912	118 913
Number of Connections	26	28
Dimensions L x W1 x H	1075 x 95 x 90 mm	1145 x 95 x 90 mm

Type EB ...	30W M10 50X6 CU
Part No.	118 914
Number of Connections	30
Dimensions L x W1 x H	1215 x 95 x 90 mm

PU (all Earth Bars)	1 pc(s)

Tinned Copper



General technical data:	
Material	Tinned Copper
Dimensions W x T	50 x 6 mm
Thread size	M10
Tightening Torque	20 Nm
Recommended Fixings	Countersunk Wood Screws 1 ½" No. 12 or M8 and No. 12 Wall Plugs (To be Purchased Separately)
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA

Type EB ...	2W M10 50X6 SNCU	4W M10 50X6 SNCU
Part No.	119 900	119 901
Number of Connections	2	4
Dimensions L x W1 x H	165 x 95 x 90 mm	235 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	6W M10 50X6 SNCU	8W M10 50X6 SNCU
Part No.	119 350	119 351
Number of Connections	6	8
Dimensions L x W1 x H	305 x 95 x 90 mm	375 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	10W M10 50X6 SNCU	12W M10 50X6 SNCU
Part No.	119 352	119 353
Number of Connections	10	12
Dimensions L x W1 x H	445 x 95 x 90 mm	515 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	14W M10 50X6 SNCU	16W M10 50X6 SNCU
Part No.	119 354	119 907
Number of Connections	14	16
Dimensions L x W1 x H	585 x 95 x 90 mm	690 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	18W M10 50X6 SNCU	20W M10 50X6 SNCU
Part No.	119 908	119 909
Number of Connections	18	20
Dimensions L x W1 x H	760 x 95 x 90 mm	830 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	22W M10 50X6 SNCU	24W M10 50X6 SNCU
Part No.	119 910	119 911
Number of Connections	22	24
Dimensions L x W1 x H	935 x 95 x 90 mm	1005 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

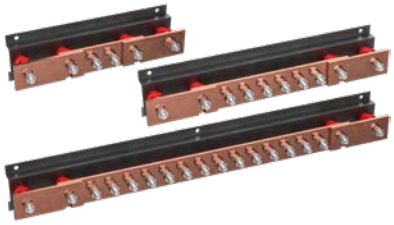
Type EB ...	26W M10 50X6 SNCU	28W M10 50X6 SNCU
Part No.	119 912	119 913
Number of Connections	26	28
Dimensions L x W1 x H	1075 x 95 x 90 mm	1145 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	30W M10 50X6 SNCU
Part No.	119 914
Number of Connections	30
Dimensions L x W1 x H	1215 x 95 x 90 mm
PU	1 pc(s)

Earth Bars with double disconnecting links

DEHN offers a range of Earth Bars Tested and Certified in accordance with the latest IEC EN 62561-1 standard and are in compliance with IEC 60364 – 5 - 54 standards and BS 7430. DEHN Earth Bars provides a common earthing point for multiple electrical installations and are a key component in both Earthing, Equipotential Bonding and Lightning Protection which helps to eliminate the risk of earth potential loops. DEHN Earth Bars are available with Single and Double Disconnecting link options which allows for quick and easy temporary disconnection from the earthing and lightning protection system to facilitate the testing of the earthing grid/rods in isolation.

Copper



General technical data:	
Material	Copper
Number of Disconnecting Links	2
Dimensions W x T	50 x 6 mm
Thread size	M10
Tightening Torque	20 Nm
Recommended Fixings	Countersunk Wood Screws 1 ½" No. 12 or M8 and No. 12 Wall Plugs (To be Purchased Separately)
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA

Type EB ...	2W 2DL M10 50X6 CU	4W 2DL M10 50X6 CU
Part No.	118 930	118 931
Number of Connections	2	4
Dimensions L x W1 x H	319 x 95 x 90 mm	389 x 95 x 90 mm

Type EB ...	6W 2DL M10 50X6 CU	8W 2DL M10 50X6 CU
Part No.	118 370	118 371
Number of Connections	6	8
Dimensions L x W1 x H	459 x 95 x 90 mm	529 x 95 x 90 mm

Type EB ...	10W 2DL M10 50X6 CU	12W 2DL M10 50X6 CU
Part No.	118 372	118 373
Number of Connections	10	12
Dimensions L x W1 x H	599 x 95 x 90 mm	669 x 95 x 90 mm

Type EB ...	14W 2DL M10 50X6 CU	16W 2DL M10 50X6 CU
Part No.	118 374	118 937
Number of Connections	14	16
Dimensions L x W1 x H	739 x 95 x 90 mm	844 x 95 x 90 mm

Type EB ...	18W 2DL M10 50X6 CU	20W 2DL M10 50X6 CU
Part No.	118 938	118 939
Number of Connections	18	20
Dimensions L x W1 x H	914 x 95 x 90 mm	984 x 95 x 90 mm

Type EB ...	22W 2DL M10 50X6 CU	24W 2DL M10 50X6 CU
Part No.	118 940	118 941
Number of Connections	22	24
Dimensions L x W1 x H	1089 x 95 x 90 mm	1159 x 95 x 90 mm

Type EB ...	26W M10 50X6 CU	28W M10 50X6 CU
Part No.	118 942	118 943
Number of Connections	26	28
Dimensions L x W1 x H	1229 x 95 x 90 mm	1299 x 95 x 90 mm

Type EB ...	30W 2DL M10 50X6 CU
Part No.	118 944
Number of Connections	30
Dimensions L x W1 x H	1369 x 95 x 90 mm

PU (all Earth Bars)	1 pc(s)

Tinned Copper



General technical data:	
Material	Tinned Copper
Number of Disconnecting Links	2
Dimensions W x T	50 x 6 mm
Thread size	M10
Tightening Torque	20 Nm
Recommended Fixings	Countersunk Wood Screws 1 ½" No. 12 or M8 and No. 12 Wall Plugs (To be Purchased Separately)
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA

Type EB ...	2W 2DL M10 50X6 SNCU	4W 2DL M10 50X6 SNCU
Part No.	119 930	119 931
Number of Connections	2	4
Dimensions L x W1 x H	319 x 95 x 90 mm	389 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	6W 2DL M10 50X6 SNCU	8W 2DL M10 50X6 SNCU
Part No.	119 370	119 371
Number of Connections	6	8
Dimensions L x W1 x H	459 x 95 x 90 mm	529 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	10W 2DL M10 50X6 SNCU	12W 2DL M10 50X6 SNCU
Part No.	119 372	119 373
Number of Connections	10	12
Dimensions L x W1 x H	599 x 95 x 90 mm	669 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	14W 2DL M10 50X6 SNCU	16W 2DL M10 50X6 SNCU
Part No.	119 374	119 937
Number of Connections	14	16
Dimensions L x W1 x H	739 x 95 x 90 mm	844 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	18W 2DL M10 50X6 SNCU	20W 2DL M10 50X6 SNCU
Part No.	119 938	119 939
Number of Connections	18	20
Dimensions L x W1 x H	914 x 95 x 90 mm	984 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	22W 2DL M10 50X6 SNCU	24W 2DL M10 50X6 SNCU
Part No.	119 940	119 941
Number of Connections	22	24
Dimensions L x W1 x H	1089 x 95 x 90 mm	1159 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

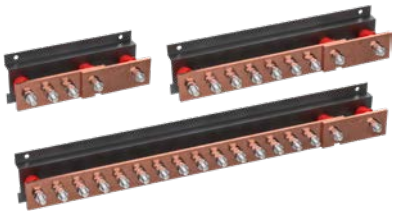
Type EB ...	26W 2DL M10 50X6 SNCU	28W 2DL M10 50X6 SNCU
Part No.	119 942	119 943
Number of Connections	26	28
Dimensions L x W1 x H	1229 x 95 x 90 mm	1299 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	30W 2DL M10 50X6 SNCU
Part No.	119 944
Number of Connections	30
Dimensions L x W1 x H	1369 x 95 x 90 mm
PU	1 pc(s)

Earth Bars with single disconnecting link

DEHN offers a range of Earth Bars Tested and Certified in accordance with the latest IEC EN 62561-1 standard and are in compliance with IEC 60364 – 5 - 54 standards and BS 7430. DEHN Earth Bars provides a common earthing point for multiple electrical installations and are a key component in both Earthing, Equipotential Bonding and Lightning Protection which helps to eliminate the risk of earth potential loops. DEHN Earth Bars are available with Single and Double Disconnecting link options which allows for quick and easy temporary disconnection from the earthing and lightning protection system to facilitate the testing of the earthing grid/rods in isolation.

Copper



General technical data:	
Material	Copper
Number of Disconnecting Links	1
Dimensions W x T	**50 x 6 mm**
Thread size	M10
Tightening Torque	20 Nm
Recommended Fixings	Countersunk Wood Screws 1 ½" No. 12 or M8 and No 12 Wall Plugs (To be Purchased Separately)
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA

Type EB ...	2W 1DL M10 50X6 CU	4W 1DL M10 50X6 CU
Part No.	**118 915**	**118 916**
Number of Connections	2	4
Dimensions L x W1 x H	232 x 95 x 90 mm	302 x 95 x 90 mm

Type EB ...	6W 1DL M10 50X6 CU	8W 1DL M10 50X6 CU
Part No.	**118 360**	**118 361**
Number of Connections	6	8
Dimensions L x W1 x H	372 x 95 x 90 mm	442 x 95 x 90 mm

Type EB ...	10W 1DL M10 50X6 CU	12W 1DL M10 50X6 CU
Part No.	**118 362**	**118 363**
Number of Connections	10	12
Dimensions L x W1 x H	512 x 95 x 90 mm	582 x 95 x 90 mm

Type EB ...	14W 1DL M10 50X6 CU	16W 1DL M10 50X6 CU
Part No.	**118 364**	**118 922**
Number of Connections	14	16
Dimensions L x W1 x H	685 x 95 x 90 mm	757 x 95 x 90 mm

Type EB ...	18W 1DL M10 50X6 CU	20W 1DL M10 50X6 CU
Part No.	**118 366**	**118 924**
Number of Connections	18	20
Dimensions L x W1 x H	827 x 95 x 90 mm	897 x 95 x 90 mm

Type EB ...	22W 1DL M10 50X6 CU	24W 1DL M10 50X6 CU
Part No.	**118 925**	**118 926**
Number of Connections	22	24
Dimensions L x W1 x H	1002 x 95 x 90 mm	1072 x 95 x 90 mm

Type EB ...	26W 1DL M10 50X6 CU	28W 1DL M10 50X6 CU
Part No.	**118 927**	**118 928**
Number of Connections	26	28
Dimensions L x W1 x H	1142 x 95 x 90 mm	1212 x 95 x 90 mm

Type EB ...	30W 1DL M10 50X6 CU
Part No.	**118 929**
Number of Connections	30
Dimensions L x W1 x H	1282 x 95 x 90 mm

PU (all Earth Bars)	1 pc(s)

Tinned Copper



General technical data:	
Material	Tinned Copper
Number of Disconnecting Links	1
Dimensions W x T	**50 x 6 mm**
Thread size	M10
Tightening Torque	20 Nm
Recommended Fixings	Countersunk Wood Screws 1 ½" No. 12 or M8 and No 12 Wall Plugs (To be Purchased Separately)
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA

Type EB ...	2W 1DL M10 50X6 SNCU	4W 1DL M10 50X6 SNCU
Part No.	**119 915**	**119 916**
Number of Connections	2	4
Dimensions L x W1 x H	232 x 95 x 90 mm	302 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	6W 1DL M10 50X6 SNCU	8W 1DL M10 50X6 SNCU
Part No.	**119 360**	**119 361**
Number of Connections	6	8
Dimensions L x W1 x H	372 x 95 x 90 mm	442 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	10W 1DL M10 50X6 SNCU	12W 1DL M10 50X6 SNCU
Part No.	**119 362**	**119 363**
Number of Connections	10	12
Dimensions L x W1 x H	512 x 95 x 90 mm	582 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	14W 1DL M10 50X6 SNCU	16W 1DL M10 50X6 SNCU
Part No.	**119 364**	**119 922**
Number of Connections	14	16
Dimensions L x W1 x H	652 x 95 x 90 mm	757 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	18W 1DL M10 50X6 SNCU	20W 1DL M10 50X6 SNCU
Part No.	**119 366**	**119 924**
Number of Connections	18	20
Dimensions L x W1 x H	827 x 95 x 90 mm	897 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	22W 1DL M10 50X6 SNCU	24W 1DL M10 50X6 SNCU
Part No.	**119 925**	**119 926**
Number of Connections	22	24
Dimensions L x W1 x H	1002 x 95 x 90 mm	1072 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	26W 1DL M10 50X6 SNCU	28W 1DL M10 50X6 SNCU
Part No.	**119 927**	**119 928**
Number of Connections	26	28
Dimensions L x W1 x H	1142 x 95 x 90 mm	1212 x 95 x 90 mm
PU	1 pc(s)	1 pc(s)

Type EB ...	30W 1DL M10 50X6 SNCU
Part No.	**119 929**
Number of Connections	30
Dimensions L x W1 x H	1282 x 95 x 90 mm
PU	1 pc(s)

Earth Boss

Earth Bosses are designed to provide a connection point between steel structures and the Lightning Protection and/or Earthing System. The Earth Bosses are welded onto steel structures, tanks and vessels and are wrapped with DEHN Anti-Corrosion Tape.

Stainless Steel for Flat Conductors

Earth Bosses are designed to provide an earth connection point on a steel structure. The bosses are welded onto the steel structures, tanks, vessels and the connections are wrapped with DEHN anti-corrosion tape.



General technical data:	
Material	Stainless Steel
Conductor Material	Copper
Clamping range Fl	**25 x 3 mm**
Material of screw	Stainless Steel
Tightening Torque	20 Nm
Recommended Fixings	Welding to Structure
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA

Type EBOSS ...	M8 D30 L40 STST	M10 D40 L30 STST	M10 D50 L50 STST
Part No.	**118 591**	**118 593**	**118 598**
Clamp Fixings	Bolt, Nut & Washer M8	Bolt, Nut & Washer M10	Bolt, Nut & Washer M10
Nominal Diameter D	30 mm	40 mm	50 mm
Length L	40 mm	30 mm	50 mm
PU	4 pc(s)	4 pc(s)	4 pc(s)

Note: Other Diameters, Lengths, Thread Sizes are available on special request.

Mild Steel for Flat Conductors

Earth Bosses are designed to provide an earth connection point on a steel structure. The bosses are welded onto the steel structures, tanks, vessels and the connections are wrapped with DEHN anti-corrosion tape.



General technical data:	
Material	**Mild Steel**
Conductor Material	Copper
Clamping range Fl	**25 x 3 mm**
Material of screw	Stainless Steel
Tightening Torque	20 Nm
Recommended Fixings	Welding to Structure
Standards	IEC / EN / BS EN 62561-1
Classification	Class H
Lightning current carrying capability (10/350 µs)	limp 100 kA

Type EBOSS ...	M8 D30 L40 St/bare	M10 D40 L30 St/bare	M10 D50 L50 St/bare
Part No.	**118 571**	**118 574**	**118 587**
Clamp Fixings	Bolt, Nut & Washer M8	Bolt, Nut & Washer M10	Bolt, Nut & Washer M10
Nominal Diameter D	30 mm	40 mm	50 mm
Length L	40 mm	30 mm	50 mm
PU	4 pc(s)	4 pc(s)	4 pc(s)

Earth Braid Bonds

Earth Braid Bonds are suitable for applications of equipotential bonding, available in copper and tinned copper variants. The Braid Bonds are pre-terminated at both ends and are ideal for bonding metal doors or cladding, for both lightning protection and equipotential bonding.

Copper

Earth Braid Bonds Copper.



General technical data:		
Material		Copper
Hole Dia		11 mm
Recommended Fixings		**M10 (Bolt, Nut & Washer)**
Type EBB ...	**25X3.5 L200 H11 CU**	**25X3.5 L400 H11 CU**
Part No.	**138 220**	**138 222**
Width W	25 mm	25 mm
Thickness T	3.5 mm	3.5 mm
Length L	200 mm	400 mm
Cross Section	35 mm²	35 mm²
PU	25 pc(s)	25 pc(s)

Type EBB ...	30X5 L200 H11 CU	30X5 L400 H11 CU
Part No.	**138 224**	**138 226**
Width W	30 mm	30 mm
Thickness T	5 mm	5 mm
Length L	200 mm	400 mm
Cross Section	50 mm²	50 mm²
PU	20 pc(s)	20 pc(s)

Note: Other Diameters, Lengths, Thread Sizes are available on special request.

Tinned Copper

Earth Braid Bonds Tinned Copper.



General technical data:		
Material		Tinned Copper
Hole Dia		11 mm
Recommended Fixings		**M10 (Bolt, Nut & Washer)**
Type EBB ...	**25X3.5 L200 H11 SNCU**	**25X3.5 L400 H11 SNCU**
Part No.	**138 200**	**138 201**
Width W	25 mm	25 mm
Thickness T	3.5 mm	3.5 mm
Length L	200 mm	400 mm
Cross Section	35 mm²	35 mm²
PU	25 pc(s)	25 pc(s)

Type EBB ...	30X5 L200 H11 SNCU	30X5 L400 H11 SNCU
Part No.	**138 202**	**138 203**
Width W	30 mm	30 mm
Thickness T	5 mm	5 mm
Length L	200 mm	400 mm
Cross Section	50 mm²	50 mm²
PU	20 pc(s)	20 pc(s)

Note: Other Diameters, Lengths, Thread Sizes are available on special request.



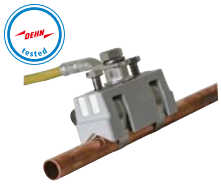
Pipe Clamps for Ex Zones 1/21, 2/22

Pipe clamp for electrically contacting pipes in Ex zones 1 and 2 (gases, vapours, mists) as well as Ex zones 21 and 22 (dusts). Non-sparking lightning equipotential bonding according to IEC/EN 62305-3.

- For use in Ex zones 1 and 2 (gases, vapours, mists) as well as Ex zones 21 and 22 (dusts)
- Tested according to explosion group IIB
- Time-saving installation – no need to deactivate systems/areas for welding or drilling works

Type EX BRS 27

Clamping range of Ø6-27 mm (3/4")



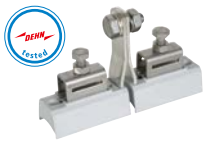
Type	EX BRS 27
Part No.	**540 821**
Lightning impulse current (10/350 µs) Cu Ø6-12 mm (I_{imp})	10 kA
Lightning impulse current (10/350 µs) Cu Ø12-27 mm (3/4") (I_{imp})	20 kA
Lightning impulse current (10/350 µs) Cu Ø27 mm (3/4") (I_{imp})	25 kA
Lightning impulse current (10/350 µs) St/tZn Ø17-27 mm (3/4") (I_{imp})	25 kA
Lightning impulse current (10/350 µs) StSt Ø6-12 mm (I_{imp})	10 kA
Lightning impulse current (10/350 µs) StSt Ø12-27 mm (3/4") (I_{imp})	12 kA
Lightning impulse current (10/350 µs) StSt Ø27 mm (3/4") (I_{imp})	25 kA
Connection	M8
Clamping range pipe Ø	6-27 mm (3/4")
Material of clamp body	**polyamide**
Material of grip head / tensioning strap	**StSt**
Material of contact piece	**brass/gal Sn**
Standard	based on EN 62561-1
PU	1 pc(s)

Note:
Tensioning strap (Part No. 540 901, see page xxx.

With regard to corrosion resistance, it must be checked whether the materials used for the Ex pipe clamps, Ex BRS ... (e.g. Cu/galSn, brass/galSn, StSt, polyamide) can be used in the existing ambient conditions.

Separate clamp body

For use with endless tensioning strap (Part No. 540 901), clamping ranges Ø27 (3/4") to 500 mm.



Type	SCK EX BRS ASSM10 V2A
Part No.	**540 810**
Lightning impulse current (10/350 µs) Cu (I_{imp})	50 kA
Lightning impulse current (10/350 µs) St/tZn (I_{imp})	50 kA
Lightning impulse current (10/350 µs) StSt (I_{imp})	25 kA
Connection	M10
Clamping range pipe Ø	27 (3/4")-500 mm
Material of clamp body	**polyamide**
Material of grip head / tensioning strap	**StSt**
Material of contact piece	**Cu/gal Sn**
Standard	EN 62561-1
PU	1 pc(s)

Type EX BRS 90 / 300 / 500

Type EX BRS 90 (Part No. 540 801) clamping range Ø27 (3/4") to 89 mm (3").
Type EX BRS 300 (Part No. 540 803) clamping range Ø89 (3") to 300 mm.
Type EX BRS 500 (Part No. 540 805) clamping range Ø300 to 500 mm.



General technical data:	
Connection	M10
Material of clamp body	**polyamide**
Material of grip head / tensioning strap	**StSt**
Material of contact piece	**Cu/gal Sn**
Standard	EN 62561-1

Type	EX BRS 90	EX BRS 300
Part No.	**540 801**	**540 803**
Lightning impulse current (10/350 µs) Cu (I_{imp})	50 kA	50 kA
Lightning impulse current (10/350 µs) St/tZn (I_{imp})	50 kA	50 kA
Lightning impulse current (10/350 µs) St/bare (I_{imp})	–	–
Lightning impulse current (10/350 µs) StSt (I_{imp})	25 kA	50 kA
Clamping range pipe Ø	27-89 mm (3/4-3")	89 (3")-300 mm
PU	1 pc(s)	1 pc(s)

Type	EX BRS 500
Part No.	**540 805**
Lightning impulse current (10/350 µs) Cu (I_{imp})	–
Lightning impulse current (10/350 µs) St/tZn (I_{imp})	–
Lightning impulse current (10/350 µs) St/bare (I_{imp})	50 kA
Lightning impulse current (10/350 µs) StSt (I_{imp})	50 kA
Clamping range pipe Ø	300-500 mm
PU	1 pc(s)

Accessories for Pipe Clamps for Ex Zones 1/21, 2/22

Mounting set for Ex pipe clamps



For positioning tensioning straps for pipe fastening.
For use with a bit screwdriver, power drill or manual installation.

Type	BRS VSW
Part No.	**540 902**
Material	**Al / St/chem. Ni**
PU	1 pc(s)

Parallel Connectors for Ex Zones 1/21, 2/22

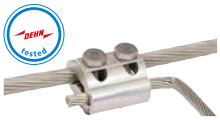
Parallel connector with spring washer for connecting round conductors/cables in Ex zones 1/21, 2/22. The clamps are secured against self-loosening in accordance with DIN EN 62305-3 Supplement 2.

For equal and different cable diameters, small



Type PV ...	5.12.5 SKM8X45 GSG CUGALSN
Part No.	**306 105**
Material of clamp	**Cu/gal Sn**
Clamping range Rd / Rd	5-12.5 mm
Clamping range (stranded / cable)	16-95 mm²
Lightning impulse current (10/350 µs) (non-sparking)	25 kA
Short-circuit current (50 Hz) (0.1 s) (non-sparking)	1.65 kA
Standard	based on EN 62561-1
PU	1 pc(s)

For equal and different cable diameters, large



Type PV ...	5.16 SKM10X50 GSG CUGALSN
Part No.	**306 106**
Material of clamp	**Cu/gal Sn**
Clamping range Rd / Rd	5-16 mm
Clamping range (stranded / cable)	16-150 mm²
Lightning impulse current (10/350 µs) (non-sparking)	25 kA
Short-circuit current (50 Hz) (0.1 s) (non-sparking)	1.65 kA
Standard	based on EN 62561-1
PU	1 pc(s)

Pipe Clamp GSG for Ex Zone 2/22

Pipe clamp for electrically contacting pipes in Ex zone 2/22. The pipe clamp is secured against self-loosening according to DIN/EN 62305-3 Supplement 2.

Pipe clamps - Complete



Type	BRS 27.89 AK1X10 2X6.8 GSG V2A
Part No.	**540 104**
Material	**StSt**
Clamping range pipe Ø	27-89 mm (3/4-3'')
Dimensions of strap (l1 x w x d)	330 x 25 x 0.3 mm
Connection (solid / stranded)	4-50 mm²
Standard	EN 62561-1
Tightening torque	≥ 15 Nm
PU	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901), connection cross-section 4-50 mm² (solid / stranded).



Type	SPK 27.89 BRS AK1X10 2X6.8 GSG V2A
Part No.	**540 199**
Material	**StSt**
Connection (solid / stranded)	4-50 mm²
Standard	EN 62561-1
PU	25 pc(s)

Accessories for Grip Head

Endless tensioning strap

For cutting to length, e.g. with snips.



Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	**StSt**
Dimensions of strap (w x d)	25 x 0.3 mm
PU	1 pc(s)

Clamps for Ex Zone 2/22

Clamps with spring washer for connecting round / flat conductors in Ex zone 2/22. The clamps are secured against self-loosening according to DIN EN 62305-3 Supplement 2.

UNI disconnecting clamp 200 kA (10/350 µs) with spring washer for two round conductors



Type	UTK 200 2X10 FL30 ZP V2A
Part No.	**459 200**
Material	StSt
Clamping range Rd / Rd	10 / 10 mm
Clamping range Rd / Fl	10 / 30 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

UNI disconnecting clamp 200 kA (10/350 µs) with spring washer for earth entry rods



Type	UTK 200 8.10 16 ZP V2A
Part No.	**459 219**
Material	StSt
Clamping range Rd / Rd	8-10 / 16 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

Clamping piece 200 kA (10/350 µs) with spring washer



Type	KS 200 B11.11 FL30X4 V2A
Part No.	**380 209**
Material	StSt
Clamping range Fl	30 x 4 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

KS connector 200 kA (10/350 µs) with spring washer



Type	KSV 200 10 FER V2A
Part No.	**301 209**
Material	StSt
Clamping range Rd	10 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

MV clamp 200 kA (10/350 µs) with spring washer for round conductors



Type	MVK 200 8.10 SKM10X30 V2A
Part No.	**390 209**
Material	StSt
Clamping range Rd / Rd	8-10 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

MV clamp 200 kA (10/350 µs) with spring washer for air-termination rods



Type	MVK 200 8.10 16 SKM10X40 FSC V2A
Part No.	**392 209**
Material	StSt
Clamping range Rd / Rd	8-10 / 16 mm
Lightning current carrying capability (10/350 µs)	I_{imp} 200 kA *)
Standard	based on EN 62561-1
PU	1 pc(s)

KS connector 100 kA (10/350 µs), one-piece, with spring washer



Type	KSV 7.10 FER STTZN	KSV 6.10 FER CU
Part No.	**301 010**	**301 017**
Material of clamping screw	St/tZn	Cu
Material of clamp	ZDC	RCB
Clamping range Rd	7-10 mm	6-10 mm
Connection (single-wire / multi-wire)	–	25-70 mm²
Type	+ spring washer	+ spring washer
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA *)	I_{imp} 100 kA *)
Standard	EN 62561-1	EN 62561-1
PU	100 pc(s)	100 pc(s)

KS connector 100 kA (10/350 µs), two-piece, with spring washer



Type	AP 2X6.10 V2A
Part No.	**301 229**
Material of clamping screw	StSt
Material of clamp	StSt
Clamping range Rd	6-10 mm
Type	+ spring washer
Lightning current carrying capability (10/350 µs)	I_{imp} 100 kA / I_{imp} 50 kA *)
Standard	EN 62561-1
PU	1 pc(s)

Connection clamps for steel girders for hazardous areas zone 2/22

Heavy design; for connection to steel structures.
All connections secured against self-loosening:

- Connection to the steel structure using adhesive-coated screws
- Round conductor connection using spring washer

Vertical design with KS connector



Type AK 6.10 KSV FER ...	S KBF3 18 V2A	S KBF18 35 V2A
Part No.	**372 169**	**372 179**
Clamping range	3-18 mm	18-35 mm
Material of clamp	StSt	StSt
Clamping range Rd	6-10 mm	6-10 mm
Standard	EN 62561-1	EN 62561-1
PU	10 pc(s)	10 pc(s)

Horizontal design with KS connector



Type AK 6.10 KSV FER ...	W KBF3 18 V2A	W KBF18 35 V2A
Part No.	**372 269**	**372 279**
Clamping range	3-18 mm	18-35 mm
Material of clamp	StSt	StSt
Clamping range Rd	6-10 mm	6-10 mm
Standard	EN 62561-1	EN 62561-1
PU	10 pc(s)	10 pc(s)

Non-sparking, Ex equipotential bonding bar for hazardous areas of zones 1/21, 2/22

Non-sparking, Ex equipotential bonding bar for integrating metallic conductors and wires into the lightning equipotential bonding according to VDE 0185-305-3 (IEC 62305-3) as well as for protective and functional equipotential bonding according to DIN VDE 0100 Part 410/540.

PAS EX 7(11)AP SET



For use in potentially explosive areas of Ex zones 1 and 2 (gases, vapours, mists) up to explosion group IIC as well as Ex zones 21 and 22 (dusts).

- Screws secured against self-loosening
- With the push-in adapter, only indoor use is permissible

Type	PAS EX 7AP SET	PAS EX 11AP SET
Part No.	**472 415**	**472 425**
Connection Rd/Fl	1x flat conductor 30/40 mm or 1x round conductor 10 mm	1x flat conductor 30/40 mm or 1x round conductor 10 mm
Connection connecting clamp	4x 4–16 mm²	4x 4–16 mm²
Connection cable lug	1x flexible/rigid conductor 16–95 mm²	5x flexible/rigid conductor 16–95 mm²
Dimensions	382 x 140 x 101 mm	522 x 140 x 101 mm
Lightning impulse current (10/350 µs) StSt (V4A) 30x3.5 mm / 40x5 mm	2HExIIC 75 kA (non-sparking) T4	2HExIIC 75 kA (non-sparking) T4
Lightning impulse current (10/350 µs) St/tZn 30x3.5 mm/40x5 mm	1HExIIC 100 kA (non-sparking) T4	1HExIIC 100 kA (non-sparking) T4
Lightning impulse current (10/350 µs) StSt (V4A) Ø10 mm	NExIIC 50 kA (non-sparking) T4	NExIIC 50 kA (non-sparking) T4
Lightning impulse current (10/350 µs) St/tZn Ø10 mm	2HExIIC 75 kA (non-sparking) T4	2HExIIC 75 kA (non-sparking) T4
Lightning impulse current (10/350 µs) Cu 16-95 mm²	1HExIIC 100 kA (non-sparking) T4	1HExIIC 100 kA (non-sparking) T4
Lightning impulse current (10/350 µs) Cu 4-16 mm² (per core)	3 kA (non-sparking)	3 kA (non-sparking)
Nominal discharge current (8/20 µs) per line (I_n) Cu 4-10 mm²	10 kA (non-sparking)	10 kA (non-sparking)
Nominal discharge current (8/20 µs) per line (I_n) Cu 16 mm²	15 kA (non-sparking)	15 kA (non-sparking)
Max. short-circuit current (AC 50 Hz / DC / 5 s) StSt (V4A) 30x3.5 mm / 40x5 mm	750 A / T4	750 A / T4
Max. short-circuit current (AC 50 Hz / DC / 5 s) St/tZn 30x3.5 mm / 40x5 mm	1500 A / T4	1500 A / T4
Max. short-circuit current (AC 50 Hz /DC /5 s) StSt (V4A) Ø10 mm	650 A / T4	650 A / T4
Max. short-circuit current (AC 50 Hz / DC / 5 s) St/tZn Ø10 mm	1000 A / T4	1000 A / T4
Standard	IEC 62561-1 / CLC 50703-2	IEC 62561-1 / CLC 50703-2
PU	1 pc(s)	1 pc(s)

PAS EX 1+5(9)AP M10 V2A



For use in potentially explosive areas of Ex zones 1 and 2 (gases, vapours, mists) up to explosion group IIC as well as Ex zones 21 and 22 (dusts).

- Screws secured against self-loosening
- Both indoor and outdoor installation permissible

Type	PAS EX 1+5AP M10 V2A	PAS EX 1+9AP M10 V2A
Part No.	**472 410**	**472 420**
Connection Fl	1x flat conductor 30/40 mm	1x flat conductor 30/40 mm
Connection cable lug	5x flexible/rigid conductor 16–95 mm²	9x flexible/rigid conductor 16–95 mm²
Dimensions	382 x 140 x 65 mm	522 x 140 x 65 mm
Lightning impulse current (10/350 µs) StSt (V4A) 30x3.5 mm / 40x5 mm	2HExIIC 75 kA (non-sparking) T4	2HExIIC 75 kA (non-sparking) T4
Lightning impulse current (10/350 µs) St/tZn 30x3.5 mm/40x5 mm	1HExIIC 100 kA (non-sparking) T4	1HExIIC 100 kA (non-sparking) T4
Lightning impulse current (10/350 µs) Cu 16-95 mm²	1HExIIC 100 kA (non-sparking) T4	1HExIIC 100 kA (non-sparking) T4
Max. short-circuit current (AC 50 Hz / DC / 5 s) StSt (V4A) 30x3.5 mm / 40x5 mm	750 A / T4	750 A / T4
Max. short-circuit current (AC 50 Hz / DC / 5 s) St/tZn 30x3.5 mm / 40x5 mm	1500 A / T4	1500 A / T4
Standard	IEC 62561-1 / CLC 50703-2	IEC 62561-1 / CLC 50703-2
PU	1 pc(s)	1 pc(s)

In relation to corrosion resistance, it must be established whether the materials used in the PAS EX (e.g. Cu/galSn, StSt, polyamide, polyurethane ester) are able to be used within the prevailing environmental conditions.

PAS EX 7(11)AP M10 V2A



For use in potentially explosive areas of Ex zones 1 and 2 (gases, vapours, mists) up to explosion group IIC as well as Ex zones 21 and 22 (dusts).

- Screws secured against self-loosening
- Both indoor and outdoor installation permissible

Type	PAS EX 7AP M10 V2A	PAS EX 11AP M10 V2A
Part No.	**472 411**	**472 421**
Connection cable lug	7x flexible/rigid conductor 16–95 mm²	11x flexible/rigid conductor 16–95 mm²
Dimensions	382 x 140 x 50 mm	522 x 140 x 50 mm
Lightning impulse current (10/350 µs) Cu 16-95 mm²	1HExIIC 100 kA (non-sparking) T4	1HExIIC 100 kA (non-sparking) T4
Standard	IEC 62561-1 / CLC 50703-2	IEC 62561-1 / CLC 50703-2
PU	1 pc(s)	1 pc(s)

In relation to corrosion resistance, it must be established whether the materials used in the PAS EX (e.g. Cu/galSn, StSt, polyamide, polyurethane ester) are able to be used within the prevailing environmental conditions.

PAS EX AD 7(11) AP



Cover with distance bolts for non-sparking Ex equipotential bonding bar PAS EX. With connection numbering and label.

Type	PAS EX AD 7 AP	PAS EX AD 11 AP
Part No.	**472 412**	**472 422**
Material	StSt	StSt
PU	1 pc(s)	1 pc(s)

PAS EX CC



Push-in adapter for non-sparking, Ex equipotential bonding bar PAS EX for convenient connection of flexible conductors. For use in potentially explosive areas of Ex zones 1 and 2 (gases, vapours, mists) up to explosion group IIC as well as Ex zones 21 and 22 (dusts). Use indoors only permissible.

Type	PAS EX CC
Part No.	**472 497**
Lightning impulse current (10/350 µs) Cu 4-16 mm² (per core)	3 kA (non-sparking)
Nominal discharge current (8/20 µs) per line (I_n) Cu 4-10 mm²	10 kA (non-sparking)
Nominal discharge current (8/20 µs) per line (I_n) Cu 16 mm²	15 kA (non-sparking)
PU	1 pc(s)

Note: Non-sparking only ensured in connection with PAS EX ...!

PAS EX R



Adapter for non-sparking Ex equipotential bonding bar PAS EX for connecting a round conductor. For use in potentially explosive areas of Ex zones 1 and 2 (gases, vapours, mists) up to explosion group IIC as well as Ex zones 21 and 22 (dusts). Both indoor and outdoor installation permissible.

Type	PAS EX R
Part No.	**472 498**
Lightning impulse current (10/350 µs) StSt (V4A) Ø10 mm	NExIIC 50 kA (non-sparking) T4
Lightning impulse current (10/350 µs) St/tZn Ø10 mm	2HExIIC 75 kA (non-sparking) T4
Max. short-circuit current (AC 50 Hz /DC /5 s) StSt (V4A) Ø10 mm	650 A / T4
Max. short-circuit current (AC 50 Hz / DC / 5 s) St/tZn Ø10 mm	1000 A / T4
PU	1 pc(s)

Note: Non-sparking only ensured in connection with PAS EX ...!

PAS EX FL



Adapter for non-sparking Ex equipotential bonding bar PAS EX for connecting a flat conductor. For use in potentially explosive areas of Ex zones 1 and 2 (gases, vapours, mists) up to explosion group IIC as well as Ex zones 21 and 22 (dusts). Both indoor and outdoor installation permissible.

Type	PAS EX FL
Part No.	**472 499**
Lightning impulse current (10/350 µs) StSt (V4A) 30x3.5 mm / 40x5 mm	2HExIIC 75kA (non-sparking) T4
Lightning impulse current (10/350 µs) St/tZn 30x3.5 mm/40x5 mm	1HExIIC 100 kA (non-sparking) T4
Max. short-circuit current (AC 50 Hz / DC / 5 s) StSt (V4A) 30x3.5 mm / 40x5 mm	750 A / T4
Max. short-circuit current (AC 50 Hz / DC / 5 s) St/tZn 30x3.5 mm / 40x5 mm	1500 A / T4
PU	1 pc(s)

Note: Non-sparking only ensured in connection with PAS EX ...!

Equipotential Bonding for Ex Areas

PAS ... CUGALSSN



Crimped cable lug according to DIN 46235 with nickel barrier layer to avoid whisker formation.

General technical data:		
Material		Cu/gal (Ni)Sn
Cable lug hole		M10

Type	PKS 16 10 CUGALNISN	PKS 25 10 CUGALNISN
Part No.	472 432	472 433
Conductor cross-section	16 mm²	25 mm²
PU	3 pc(s)	3 pc(s)

Type	PKS 35 10 CUGALNISN	PKS 50 10 CUGALNISN
Part No.	472 434	472 435
Conductor cross-section	35 mm²	50 mm²
PU	3 pc(s)	3 pc(s)

Type	PKS 70 10 CUGALNISN	PKS 95 10 CUGALNISN
Part No.	472 436	472 437
Conductor cross-section	70 mm²	95 mm²
PU	3 pc(s)	3 pc(s)

Note: Non-sparking only ensured in connection with PAS EX ...!

Equipotential Bonding Busbars for Ex Zone 2/22

Equipotential bonding busbars for protective and functional equipotential bonding according to IEC 60364-4-41/60364-5-54 and lightning equipotential bonding according to IEC/EN 62305-3. Screws are secured against self-loosening according to DIN EN 62305-3 Supplement 2 by means of a spring washer.

6 terminals



Type PAS I ...	6AP M10 CU	6AP M10 V2A
Part No.	472 207	472 209
Material	Cu	StSt
Dimensions (l x w x d1)	295 x 40 x 5 mm	295 x 40 x 6 mm
Cross section	200 mm²	240 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	39 kA	8.9 kA
Screw	M10 x 25 mm	M10 x 25 mm
Material of screw / nut	StSt	StSt
Design	with spring washer	with spring washer
Material of insulator	UP	UP
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

8 terminals



Type PAS I ...	8AP M10 CU	8AP M10 V2A
Part No.	472 227	472 229
Material	Cu	StSt
Dimensions (l x w x d1)	365 x 40 x 5 mm	365 x 40 x 6 mm
Cross section	200 mm²	240 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	39 kA	8.9 kA
Screw	M10 x 25 mm	M10 x 25 mm
Material of screw / nut	StSt	StSt
Design	with spring washer	with spring washer
Material of insulator	UP	UP
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

10 terminals



Type PAS I ...	10AP M10 CU	10AP M10 V2A
Part No.	472 217	472 219
Material	Cu	StSt
Dimensions (l x w x d1)	435 x 40 x 5 mm	435 x 40 x 6 mm
Cross section	200 mm²	240 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	39 kA	8.9 kA
Screw	M10 x 25 mm	M10 x 25 mm
Material of screw / nut	StSt	StSt
Design	with spring washer	with spring washer
Material of insulator	UP	UP
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

12 terminals



Type PAS I ...	12AP M10 CU	12AP M10 V2A
Part No.	472 237	472 239
Material	Cu	StSt
Dimensions (l x w x d1)	505 x 40 x 5 mm	505 x 40 x 6 mm
Cross section	200 mm²	240 mm²
Short-circuit current (a.c. 50 Hz / d.c.) (1 s; ≤ 300 °C)	39 kA	8.9 kA
Screw	M10 x 25 mm	M10 x 25 mm
Material of screw / nut	StSt	StSt
Design	with spring washer	with spring washer
Material of insulator	UP	UP
Standard	EN 62561-1	EN 62561-1
PU	1 pc(s)	1 pc(s)

Accessories f. Equi. Bonding Busbars f. Ex Zone 2/22

Cover for EBB industry



Covers for EBB with insulators.

General technical data:		
Material		StSt

Type	AD PAS 6AP V2A	AD PAS 8AP V2A
Part No.	472 279	472 269
Type of EBB	6 terminals	8 terminals
Dimensions (l x w x d)	301 x 60 x 0.8 mm	371 x 60 x 0.8 mm
PU	1 pc(s)	1 pc(s)

Type	AD PAS 10AP V2A	AD PAS 12AP V2A
Part No.	472 289	472 299
Type of EBB	10 terminals	12 terminals
Dimensions (l x w x d)	441 x 60 x 0.8 mm	511 x 60 x 0.8 mm
PU	1 pc(s)	1 pc(s)

Insulator for EBB industry



Type	IS PAS M10
Part No.	472 210
Material / Colour	UP (thermoset) / red
Connection thread	M10 (length 12 mm)
Dimensions (d x h)	32 x 40 mm
PU	1 pc(s)

Fixing kit for EBBs, HDG steel



For mounting the insulators, e.g. on walls.

Type	BFS M10X20 PAS STTZN	BFS M10X20 PAS V2A
Part No.	472 201	472 202
Material of screw	St/tZn	StSt
Screw	M10 TX25	45 mm M10 x 20 mm
Version	Hexalobular T25	
Plastic dowel	Ø12 x 60 mm	Ø12 x 60 mm
Total length	80 mm	80 mm
	1 pc(s)	1 pc(s)

Equipotential Bonding on Cable Tray Systems for Ex Zone 2/22

The equipotential bonding system is mounted on cable tray systems. All conductive system parts and electrical equipment are integrated in the Ex equipotential bonding by means of equipotential bonding plates and clamps as well as a closed ring equipotential bonding conductor.

EB clamp for cable trays and EB plate



Equipotential bonding clamp for cable trays

- Connection only with ring equipotential bonding conductor (tinned copper cable)
- For mounting on the perforated cable tray or on the equipotential bonding plate (PAP 1 / PAP 2)
- EB clamp to be mounted approx. every 0.5 m

General technical data:	
Material	StSt
Material No.	1.4301
ASTM / AISI:	AISI 304
Connection to PAP 1 EX KB ER or PAP 2 EX KB ER or cable tray or wide span cable tray	
Material of screw / nut	StSt
Material No.	1.4301
ASTM / AISI:	AISI 304
EX zone	2/22

Type	PAK 35 M8 EX KB ER	PAK 50 M8 EX KB ER
Part No.	**306 200**	**306 201**
Clamping range EB ring conductor	35 mm², **Cu/gal Sn**	50 mm², **Cu/gal Sn**
Screw	M8 x 40 mm	M8 x 40 mm
Short-circuit current AC (50 Hz / 5 s)	1.5 kA	–
Short-circuit current DC (5 s)	250 A	–
PU	50 pc(s)	50 pc(s)

Type	PAK 70 M8 EX KB ER	PAK 35 M6 EX KB ER
Part No.	**306 202**	**306 204**
Clamping range EB ring conductor	70 mm², **Cu/gal Sn**	35 mm², **Cu/gal Sn**
Screw	M8 x 40 mm	M6 x 35 mm
Short-circuit current AC (50 Hz / 5 s)	1.5 kA	–
Short-circuit current DC (5 s)	250 A	–
PU	50 pc(s)	50 pc(s)

Type	PAK 50 M6 EX KB ER	PAK 70 M6 EX KB ER
Part No.	**306 205**	**306 206**
Clamping range EB ring conductor	50 mm², **Cu/gal Sn**	70 mm², **Cu/gal Sn**
Screw	M6 x 35 mm	M6 x 35 mm
Short-circuit current AC (50 Hz / 5 s)	–	–
Short-circuit current DC (5 s)	–	–
PU	50 pc(s)	50 pc(s)

EB clamp for wire cable trays



Equipotential bonding clamp PAK for wire cable trays

- Connection only with ring equipotential bonding conductor 35 mm², Part No. 832 838 (tinned copper cable)
- For mounting on the wire cable tray or on the EB plate (PAP 1 / PAP 2)
- EB clamp to be mounted approx. every 0.5 m

Type	PAK 35 M8 EX GI ER
Part No.	**306 203**
Material	StSt
Material No.	1.4301
ASTM / AISI:	AISI 304
Connection to	PAP 1 EX GI ER / PAP 2 EX GI ER or wire cable tray
Clamping range EB ring conductor	35 mm², **Cu/gal Sn**
Screw	M8 x 40 mm
Material of screw / nut	StSt
Material No.	1.4301
ASTM / AISI:	AISI 304
EX zone	2/22
Short-circuit current AC (50 Hz / 5 s)	1.5 kA
Short-circuit current DC (5 s)	250 A
PU	50 pc(s)

EB plate for cable trays



Equipotential bonding plate for cable trays

- For attaching the equipotential bonding clamp for the ring equipotential bonding conductor (tin-plated copper cable)
- For mounting on the cable tray with side perforations

Type	PAP 1 EX KB ER	PAP 2 EX KB ER
Part No.	**306 210**	**306 211**
Material	StSt	StSt
Material No.	1.4301	1.4301
ASTM / AISI:	AISI 304	AISI 304
Dimensions	120 x 180 mm	120 x 195 mm
Connection holes for EB conductor with cable lug	3x Ø11 mm, 3x Ø9 mm, strain relief 3x cable clamp M6	2x Ø11 mm, 12x Ø7 mm
Connection possibilities for EB clamps	PAK ... EX KB ER	PAK ... EX KB ER
Fixing holes for cable tray	[4x] 9 x 20 / [1x] 9 x 9 mm	[4x] 9 x 20 / [1x] 9 x 9 mm
EX zone	2/22	2/22
Short-circuit current AC (50 Hz / 5 s)	1.5 kA	1.5 kA
Short-circuit current DC (5 s)	250 A	250 A
PU	15 pc(s)	15 pc(s)

EB plate for wire cable trays



Equipotential bonding plate for wire cable trays

- For attaching the equipotential bonding clamp for the ring equipotential bonding conductor (tin-plated copper cable)
- For mounting on the wire cable tray

Type	PAP 1 EX GI ER	PAP 2 EX GI ER
Part No.	**306 212**	**306 213**
Material	StSt	StSt
Material No.	1.4301	1.4301
ASTM / AISI:	AISI 304	AISI 304
Dimensions	120 x 180 mm	120 x 195 mm
Connection holes for EB conductor with cable lug	3x Ø11 mm, 3x Ø9 mm, strain relief 3x cable clamp M6	2x Ø11 mm, 12x Ø7 mm
Connection possibilities for EB clamps	PAK ... EX KB ER	PAK ... EX KB ER
Fixing holes for wire cable tray	wire cable tray [4x] 9 x 20 / [1x] 9 x 9 mm	[4x] 9 x 20 / [1x] 9 x 9 mm
EX zone	2/22	2/22
Short-circuit current AC (50 Hz / 5 s)	1.5 kA	1.5 kA
Short-circuit current DC (5 s)	250 A	250 A
PU	15 pc(s)	15 pc(s)

EB pipe clamps



Equipotential bonding pipe clamp (SBD 60 PAK 35)

- For connection only with ring equipotential bonding conductors (35 mm)², Part no. 832 838 (tin-plated copper cable)
- For mounting on round pipe DN50 (60 mm)
- EB clamp to be mounted approx. every 0.5 m

Type	SBD 60 PAK 35 EX ER
Part No.	**306 220**
Material	StSt
Material No.	1.4301
ASTM / AISI:	AISI 304
Dimensions	Ø60 mm
Clamping range EB ring conductor	35 mm², Cu/gal Sn
EX zone	2/22
PU	50 pc(s)

Cable clamp



Cable clamp as strain relief for installing copper cables on the equipotential bonding plate PAP1 EX KB ER or PAP1 EX GI ER.

Type	MPE S 35 ER	MPE S 50/70 ER
Part No.	**306 230**	**306 231**
Material	StSt	StSt
Material No.	1.4301	1.4301
ASTM / AISI:	AISI 304	AISI 304
Connection to	PAP1 EX KB ER or PAP1 EX GI ER	PAP1 EX KB ER or PAP1 EX GI ER
Clamping range copper cable	35 mm²	50 or 70 mm²
EX zone	2/22	2/22
PU	10 pc(s)	10 pc(s)

Locknut



for cable clamps (MPE S 35 ER and MPE S 50/70 ER).

Type	SM SS M6 ER
Part No.	**306 240**
Material	StSt
Material No.	1.4301
ASTM / AISI:	AISI 304
Type	M6
EX zone	2/22
PU	20 pc(s)

Hexagon nut



for cable clamps (MPE S 35 ER and MPE S 50/70 ER).

Type	SKM M6 DIN 934 V2A
Part No.	**505 901**
Material	StSt
Material No.	1.4301
ASTM / AISI:	AISI 304
Type	M6
PU	20 pc(s)

Spring washer



for cable clamps (MPE S 35 ER and MPE S 50/70 ER).

Type	FR A6 V2A
Part No.	**524 906**
Material	StSt
Material No.	1.4310
ASTM / AISI:	AISI 301
Type	A6
PU	20 pc(s)

Accessories for Equipotential Bonding on Cable Tray Systems for Ex Zone 2/22

Tinned copper cable



For use as a ring equipotential bonding conductor or equipotential bonding.

General technical data:	
Material	Cu/gal Sn

Type	SEIL 7.5 CUGALSN 35Q R100M	SEIL 9 50Q CUGALSN R100M
Part No.	**832 838**	**832 839**
Cross-section	35 mm²	50 mm²
Cable structure qty x Ø wire	7 x 2.5 mm	19 x 1.8 mm
PU	100 m	100 m

EXFS L / EXFS KU

For bridging insulating flanges and insulating glands in cathodically protected pipe sections (e.g., pipelines or LPG plants) in hazardous areas in case of surges and lightning currents.

EXFS L



Ex isolating spark gap for aboveground installation.

General technical data:	
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	50 kA
Class (lightning current carrying capability)	N
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 2.5 kV
Degree of protection	IP 54
ATEX approvals	DEKRA 11ATEX0146 X
Ex marking according to EN 60079-0 and EN 60079-15: gas	II 3 G Ex nC IIC T4 Gc
IECEx approvals	IECEx DEK 11.0063X
Ex marking according to EN 60079-0	Ex nC IIC T4 Gc

Type EXFS ...	L100	L200
Part No.	**923 060**	**923 061**
Cable length	100 mm	200 mm
PU	1 pc(s)	1 pc(s)

EXFS KU



Ex isolating spark gap with connecting cables for aboveground and underground installation; with water-proof sheath; can be shortened to keep cables as short as possible.

Type EXFS ...	KU
Part No.	**923 019**
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	50 kA
Class (lightning current carrying capability)	N
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 2.5 kV
Degree of protection	IP 67
ATEX approvals	DEKRA 11ATEX0146 X
Ex marking according to EN 60079-0 and EN 60079-15: gas	II 3 G Ex nC IIC T4 Gc
IECEx approvals	IECEx DEK 11.0063X
Ex marking according to EN 60079-0	Ex nC IIC T4 Gc
Cable length	2x approx. 1500 mm

EXFS 100 / EXFS 100 KU

For bridging insulating flanges and insulating glands in cathodically protected pipe sections (e.g. pipelines or LPG plants) in hazardous areas in case of surges and lightning currents.

- Class (lighning current carrying capability) H (100 kA)
- Particularly low sparkover voltage
- ATEX and IECEx approvals for zone 1 and zone 21

EXFS 100

Isolating spark gap for use in hazardous areas with plastic sheath and M10 threaded screws.



Type EXFS ...	100
Part No.	**923 100**
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	100 kA
Class (lightning current carrying capability)	H
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 1.25 kV
Degree of protection	IP 67
Approvals	UL, Inmetro
ATEX approvals	DEKRA 11ATEX0178 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	II 2 G Ex db IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	II 2 D Ex tb IIIC T80 °C Db IP 66/67
IECEx approvals	IECEx KEM 09.0051X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex db IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80 °C Db IP 66/67
Inmetro approvals	TÜV 17.0698 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex db IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80 °C Db IP 66/67
PU	1 pc(s)

EXFS 100 KU

Ex isolating spark gap with connecting cable for aboveground and underground installation; with water-proof sheath; can be shortened to keep cables as short as possible.



Type EXFS ...	100 KU
Part No.	**923 101**
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	100 kA
Class (lightning current carrying capability)	H
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 1.25 kV
Degree of protection	IP 67
ATEX approvals	DEKRA 11ATEX0178 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	II 2 G Ex d IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	II 2 D Ex tb IIIC T80 °C Db IP 66/67
IECEx approvals	IECEx KEM 09.0051X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex d IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80°C Db IP 66/67
Inmetro approvals	TÜV 17.0698 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex db IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80 °C Db IP 66/67
Cable length	2x approx. 2000 mm
PU	1 pc(s)

Accessories for EXFS 100 / EXFS 100 KU

Angled connection brackets – IF 1 –

Angled connection bracket for EXFS ...; diameter corresponds to the bolt diameter of the flange joint; material: St/tZn.



Type	AB EXFS IF1 W 11	AB EXFS IF1 W 14
Part No.	**923 311**	**923 314**
Borehole diameter d1	11 mm	14 mm

Type	AB EXFS IF1 W 18	AB EXFS IF1 W 22
Part No.	**923 318**	**923 322**
Borehole diameter d1	18 mm	22 mm

Type	AB EXFS IF1 W 26	AB EXFS IF1 W 30
Part No.	**923 326**	**923 330**
Borehole diameter d1	26 mm	30 mm

Type	AB EXFS IF1 W 33	AB EXFS IF1 W 36
Part No.	**923 333**	**923 336**
Borehole diameter d1	33 mm	36 mm

Type	AB EXFS IF1 W 39	AB EXFS IF1 W 42
Part No.	**923 339**	**923 342**
Borehole diameter d1	39 mm	42 mm

Type	AB EXFS IF1 W 48	AB EXFS IF1 W 56
Part No.	**923 348**	**923 356**
Borehole diameter d1	48 mm	56 mm

Type		AB EXFS IF1 W 62
Part No.		**923 362**
Borehole diameter d1		62 mm

Flat connection brackets – IF 3 –

Flat connection bracket for EXFS ...; diameter corresponds to the bolt diameter of the flange joint; material: St/tZn.



Type	AB EXFS IF3 G 11	AB EXFS IF3 G 14
Part No.	**923 211**	**923 214**
Borehole diameter d1	11 mm	14 mm

Type	AB EXFS IF3 G 18	AB EXFS IF3 G 22
Part No.	**923 218**	**923 222**
Borehole diameter d1	18 mm	22 mm

Type	AB EXFS IF3 G 26	AB EXFS IF3 G 30
Part No.	**923 226**	**923 230**
Borehole diameter d1	26 mm	30 mm

Type	AB EXFS IF3 G 33	AB EXFS IF3 G 36
Part No.	**923 233**	**923 236**
Borehole diameter d1	33 mm	36 mm

Type	AB EXFS IF3 G 39	AB EXFS IF3 G 42
Part No.	**923 239**	**923 242**
Borehole diameter d1	39 mm	42 mm

PU (all Connection brackets)	1 pc(s)

EXFS 100: Connecting Cable, Cu, 25 mm²

Connecting cable for EXFS 100; two cable lugs (Ø10.5 mm) made of Cu/gal Sn, screw, nut and spring washer.



Type AL EXFS ...	L100 KS	L200 KS	L300 KS
Part No.	**923 025**	**923 035**	**923 045**
Cable length	100 mm	200 mm	300 mm
PU	1 pc(s)	1 pc(s)	1 pc(s)



Lightning Strike Counter

Counter for digitally recording impulse currents.

The discharge current counter is preferably installed between the equipotential bonding bar and the earth-termination system.

Lightning strike counter DLSC basic



Type	DLSC 100
Part No.	**599 101** NEW
Lightning strike counter as per GB/T 33588.6 and IEC 62561-6	Type 1 + type 2
Max. countable impulse current (10/350 µs) (I_{imp})	100 kA
Min. countable impulse current (10/350 µs) (I_{imp})	1 kA
Max. countable nominal discharge current (8/20 µs) (I_n)	100 kA
Min. countable nominal discharge current (8/20 µs) (I_n)	1 kA
OLED display	Electronic counter 0–999
Internal power supply (battery operation)	2x lithium battery, type CR17335 (replaceable)
Battery status check	OLED on the device
Setting device	Buttons on the device
Resetting function	Buttons on the device (e.g. to reset the meter reading to 0)
Operating temperature range (T_U)	-20°C to +70°C
Storage temperature range	-30°C to +80°C
For mounting on	Round/flat conductor, HVI, HVI light, HVI light plus, HVI power Conductor
Clamping range Rd	8-12; 12-20 / HVI 20-27 mm
Clamping range Fl	25-40 mm
Enclosure material: Counter	thermoplastic, grey, UL 94 V-0
Enclosure material: sensor	- (integrated)
Installation point	Outdoor area
Degree of protection	IP 67
Standard	IEC 62561-6
Approvals	CE, GB, UKCA
Dimensions (l x w x h)	202 x 90 x 59 mm
PU	1 pc(s)

Earth Resistance Meter Metraclip Earth

For earth loop measurement.
Easy handling, high-resolution OLED display.
Automatic calibration, Bluetooth interface incl. software.



Type	EMZ M312N METRACLIP EARTH
Part No.	**578 386**
Display	OLED display
Resistance measuring range	0.01 to 1,500 ohms
Current measuring range	0.2 mA to 40 A
Category of measurement	CAT IV 600 V
Inside diameter clamp	35 mm
PU	1 pc(s)

EP4 Continuity Tester

Continuity tester for measuring the resistance of e.g. air-termination and down conductors and subsequently installed reinforcing bars of buildings.
The tester is suited for measuring the resistance of earth-termination systems according to DIN 18014 with a test current of 200 mA.



Type	DGP EP4
Part No.	**578 370**
Display	digital LCD display
Resistance measuring range	0.01 Ω to 2,000 kΩ
Measuring current	200 mA in the range up to 10 Ω acc. to EN 61557-4
Dimensions (l x w x d)	230 x 60 x 40 mm
PU	1 pc(s)

Case with Measuring Accessory for Continuity Tester

For storing the continuity tester and measuring accessories.

Equipment includes:

- 2 coilers with unwinding handle and 50 m measuring line, blue, with banana pin, Part No. 585 320
- 1 measuring line 0.75 mm², 3 m long, black, with banana pin on both sides, Part No. 545 020
- 1 test clamp, clamping range 2-21 mm, Part No. 588 000



Type	DGPKO ML PK ... KL
Part No.	**582 620**
Material	**artificial leather**
Dimensions (l x w x h)	370 x 130 x 220 mm
PU	1 pc(s)

Learn more about our highlights and discover our **new measuring devices**:
https://de.hn/6Y4s2

Earth Resistance Measuring Equipment in a Case

The earth resistance measuring equipment in a case comes with carrying strap for easy transport.



Measuring case equipment includes:

- 1 coiler with unwinding handle and 25-m measuring line, red, with banana pin, Part No. 585 310
- 1 coiler with unwinding handle and 50 m measuring line, blue, with banana pin, Part No. 585 320
- 2 augers 350 mm long, Part No. 587 460
- 2 measuring lines, 0.75 mm², 3 m long, black, with banana pins on both sides, Part No. 545 020 (connection between earth-termination system and earth resistance meter)
- 1 measuring line, 0.75 mm², 0.5 m long, red, with banana pin on both sides, Part No. 545 010
- 1 measuring line, 0.75 mm², 0.5 m long, blue, with banana pins on both sides, Part No. 545 011 (connection between coiler and auger)
- 1 test clamp, clamping range 2-21 mm, Part No. 588 000

There is an empty compartment in the case to hold a measuring device.

Type	EMKO ML EB PK ... KL
Part No.	**582 600**
Material	**artificial leather**
Dimensions (l x w x h)	400 x 200 x 240 mm
PU	1 pc(s)

Accessories for Earth Resistance Measuring Equipment in a Case

Auger

As an auxiliary earth electrode and probe for measuring the earth and soil resistance. With hole for banana pin of the measuring line.



Type	EB ASSM5 L350 TGGALZN
Part No.	**587 460**
Connection	✹ M5
Material	**MCI/gal Zn**
Length	350 mm
PU	1 pc(s)

Test clamp up to 21 mm

For measuring earth electrodes.



Type	PK 2.21 ASSM5 TGTZN
Part No.	**588 000**
Connection	✹ M5
Material	**MCI/tZn**
Clamping range	2-21 mm
Clamping spindle	M8
PU	1 pc(s)

Coiler, width 40 mm

With split plug, socket and handle.



General technical data:	
Width	40 mm
Material	**plastic**

Type	DH K 40 BS ML0.75 L25M RT	DH K 40 BS ML0.75 L50M RT
Part No.	**585 310**	**585 051**
Length of measuring line	25 m	50 m
Colour of measuring line	red ●	red ●
PU	1 pc(s)	1 pc(s)

Type	DH K 40 BS ML0.75 L25M BL	DH K 40 BS ML0.75 L50M BL
Part No.	**585 025**	**585 320**
Length of measuring line	25 m	50 m
Colour of measuring line	blue ●	blue ●
PU	1 pc(s)	1 pc(s)

Coiler, width 80 mm

With banana pin, socket and handle.



Type	DH K 80 BS ML0.75 L100M RT	DH K 80 BS ML0.75 L100M BL
Part No.	**585 211**	**585 210**
Length of measuring line	100 m	100 m
Colour of measuring line	red ●	blue ●
Width	80 mm	80 mm
Material	**plastic**	**plastic**
PU	1 pc(s)	1 pc(s)

Coiler, empty

With socket and handle.



Type	DH K 40 BB ASG L	DH K 80 BB ASG L
Part No.	**585 010**	**585 200**
Length of measuring line	0 m	0 m
Width	40 mm	80 mm
Material	**plastic**	**plastic**
Colour	grey ●	grey ●
PU	1 pc(s)	1 pc(s)

Measuring line



Type	ML 0.75 L100M CU BL	ML 0.75 L100M CU RT
Part No.	**545 000**	**545 001**
Cross section	0.75 mm²	0.75 mm²
Material	**Cu**	**Cu**
Designation	H05V-K	H05V-K
Insulation	**PVC**	**PVC**
Colour	blue ●	red ●
PU	100 m	100 m

Support tool

Aluminium support tool with safety bow made of stainless steel, for concrete bases of 8.5kg and 17kg.



Type	TG AL SB A2 BES 17KG
Part No.	**590 000** NEW
Material	Al / StSt
Diameter	16 mm
PU	1 pc(s)

Wire Straighteners

For straightening round conductors made of different materials (HDG steel, Cu and Al).

5 guide pulleys, with handles



Type DRG ...	5RO 7.10 HG STGALZN
Part No.	**597 004**
Material	**St/gal Zn**
Support Rd	7-10 mm
Material of guide pulleys	**St/gal Zn**
Dimensions	approx. 180 x 290 mm
PU	1 pc(s)

10 guide pulleys, with handles



Type DRG ...	10RO 7.10 HG STGALZN
Part No.	**597 005**
Material	**St/gal Zn**
Support Rd	7-10 mm
Material of guide pulleys	**St/gal Zn**
Dimensions	approx. 650 x 180 mm
PU	1 pc(s)

10 guide pulleys, movable on rubber wheels

With wire unwinding device, for handling coils (St/tZn, Cu and Al) with an inner diameter of 450-800 mm and widths up to 150 mm.



Type DRG ...	10RO 7.10 FB STTZN
Part No.	**597 006**
Material	**St/tZn**
Support Rd	7-10 mm
Material of guide pulleys	**St/gal Zn**
Dimensions	approx. 1650 x 1200 mm
PU	1 pc(s)

Straightening Tool

For bending and straightening conductors.

Straight design



Type RE ...	G 8.10 FL4 STBRUE
Part No.	**596 000**
Material	**St/burnished**
For Rd / Fl	8-10 / -4 mm
Length	260 mm
PU	1 pc(s)

Cranked design

Wrench size 13 for screwing.



Type RE ...	GK 8.10 SW13 STBRUE
Part No.	**595 000**
Material	**St/burnished**
For Rd	8-10 mm
Length	260 mm
PU	1 pc(s)

Spider Wrench

Universal use for installing lightning protection systems. With four wrench sizes.



Type	KSS SW10 13 17 19 STGALZN
Part No.	**572 000**
Material	**St/gal Zn**
Wrench size	10, 13, 17, 19 mm
PU	1 pc(s)



Earthing Cables with Cable Lugs open

Highly flexible copper conductor, frost-resistant, UV-stabilised.
Packing in accordance with VG 96927-11.

Cable lug, 2x open, 2x M8 / M10



General technical data:	
Cable cross section	10 mm²
Cable lug open	2x M8 / M10
Colour	black ●

Type	EL10 L0.35M 2KSO 8.10	EL10 L0.55M 2KSO 8.10
Part No.	410 003	410 005
Cable length (l1)	0.35 m	0.55 m
Stock No.	6150-12-156-9107	6150-12-156-8386
PU	1 pc(s)	1 pc(s)

Type	EL10 L0.65M 2KSO 8.10	EL10 L1.05M 2KSO 8.10
Part No.	410 006	410 010
Cable length (l1)	0.65 m	1.05 m
Stock No.	6150-12-156-9108	6150-12-156-8387
PU	1 pc(s)	1 pc(s)

Type	EL10 L1.55M 2KSO 8.10	EL10 L2.05M 2KSO 8.10
Part No.	410 015	410 020
Cable length (l1)	1.55 m	2.05 m
Stock No.	6150-12-156-9069	6150-12-156-9073
PU	1 pc(s)	1 pc(s)

Type	EL10 L2.55M 2KSO 8.10	EL10 L3.05M 2KSO 8.10
Part No.	410 025	410 030
Cable length (l1)	2.55 m	3.05 m
Stock No.	6150-12-156-9072	6150-12-156-9109
PU	1 pc(s)	1 pc(s)

Type	EL10 L3.55M 2KSO 8.10	EL10 L4.05M 2KSO 8.10
Part No.	410 035	410 040
Cable length (l1)	3.55 m	4.05 m
Stock No.	6150-12-156-9071	6150-12-156-9070
PU	1 pc(s)	1 pc(s)

Type	EL10 L5.05M 2KSO 8.10	EL10 L6.05M 2KSO 8.10
Part No.	410 050	410 060
Cable length (l1)	5.05 m	6.05 m
Stock No.	6150-12-156-6051	6150-12-156-9110
PU	1 pc(s)	1 pc(s)

Type	EL10 L7.05M 2KSO 8.10	EL10 L10.0M 2KSO 8.10
Part No.	410 070	410 099
Cable length (l1)	7.05 m	10.0 m
Stock No.	6150-12-156-9111	6150-12-156-9112
PU	1 pc(s)	1 pc(s)

Type	EL10 L14.0M 2KSO 8.10	EL10 L15.0M 2KSO 8.10
Part No.	410 140	410 150
Cable length (l1)	14.0 m	15.0 m
Stock No.	6150-12-156-6207	6150-12-161-4272
PU	1 pc(s)	1 pc(s)

Type	EL10 L20.0M 2KSO 8.10	EL10 L30.0M 2KSO 8.10
Part No.	410 199	410 299
Cable length (l1)	20.0 m	30.0 m
Stock No.	6150-12-156-9113	6150-12-156-9114
PU	1 pc(s)	1 pc(s)

Cable lug, 2x open, 1x M8 / M10 and 1x M5 / M6



General technical data:	
Cable cross section	10 mm²
Cable lug open	1x M8 / M10 1x M5 / M6
Colour	black ●

Type	EL10 L0.35M 1KSO 8.10 1KSO 5.6	EL10 L0.55M 1KSO 8.10 1KSO 5.6
Part No.	410 603	410 605
Cable length (l1)	0.35 m	0.55 m
PU	1 pc(s)	1 pc(s)

Type	EL10 L1.05M 1KSO 8.10 1KSO 5.6	EL10 L1.55M 1KSO 8.10 1KSO 5.6
Part No.	410 610	410 615
Cable length (l1)	1.05 m	1.55 m
Stock No.	–	6150-12-308-6928
PU	1 pc(s)	1 pc(s)

Type	EL10 L2.05M 1KSO 8.10 1KSO 5.6	EL10 L2.55M 1KSO 8.10 1KSO 5.6
Part No.	410 620	410 625
Cable length (l1)	2.05 m	2.55 m
PU	1 pc(s)	1 pc(s)

Type		EL10 L3.05M 1KSO 8.10 1KSO 5.6
Part No.		410 630
Cable length (l1)		3.05 m
Stock No.		6150-12-353-5887
PU		1 pc(s)

Cable lug, 2x open, 2x M8 / M10



General technical data:	
Cable cross section	16 mm²
Cable lug open	2x M8 / M10
Colour	black ●
Standard	EN 62561-1

Type	EL16 L0.35M 2KSO 8.10	EL16 L0.55M 2KSO 8.10
Part No.	416 003	416 005
Cable length (l1)	0.35 m	0.55 m
Stock No.	6150-12-156-9115	6150-12-156-9085
PU	1 pc(s)	1 pc(s)

Type	EL16 L0.65M 2KSO 8.10	EL16 L1.05M 2KSO 8.10
Part No.	416 006	416 010
Cable length (l1)	0.65 m	1.05 m
Stock No.	6150-12-156-9116	6150-12-156-9084
PU	1 pc(s)	1 pc(s)

Type	EL16 L1.55M 2KSO 8.10	EL16 L2.05M 2KSO 8.10
Part No.	416 015	416 020
Cable length (l1)	1.55 m	2.05 m
Stock No.	6150-12-156-9117	6150-12-156-9118
PU	1 pc(s)	1 pc(s)

Type	EL16 L2.55M 2KSO 8.10	EL16 L3.05M 2KSO 8.10
Part No.	416 025	416 030
Cable length (l1)	2.55 m	3.05 m
Stock No.	6150-12-156-9119	6150-12-156-9083
PU	1 pc(s)	1 pc(s)

Type	EL16 L3.55M 2KSO 8.10	EL16 L4.05M 2KSO 8.10
Part No.	416 035	416 040
Cable length (l1)	3.55 m	4.05 m
Stock No.	6150-12-156-6208	6150-12-156-8388
PU	1 pc(s)	1 pc(s)

Type	EL16 L5.05M 2KSO 8.10	EL16 L6.05M 2KSO 8.10
Part No.	416 050	416 060
Cable length (l1)	5.05 m	6.05 m
Stock No.	6150-12-156-9120	6150-12-156-9082
PU	1 pc(s)	1 pc(s)

Type	EL16 L7.05M 2KSO 8.10	EL16 L8.05M 2KSO 8.10
Part No.	416 070	416 080
Cable length (l1)	7.05 m	8.05 m
Stock No.	6150-12-156-9121	6150-12-188-4475
PU	1 pc(s)	1 pc(s)

Type	EL16 L10.05M 2KSO 8.10	EL16 L12.05M 2KSO 8.10
Part No.	416 100	416 120
Cable length (l1)	10.05 m	12.05 m
Stock No.	6150-12-156-9122	6150-12-188-4476
PU	1 pc(s)	1 pc(s)

Type	EL16 L14.05M 2KSO 8.10	EL16 L15.05M 2KSO 8.10
Part No.	416 140	416 150
Cable length (l1)	14.05 m	15.05 m
Stock No.	6150-12-156-9123	6150-12-161-4273
PU	1 pc(s)	1 pc(s)

Type	EL16 L20.05M 2KSO 8.10	EL16 L22.05M 2KSO 8.10
Part No.	416 200	416 220
Cable length (l1)	20.05 m	22.05 m
Stock No.	6150-12-156-9124	6150-12-188-4477
PU	1 pc(s)	1 pc(s)

Type	EL16 L28.05M 2KSO 8.10	EL16 L30.05M 2KSO 8.10
Part No.	416 280	416 300
Cable length (l1)	28.05 m	30.05 m
Stock No.	6150-12-188-4478	6150-12-156-9125
PU	1 pc(s)	1 pc(s)

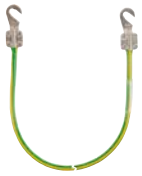
Cable lug, 2x open, 1x M8 / M10 and 1x M5 / M6



Type	EL16 L1.55M 1KSO 8.10 1KSO 5.6
Part No.	416 516
Cable cross section	16 mm²
Cable length (l1)	1.55 m
Cable lug open	1x M8 / M10 1x M5 / M6
Colour	black ●
Stock No.	6150-12-308-6607
PU	1 pc(s)

Cable lug, 2x open, 2x M8 / M10 green / yellow

Highly flexible copper conductor (ESY), frost-proof.



General technical data:	
Cable cross section	16 mm²
Cable lug open	2x M8 / M10
Colour	green ● / yellow ●

Type	EL16 L0.55M 2KSO 8.10 GG	EL16 L1.05M 2KSO 8.10 GG
Part No.	417 005	417 010
Cable length (l1)	0.55 m	1.05 m
Stock No.	6150-12-313-5059	6150-12-313-5060
PU	1 pc(s)	1 pc(s)

Type	EL16 L1.55M 2KSO 8.10 GG	EL16 L2.05M 2KSO 8.10 GG
Part No.	417 015	417 020
Cable length (l1)	1.55 m	2.05 m
Stock No.	6150-12-313-5061	6150-12-313-5062
PU	1 pc(s)	1 pc(s)

Type	EL16 L3.05M 2KSO 8.10 GG	EL16 L5.05M 2KSO 8.10 GG
Part No.	417 030	417 050
Cable length (l1)	3.05 m	5.05 m
Stock No.	6150-12-313-5063	6150-12-313-5064
PU	1 pc(s)	1 pc(s)

Type	EL16 L10.05M 2KSO 8.10 GG	EL16 L15.05M 2KSO 8.10 GG
Part No.	417 100	417 115
Cable length (l1)	10.05 m	15.05 m
Stock No.	6150-12-313-5065	6150-12-313-5066
PU	1 pc(s)	1 pc(s)

Type	EL16 L20.05M 2KSO 8.10 GG	EL16 L25.05M 2KSO 8.10 GG
Part No.	417 120	417 125
Cable length (l1)	20.05 m	25.05 m
Stock No.	6150-12-313-5067	6150-12-185-8587
PU	1 pc(s)	1 pc(s)

Type	EL16 L30.05M 2KSO 8.10 GG	EL16 L50.05M 2KSO 8.10 GG
Part No.	417 130	417 150
Cable length (l1)	30.05 m	50.05 m
Stock No.	6150-12-313-5068	6150-12-174-2744
PU	1 pc(s)	1 pc(s)

Packing in accordance with specifications of the VG standards (defence equipment standards) must be explicitly indicated when ordering.

Earthing Cables with Cable Lugs open / closed

Highly flexible copper cable, frost-resistant, UV stabilised.
Packing in accordance with VG 96927-11.

Cable lug, 1x open M5 / M6 and 1x closed M8



General technical data:	
Cable cross section	10 mm²
Cable lug open	M5 / M6
Cable lug closed	M8
Hole Ø	8.5 mm
Colour	black ●

Type	EL10 L0.35M 1KSO 5.6 1KSG 8	EL10 L0.65M 1KSO 5.6 1KSG 8
Part No.	410 503	410 506
Cable length (l1)	0.35 m	0.65 m
Stock No.	6150-12-196-7302	6150-12-195-9694
PU	1 pc(s)	1 pc(s)

Type	EL10 L1.05M 1KSO 5.6 1KSG 8	EL10 L1.55M 1KSO 5.6 1KSG 8
Part No.	410 510	410 515
Cable length (l1)	1.05 m	1.55 m
Stock No.	6150-12-196-7304	6150-12-196-7303
PU	1 pc(s)	1 pc(s)

Type	EL10 L2.05M 1KSO 5.6 1KSG 8	EL10 L2.55M 1KSO 5.6 1KSG 8
Part No.	410 520	410 525
Cable length (l1)	2.05 m	2.55 m
Stock No.	6150-12-196-7606	6150-12-198-6807
PU	1 pc(s)	1 pc(s)

Type	EL10 L3.05M 1KSO 5.6 1KSG 8
Part No.	410 530
Cable length (l1)	3.05 m
Stock No.	6150-12-198-6808
PU	1 pc(s)

Cable lug, 1x open M8 / M10 and 1x closed M8



General technical data:	
Cable cross section	10 mm²
Cable lug open	M8 / M10
Cable lug closed	M8
Hole Ø	8.5 mm
Colour	black ●

Type	EL10 L0.20M 1KSO 8.10 1KSG 8	EL10 L0.35M 1KSO 8.10 1KSG 8
Part No.	410 401	410 403
Cable length (l1)	0.20 m	0.35 m
Stock No.	6150-12-300-9132	6150-12-195-9490
PU	1 pc(s)	1 pc(s)

Type	EL10 L0.45M 1KSO 8.10 1KSG 8	EL10 L0.55M 1KSO 8.10 1KSG 8
Part No.	410 404	410 450
Cable length (l1)	0.45 m	0.55 m
Stock No.	6150-12-192-5455	6150-12-197-0088
PU	1 pc(s)	1 pc(s)

Type	EL10 L0.65M 1KSO 8.10 1KSG 8	EL10 L1.05M 1KSO 8.10 1KSG 8
Part No.	410 406	410 411
Cable length (l1)	0.65 m	1.05 m
Stock No.	6150-12-192-5456	6150-12-192-5457
PU	1 pc(s)	1 pc(s)

Type	EL10 L1.55M 1KSO 8.10 1KSG 8	EL10 L2.05M 1KSO 8.10 1KSG 8
Part No.	410 415	410 420
Cable length (l1)	1.55 m	2.05 m
Stock No.	6150-12-192-5458	6150-12-198-1217
PU	1 pc(s)	1 pc(s)

Type	EL10 L2.55M 1KSO 8.10 1KSG 8	EL10 L3.05M 1KSO 8.10 1KSG 8
Part No.	410 425	410 430
Cable length (l1)	2.55 m	3.05 m
Stock No.	6150-12-198-6803	6150-12-198-6805
PU	1 pc(s)	1 pc(s)

Cable lug, 1x open M8 / M10 and 1x closed M10



General technical data:	
Cable cross section	10 mm²
Cable lug open	M8 / M10
Cable lug closed	M10
Hole Ø	10.5 mm
Colour	black ●

Type	EL10 L0.35M 1KSO 8.10 1KSG 10	EL10 L0.55M 1KSO 8.10 1KSG 10
Part No.	410 413	410 405
Cable length (l1)	0.35 m	0.55 m
Stock No.	6150-12-196-7301	6150-12-196-6346
PU	1 pc(s)	1 pc(s)

Type	EL10 L0.65M 1KSO 8.10 1KSG 10	EL10 L1.05M 1KSO 8.10 1KSG 10
Part No.	410 407	410 410
Cable length (l1)	0.65 m	1.05 m
Stock No.	6150-12-198-7027	6150-12-171-2783
PU	1 pc(s)	1 pc(s)

Type	EL10 L1.55M 1KSO 8.10 1KSG 10	EL10 L2.05M 1KSO 8.10 1KSG 10
Part No.	410 416	410 421
Cable length (l1)	1.55 m	2.05 m
Stock No.	6150-12-198-1216	6150-12-198-1218
PU	1 pc(s)	1 pc(s)

Type	EL10 L2.55M 1KSO 8.10 1KSG 10	EL10 L3.05M 1KSO 8.10 1KSG 10
Part No.	410 426	410 431
Cable length (l1)	2.55 m	3.05 m
Stock No.	6150-12-198-6804	6150-12-198-6806
PU	1 pc(s)	1 pc(s)

Cable lug, 1x open M5 / M6 and 1x closed M8



Type	EL16 L0.55M 1KSO 5.6 1KSG 8
Part No.	**416 505**
Cable cross section	16 mm²
Cable length (l1)	0.55 m
Cable lug open	M5 / M6
Cable lug closed	M8
Hole Ø	8.5 mm
Colour	black ●
Stock No.	6150-12-300-9131
PU	1 pc(s)

Cable lug, 1x open M8 / M10 and 1x closed M8



General technical data:	
Cable cross section	16 mm²
Cable lug open	M8 / M10
Cable lug closed	M8
Hole Ø	8.5 mm
Colour	black ●

Type	EL16 L1.05M 1KSO 8.10 1KSG 8	EL16 L1.55M KSO 8.10 KSG 8
Part No.	**416 411**	**416 415**
Cable length (l1)	1.05 m	1.55 m
Stock No.	6150-12-308-6934	6150-12-308-6981
PU	1 pc(s)	1 pc(s)

Type	EL16 L2.05M 1KSO 8.10 1KSG 8	EL16 L2.55M 1KSO 8.10 1KSG 8
Part No.	**416 420**	**416 425**
Cable length (l1)	2.05 m	2.55 m
Stock No.	6150-12-308-6933	6150-12-308-6932
PU	1 pc(s)	1 pc(s)

Type	EL16 L3.05M 1KSO 8.10 1KSG 8	EL16 L4.05M 1KSO 8.10 1KSG 8
Part No.	**416 430**	**416 440**
Cable length (l1)	3.05 m	4.05 m
Stock No.	6150-12-308-6931	6150-12-308-6930
PU	1 pc(s)	1 pc(s)

Type	EL16 L5.05M 1KSO 8.10 1KSG 8
Part No.	**416 450**
Cable length (l1)	5.05 m
Stock No.	6150-12-308-6929
PU	1 pc(s)

Cable lug, 1x open M8 / M10 and 1x closed M10



General technical data:	
Cable cross section	16 mm²
Cable lug open	M8 / M10
Cable lug closed	M10
Hole Ø	10.5 mm
Colour	black ●
Standard	EN 62561-1

Type	EL16 L0.35M 1KSO 8.10 1KSG 10	EL16 L1.05M 1KSO 8.10 1KSG 10
Part No.	**416 403**	**416 410**
Cable length (l1)	0.35 m	1.05 m
Stock No.	–	6150-12-308-6941
PU	1 pc(s)	1 pc(s)

Type	EL16 L1.55M 1KSO 8.10 1KSG 10	EL16 L2.05M 1KSO 8.10 1KSG 10
Part No.	**416 416**	**416 421**
Cable length (l1)	1.55 m	2.05 m
Stock No.	6150-12-308-6940	6150-12-308-6939
PU	1 pc(s)	1 pc(s)

Type	EL16 L2.55M 1KSO 8.10 1KSG 10	EL16 L3.05M 1KSO 8.10 1KSG 10
Part No.	**416 426**	**416 431**
Cable length (l1)	2.55 m	3.05 m
Stock No.	6150-12-309-6938	6150-12-308-6937
PU	1 pc(s)	1 pc(s)

Type	EL16 L4.05M 1KSO 8.10 1KSG 10	EL16 L5.05M 1KSO 8.10 1KSG 10
Part No.	**416 441**	**416 451**
Cable length (l1)	4.05 m	5.05 m
Stock No.	6150-12-308-6936	6150-12-308-6935
PU	1 pc(s)	1 pc(s)

Packing in accordance with specifications of the VG standards (defence equipment standards) must be explicitly indicated when ordering.

Earthing Cables with Cable Lugs closed

Highly flexible copper cable, frost-resistant, UV stabilised.
Packing in accordance with VG 96927-11.

Cable lug, 2x closed M10



General technical data:	
Cable cross section	10 mm²
Cable lug closed	2x M10
Hole Ø	10.5 mm
Colour	black ●

Type	EL10 L0.35M 2KSG 10	EL10 L0.55M 2KSG 10
Part No.	410 903	410 905
Cable length (l1)	0.35 m	0.55 m
Stock No.	6150-12-198-1948	6150-12-198-6809
PU	1 pc(s)	1 pc(s)

Type	EL10 L0.65M 2KSG 10	EL10 L1.05M 2KSG 10
Part No.	410 906	410 910
Cable length (l1)	0.65 m	1.05 m
Stock No.	6150-12-198-6810	6150-12-198-1482
PU	1 pc(s)	1 pc(s)

Type	EL10 L1.55M 2KSG 10	EL10 L2.05M 2KSG 10
Part No.	410 915	410 920
Cable length (l1)	1.55 m	2.05 m
Stock No.	6150-12-168-2696	6150-12-168-2695
PU	1 pc(s)	1 pc(s)

Type	EL10 L2.55M 2KSG 10	EL10 L3.05M 2KSG 10
Part No.	410 925	410 930
Cable length (l1)	2.55 m	3.05 m
Stock No.	6150-12-168-2694	–
PU	1 pc(s)	1 pc(s)

Cable lug, 2x closed M10



General technical data:	
Cable cross section	16 mm²
Cable lug closed	2x M10
Hole Ø	10.5 mm
Colour	black ●
Standard	EN 62561-1

Type	EL16 L0.35M 2KSG 10	EL16 L0.55M 2KSG 10
Part No.	416 903	416 905
Cable length (l1)	0.35 m	0.55 m
Stock No.	6150-12-198-6812	6150-12-198-6813
PU	1 pc(s)	1 pc(s)

Type	EL16 L0.65M 2KSG 10	EL16 L1.05M 2KSG 10
Part No.	416 906	416 910
Cable length (l1)	0.65 m	1.05 m
Stock No.	6150-12-198-6814	6150-12-168-9942
PU	1 pc(s)	1 pc(s)

Type	EL16 L1.55M 2KSG 10	EL16 L2.05M 2KSG 10
Part No.	416 915	416 920
Cable length (l1)	1.55 m	2.05 m
Stock No.	6150-12-168-2693	6150-12-198-6815
PU	1 pc(s)	1 pc(s)

Type	EL16 L2.55M 2KSG 10	EL16 L3.05M 2KSG 10
Part No.	416 925	416 930
Cable length (l1)	2.55 m	3.05 m
Stock No.	6150-12-198-6816	6150-12-198-1483
PU	1 pc(s)	1 pc(s)

Type	EL16 L7.05M 2KSG 10
Part No.	416 970
Cable length (l1)	7.05 m
Stock No.	6150-12-168-2692
PU	1 pc(s)

Packing in accordance with specifications of the VG standards (defence equipment standards) must be explicitly indicated when ordering.

Earthing Cables with Cable Lug / Pin Cable Lug

Made of highly flexible copper conductor, frost-resistant, UV-stabilised.
Packing in accordance with VG 96927-11.

Cable lug, 1x open and pin cable lug size 10



Type	EL10 L2.05M 1KSO 8.10 1SKS 10
Part No.	**410 720**
Cable cross section	10 mm²
Cable length (l1)	2.05 m
Cable lug open	M8 / M10
Pin cable lug	size 10 (w = 4.3)
Colour	black ●
Stock No.	6150-12-308-6979
PU	1 pc(s)

Cable lug, 1x open and pin cable lug size 16



Type	EL16 L1.55M 1KSO 8.10 1SKS 16
Part No.	**416 016**
Cable cross section	16 mm²
Cable length (l1)	1.55 m
Cable lug open	M8 / M10
Pin cable lug	size 16 (w = 5.8)
Colour	black ●
Stock No.	6150-12-178-9673
PU	1 pc(s)

Cable lug, 1x closed and pin cable lug size 10



Type	EL10 L0.65M 1KSG 8 1SKS 10
Part No.	**410 606**
Cable cross section	10 mm²
Cable length (l1)	0.65 m
Cable lug closed	M8
Pin cable lug	size 10 (w = 4.3)
Colour	black ●
Stock No.	6150-12-304-4604
PU	1 pc(s)

Packing in accordance with specifications of the VG standards (defence equipment standards) must be explicitly indicated when ordering.

Earthing Cable Lugs

For mounting on site with integrated strain relief (second half of clamping part).
Please observe the following parameters for mounting:

- Stripping approx. 15 mm
- Wire end ferrule acc. to DIN 46228
- Tightening torque of the locking nut screws ≥ 3 Nm

Open M5 / M6



Type	EKSO 5.6 AQ6 16 CUGALZN
Part No.	**444 006**
Cable cross section	6-16 mm²
Cable lug fitting	M5 / M6
Material	**Cu/gal Sn**
Stock No.	5940-12-156-9126
PU	100 pc(s)

Open M8 / M10



Type	EKSO 8.10 AQ6 16 CUGALZN
Part No.	**444 010**
Cable cross section	6-16 mm²
Cable lug fitting	M8 / M10
Material	**Cu/gal Sn**
Stock No.	5940-12-152-3867
PU	100 pc(s)

Closed M8



Type	EKSG 8 AQ6 16 CUGALZN
Part No.	**444 008**
Cable cross section	6-16 mm²
Cable lug fitting	M8
Material	**Cu/gal Sn**
Stock No.	5940-12-156-9128
PU	1 pc(s)

Closed M10



Type	EKSG 10 AQ6 16 CUGALZN
Part No.	**444 009**
Cable cross section	6-16 mm²
Cable lug fitting	M10
Material	**Cu/gal Sn**
Stock No.	5940-12-156-9127
PU	1 pc(s)

Packing in accordance with specifications of the VG standards (defence equipment standards) must be explicitly indicated when ordering.

Earthing Clamps

For connecting earthing conductors to pipes.

Small design



Type EK ...	4.45 AQ6 16 TGTZN
Part No.	**435 805**
Material of clamp body	**MCI/tZn**
Material of spindle	**St/gal Zn**
Clamping range pipe Ø	4-45 mm ($^3/_8$-1 $^1/_4$'')
Connection cross-section	6-16 mm²
Stock No.	5999-12-156-9129
PU	1 pc(s)

Large design



Type EK ...	12.60 AQ6 16 TGTZN
Part No.	**435 803**
Material of clamp body	**MCI/tZn**
Material of spindle	**St/gal Zn**
Clamping range pipe Ø	12-60 mm ($^1/_2$-2'')
Connection cross-section	6-16 mm²
Stock No.	5999-12-156-2656
PU	1 pc(s)

Packing in accordance with specifications of the VG standards (defence equipment standards) must be explicitly indicated when ordering.

Antenna earthing – telecommunication systems

Pipe clamp for lighning equipotential bonding of pipes (e.g. antenna poles) according to IEC/EN 62305-3.

With gradually adjustable tensioning strap, for connecting one or two conductors and suitable for through-wiring.

Antenna pipe clamps (complete)

Connection of:
1 conductor Rd Ø10 mm or
1-2 conductors Rd Ø6-8 mm **or**
4-50 mm² (solid / stranded).



Type	BRS 16.89 AK1X10 2X6.8 V2A	BRS 16.168 AK1X10 2X6.8 V2A
Part No.	**540 103**	**540 100**
Material	StSt	StSt
Clamping range pipe Ø	16-89 mm ($^3/_8$-3'')	16-168 mm ($^3/_8$-6'')
Screw	M8 x 20 mm	M8 x 20 mm
Material of screw	StSt	StSt
Dimensions of strap (l1 x w x d)	330 x 25 x 0.3 mm	570 x 25 x 0.3 mm
Standard	EN 62561-1	EN 62561-1
Stock No.	–	5975-12-120-7744
PU	10 pc(s)	10 pc(s)

Separate grip head

For combination with endless tensioning strap (Part No. 540 901).
Connection of:
1 conductor Rd Ø10 mm or
1-2 conductors Rd Ø6-8 mm **or**
4-50 mm² (solid / stranded).



Type	SPK 25 BRS AK1X10 2X6.8 V2A
Part No.	**540 110**
Material	StSt
Screw	M8 x 20 mm
Material of screw	StSt
Standard	EN 62561-1
PU	50 pc(s)

Endless tensioning strap

For cutting to length, e.g. with snips.



Type	SPB 25X0.3 L100M V2A
Part No.	**540 901**
Material	StSt
Dimensions of strap (w x d)	25 x 0.3 mm
PU	1 pc(s)

Earthing Busbars

With slot and anti-rotation protection, for fixing to the earthing pipe.

3 connections



Type ESS ...	3P M10X35 STTZN
Part No.	**465 801**
Material of busbar	**St/tZn**
Length	181 mm
Screw	M10 x 35 mm
Stock No.	5940-12-156-8385
PU	1 pc(s)

5 connections



Type ESS ...	5P M10X35 STTZN
Part No.	**466 192**
Material of busbar	**St/tZn**
Length	290 mm
Screw	M10 x 35 mm
Stock No.	5940-12-188-4931
PU	1 pc(s)

Packing in accordance with specifications of the VG standards (defence equipment standards) must be explicitly indicated when ordering.

Earthing Spikes

For earthing mobile objects such as vehicles, power generators, etc.



Type ES 50X50X3 ...	450 V2A	600 V2A
Part No.	**634 145**	**634 160**
Material of profile	**St/tZn**	**St/tZn**
Profile	50 x 50 x 3 mm	50 x 50 x 3 mm
Length (l1)	450 mm	600 mm
Screw	M8 x 40 mm	M8 x 40 mm
Nut	wing nut M8	wing nut M8
Stock No.	5975-12-382-6412	–
PU	1 pc(s)	1 pc(s)

Anchoring Pole

For guying rod sections and batten shears, e.g. when traversing telecommunication cables.



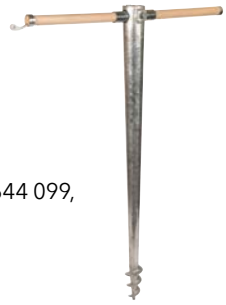
Type	AP L405 TGTZN
Part No.	**466 203**
Material of profile	**MCI/tZn**
Profile	25 x 25 x 3.6 mm
Length	405 mm
Design	hole Ø28 mm
Stock No.	4030-12-320-9037
PU	1 pc(s)

Earthing Pipe with Drilling Spiral

For earthing mobile objects such as vehicles, power generators, etc.
Detachable turning handle.

Consisting of:

- Turning handle (Part No. 462 058, military name VG 96953 T10 AB001, stock No. 5975-12-133-7084)
- Earthing pipe (Part No. 462 060, military name VG 96953 T10 AA001, stock No. 5975-12-133-7271)
- Clamp body with knurled screw (Part No. 644 099, military name VG 96953 T10 AC001, stock No. 5975-12-399-5493)



Type	ERO BSP ASSM10 1000 STTZN
Part No.	**644 000**
Material	**St/tZn**
Length	1000 mm
Screw	M10 x 35 mm
Stock No.	5975-12-120-0006
PU	1 pc(s)

Telecommunication Earth Bars

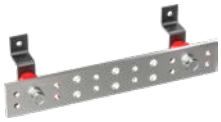
Telecommunication Earth Bars in Tinned and Copper Variants, the Earth Bars comply with EN / BS EN 50310 standards for Telecomm. bonding networks for building and other structures.

Copper



Type	TEB 50X6.35 CU	TMEB 100X6.35 CU
Part No.	**118 917**	**118 918**
Material	**Copper**	**Copper**
Dimensions W x T	50 x 6.35 mm	100 x 6.35 mm
Dimensions L x W1 x H	315 x 110 x 83 mm	508 x 160 x 83 mm
Tightening Torque	20 Nm	20 Nm
Recommended Fixings	Countersunk Wood Screws 1 ½" No. 12 or M8 and No 12 Wall Plugs (To be Purchased Separately)	Countersunk Wood Screws 1 ½" No. 12 or M8 and No 12 Wall Plugs (To be Purchased Separately)
Standards	Complies with EN / BS EN 50310	Complies with EN / BS EN 50310
PU	1 pc(s)	1 pc(s)

Tinned Copper



Type	TEB 50X6.35 SNCU	TMEB 100x6.35 SNCU
Part No.	**119 917**	**119 918**
Material	**Tinned Copper**	**Tinned Copper**
Dimensions W x T	50 x 6.35 mm	50 x 6.35 mm
Dimensions L x W1 x H	315 x 110 x 83 mm	508 x 160 x 83 mm
Tightening Torque	20 Nm	20 Nm
Recommended Fixings	Countersunk Wood Screws 1 ½" No. 12 or M8 and No 12 Wall Plugs (To be Purchased Separately)	Countersunk Wood Screws 1 ½" No. 12 or M8 and No 12 Wall Plugs (To be Purchased Separately)
Standards	Complies with EN / BS EN 50310	Complies with EN / BS EN 50310
PU	1 pc(s)	1 pc(s)



Earthing system for railways

Our DEHN railway earthing system has proven itself in traffic engineering as it has been specifically developed for earthing the reinforcement of concrete parts in the vicinity of high-voltage electrical installations. It is used for establishing equipotential bonding of concrete structures and conducting short-circuit currents if the contact wire breaks.
For this purpose, DEHN provides the user with a range of earthing bridges and earthing connectors, which, due to variable end end caps and connection elements, represent a comprehensive modular system with various possible combinations.
Our DEHN railway earthing systems are approved by DB Netz AG.

Stainless steel earthing bridges



The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. The stainless steel earthing bridge ensures this via a defined welding seam to the earthing conductor. This earthing bridge also has a technical approval from DB Netz AG and can be reliably used in planning.

General technical data:	
Material of connection element	StSt
Material No.	1.4301
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	12.6 kA
Thread	M16
Diameter of connection plate	50 mm
DB drawing No.	3 Ebs 15.03.19 - 37

Type D ...	BEB 0 - 63 / EBS 15-03-19	BEB 0 - 70 / EBS 15-03-19
Part No.	**419 000**	**419 001**
Total height	63 mm	70 mm
Installation height	55 mm	62 mm
PU	1 pc(s)	1 pc(s)

Type D ...	BEB 0 - 77 / EBS 15-03-19
Part No.	**419 002**
Total height	77 mm
Installation height	69 mm
PU	1 pc(s)

Note:
Depending on the order, the D BEB 0 earthing bridges can be manufactured up to an H dimension of 100 mm without losing their approval from DB Netz AG.

Stainless steel earthing bridges D BEB 16



The earthing bridges are designed for earthing, return circuits and equipotential bonding in railway line applications. The stainless steel earthing bridge ensures this via a defined welding seam to the earthing conductor. This earthing bridge also has the technical approval of DB Netz AG and can be used there without hesitation in planning.

Type D ...	BEB 16 - 105 / 3 EBS 15-03-19-38
Part No.	**419 160** NEW
Material of connection element	StSt
Material No.	1.4301
Angle material	**St**
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	12.6 kA
Thread	M16
Diameter of connection plate	40 mm
Angle dimensions (l x w x d)	50 x 50 x 5 mm
Total height	105 mm
DB drawing No.	3 Ebs 15.03.19 - 38
PU	8 pc(s)

Flat steel earthing bridges D BEB 1



The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. This version is installed flush with the surface and the flat steel is welded to the earthing reinforcement via a defined welding seam. This earthing bridge also has a technical approval from DB Netz AG and can therefore be reliably used in planning.

Type D ...	BEB 1 / EBS 15-03-19	BEB 1 - L100 / EBS 15-03-19
Part No.	**419 010**	**419 500**
Material of plate	StSt	StSt
Material No.	1.4301	1.4301
Material of socket	**St / Cu**	**St / Cu**
Material of flat steel	**S235**	**S235**
Short-circuit current	> 25 kA	> 25 kA
Test current	40 kA / 100 ms	40 kA / 100 ms
Standard	Ril 997.0205A01	Ril 997.0205A01
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	12.6 kA	12.6 kA
Thread	M16	M16
Diameter of connection plate	50 mm	50 mm
Dimensions of flat steel	400 x 40 x 5 mm	100 x 40 x 5 mm
Total height	58 mm	58 mm
DB drawing No.	3 Ebs 15.03.19 - 30	3 Ebs 15.03.19 - 30
PU	1 pc(s)	1 pc(s)

Flat steel earthing bridges D BEB 1-L



The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. This version is installed flush with the surface and the flat steel is welded to the earthing reinforcement via a defined welding seam. This earthing bridge also has a technical approval from DB Netz AG and can therefore be reliably used in planning.

Type D ...	BEB 1-L / EBS 15-03-19
Part No.	**419 011**
Material of plate	StSt
Material No.	1.4301
Material of socket	**St / Cu**
Material of flat steel	**S235**
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	12.6 kA
Thread	M16
Diameter of connection plate	50 mm
Dimensions of flat steel	402 x 40 x 5 mm
Total height	58 mm
Installation height	410 mm
DB drawing No.	3 Ebs 15.03.19 - 30
PU	1 pc(s)

Flat steel earthing bridges D BEB 1-NR



The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. This version is installed flush with the surface and the flat steel is welded to the earthing reinforcement via a defined welding seam. This earthing bridge also has a technical approval from DB Netz AG and can therefore be reliably used in planning.

Type D ...	BEB 1-NR / EBS 15-03-19
Part No.	**419 012**
Material of connection element	StSt
Material No.	1.4301
Material of flat steel	**S235**
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	12.6 kA
Thread	M16
Diameter of connection plate	50 mm
Dimensions of flat steel	400 x 50 x 5 mm
Total height	63 mm
DB drawing No.	3 Ebs 15.03.19 - 36
PU	1 pc(s)

Reinforcing steel earthing bridges D BEB 2



The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. This version is installed flush with the surface and welded to the earthing reinforcement with the angled reinforcing steel, particularly in installation situations where space is critical. This earthing bridge also has a technical approval from DB Netz AG and can therefore be reliably used in planning.

Type D ...	BEB 2 / EBS 15-03-19
Part No.	**419 020**
Material of plate	StSt
Material No.	1.4301
Material of socket	**St / Cu**
Material of shaft	**reinforcing steel B500B**
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	12.6 kA
Thread	M16
Diameter of connection plate	50 mm
Diameter of reinforcing steel	16 mm
Installation height	160 mm
Length	400 mm
DB drawing No.	3 Ebs 15.03.19 - 31
PU	1 pc(s)

Reinforcing steel earthing bridges D BEB 3



The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. This version is installed flush with the surface and welded to the earthing reinforcement with the straight reinforcing steel. This earthing bridge also has a technical approval from DB Netz AG and can therefore be reliably used in planning.

Type D ...	BEB 3 / EBS 15-03-19
Part No.	**419 030**
Material of plate	StSt
Material No.	1.4301
Material of socket	**St / Cu**
Material of shaft	**reinforcing steel B500B**
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	12.6 kA
Thread	M16
Diameter of connection plate	50 mm
Diameter of reinforcing steel	16 mm
Length	400 mm
DB drawing No.	3 Ebs 15.03.19 - 31
PU	1 pc(s)

Copper cable earthing bridges D BEB 4 / 5 *)



The earthing bridges are designed for earthing, return circuits and equipotential bonding in railway line applications. This version is installed flush with the surface, and with the copper-plated steel lug pressed on to the copper cable welded to the earthing reinforcement. The flexibility of the cable simplifies installation in the reinforcement for the user. The special FLEX versions are especially well suited for installation situations where space is critical – ultra flexible fine stranded copper cables are used here. These earthing bridges also have the technical approval of DB Netz AG and can be used there without hesitation in planning.

General technical data:	
Material of plate	StSt
Material No.	1.4301
Material of socket	**St / Cu**
Material of lug	**St / Cu**
Material of cable	**Cu**
Standard	Ril 997.0205A01
Thread	M16
Diameter of connection plate	50 mm
Dimensions of lug	80 x 30 mm
DB drawing No.	3 Ebs 15.03.19 - 32

Type D ...	**BEB 4 / EBS 15-03-19**	**BEB 4-FLEX / EBS 15-03-19**
Part No.	**419 040**	**419 041**
Short-circuit current	≤ 25 kA	≤ 25 kA
Test current	25 kA / 100 ms	25 kA / 100 ms
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	7.9 kA	7.9 kA
Cable	NYY-O	H07V-K
Cable cross-section	70 mm²	70 mm²
Cable diameter	17 mm	17 mm
Length	500 mm	500 mm
PU	1 pc(s)	1 pc(s)

Type D ...	**BEB 5 / EBS 15-03-19**	**BEB 5-FLEX / EBS 15-03-19**
Part No.	**419 050**	**419 051**
Short-circuit current	> 25 kA	> 25 kA
Test current	40 kA / 100 ms	40 kA / 100 ms
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	12.6 kA	12.6 kA
Cable	NYY-O	H07V-K
Cable cross-section	95 mm²	95 mm²
Cable diameter	19 mm	19 mm
Length	500 mm	500 mm
PU	1 pc(s)	1 pc(s)

Type D ...	**BEB 5 - L700 / EBS 15-03-19**	**BEB 5 - L1000 / EBS 15-03-19**
Part No.	**419 501**	**419 502**
Short-circuit current	> 25 kA	> 25 kA
Test current	40 kA / 100 ms	40 kA / 100 ms
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	12.6 kA	12.6 kA
Cable	NYY-O	NYY-O
Cable cross-section	95 mm²	95 mm²
Cable diameter	19 mm	19 mm
Length	700 mm	1000 mm
PU	1 pc(s)	1 pc(s)

Type D ...	**BEB 5 - L1500 / EBS 15-03-19**	**BEB 5 - L2000 / EBS 15-03-19**
Part No.	**419 503**	**419 504**
Short-circuit current	> 25 kA	> 25 kA
Test current	40 kA / 100 ms	40 kA / 100 ms
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	12.6 kA	12.6 kA
Cable	NYY-O	NYY-O
Cable cross-section	95 mm²	95 mm²
Cable diameter	19 mm	19 mm
Length	1500 mm	2000 mm
PU	1 pc(s)	1 pc(s)

Copper cable earthing bridges D BEB 6 / 7 *)



The earthing bridges are designed for earthing, return circuits and equipotential bonding in railway line applications. This version is used as an earthing bushing of components, with it being installed flush with the surface on both sides. The flexibility of the cable simplifies installation in the reinforcement for the user. The special FLEX versions are especially well suited for installation situations where space is critical – ultra flexible fine stranded copper cables are used here. These earthing bridges also have the technical approval of DB Netz AG and can be used there without hesitation in planning.

General technical data:	
Material of plate	StSt
Material No.	1.4301
Material of socket	**St / Cu**
Material of cable	**Cu**
Standard	Ril 997.0205A01
Thread	M16
Diameter of connection plate	50 mm
Length	500 mm
DB drawing No.	3 Ebs 15.03.19 - 33

Type D ...	**BEB 6 / EBS 15-03-19**	**BEB 6-FLEX / EBS 15-03-19**
Part No.	**419 060**	**419 061**
Short-circuit current	≤ 25 kA	≤ 25 kA
Test current	25 kA / 100 ms	25 kA / 100 ms
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	7.9 kA	7.9 kA
Cable	NYY-O	H07V-K
Cable cross-section	70 mm²	70 mm²
Cable diameter	17 mm	17 mm
PU	1 pc(s)	1 pc(s)

Type D ...	**BEB 7 / EBS 15-03-19**	**BEB 7-FLEX / EBS 15-03-19**
Part No.	**419 070**	**419 071**
Short-circuit current	> 25 kA	> 25 kA
Test current	40 kA / 100 ms	40 kA / 100 ms
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	12.6 kA	12.6 kA
Cable	NYY-O	H07V-K
Cable cross-section	95 mm²	95 mm²
Cable diameter	19 mm	19 mm
PU	1 pc(s)	1 pc(s)

Reinforcing steel earthing bridges D BEB 8



The earthing bridges are designed for earthing, current return circuits and equipotential bonding in railway line applications. This version is installed flush with the surface and the reinforcing steel is welded to the earthing reinforcement. The sockets mounted on both ends allow effective and economical component feed-through. This earthing bridge also has a technical approval from DB Netz AG and can therefore be reliably used in planning.

Type D ...	**BEB 8 / EBS 15-03-19**
Part No.	**419 080**
Material of plate	StSt
Material No.	1.4301
Material of socket	**St / Cu**
Material of shaft	**reinforcing steel B500B**
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	12.6 kA
Thread	M16
Diameter of connection plate	50 mm
Diameter of reinforcing steel	16 mm
Length	500 mm
DB drawing No.	3 Ebs 15.03.19 - 33
PU	1 pc(s)

Copper cable earthing bridges D BEB 9 / 10 *)



The earthing bridges are designed for earthing, return circuits and equipotential bonding in railway line applications. This version establishes a non-visible connection within the concrete due to the copper-plated steel lugs that are pressed onto the copper cable being welded to the earthing reinforcement. The flexibility of the cable simplifies installation in the reinforcement for the user. The special FLEX versions are especially well suited for installation situations where space is critical – ultra flexible fine stranded copper cables are used here. These earthing bridges also have the technical approval of DB Netz AG and can be used there without hesitation in planning.

General technical data:	
Material of lug	**St / Cu**
Material of cable	**Cu**
Standard	Ril 997.0205A01
Dimensions of lug	80 x 30 mm
DB drawing No.	3 Ebs 15.03.19 - 33

Type D ...	**BEB 9 / EBS 15-03-19**	**BEB 9-FLEX / EBS 15-03-19**
Part No.	**419 090**	**419 091**
Short-circuit current	≤ 25 kA	≤ 25 kA
Test current	25 kA / 100 ms	25 kA / 100 ms
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	7.9 kA	7.9 kA
Cable	NYY-O	H07V-K
Cable cross-section	70 mm²	70 mm²
Cable diameter	17 mm	17 mm
Length	500 mm	500 mm
PU	1 pc(s)	1 pc(s)

Type D ...	**BEB 10 / EBS 15-03-19**	**BEB 10-FLEX / EBS 15-03-19**
Part No.	**419 100**	**419 101**
Short-circuit current	> 25 kA	> 25 kA
Test current	40 kA / 100 ms	40 kA / 100 ms
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	12.6 kA	12.6 kA
Cable	NYY-O	H07V-K
Cable cross-section	95 mm²	95 mm²
Cable diameter	19 mm	19 mm
Length	500 mm	500 mm
PU	1 pc(s)	1 pc(s)

Type D ...	**BEB 10 - L800 / EBS 15-03-19**
Part No.	**419 505**
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	12.6 kA
Cable	NYY-O
Cable cross-section	95 mm²
Cable diameter	19 mm
Length	800 mm
PU	1 pc(s)

*) Special lengths are available on request:
up to 500 mm total length in steps of 50 mm and
from 500 mm total length in steps of 100 mm.

Earthing bridge for earthing large pipes D BEB 11 *)



The earthing bridges are designed for earthing, return circuits and equipotential bonding in railway line applications. The version for earthing large pipes is intended for use with pile and large pipe foundations. The product consists of a copper cable with a pressed-on sleeve and stainless steel connection plate with integrated boreholes for the formwork fixing at one end, and a cable lug at the opposite end. The cable lug is used to establish a short-circuit-resistant connection to the pile or large pipe foundation. The flexibility of the cable simplifies installation in the reinforcement for the user. This earthing bridge also has the technical approval of DB Netz AG and can be used there without hesitation in planning.

Type D ...	**BEB 11 / EBS 15-03-27**	**BEB 11 - L1000 / EBS 15-03-27**
Part No.	**419 110**	**419 506**
Material of plate	**StSt**	**StSt**
Material No.	1.4301	1.4301
Material of socket	**St / Cu**	**St / Cu**
Material of cable lug	**Cu/gal Sn**	**Cu/gal Sn**
Material of cable	**Cu**	**Cu**
Short-circuit current	≤ 25 kA	≤ 25 kA
Test current	25 kA / 100 ms	25 kA / 100 ms
Standard	Ril 997.0205A01	Ril 997.0205A01
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	7.9 kA	7.9 kA
Thread	M16	M16
Diameter of connection plate	50 mm	50 mm
Cable	NYY-O	NYY-O
Cable cross-section	70 mm²	70 mm²
Cable diameter	17 mm	17 mm
Borehole cable lug	13 mm	13 mm
Length	500 mm	1000 mm
DB drawing No.	4 Ebs 15.03.27 - 2	4 Ebs 15.03.27 - 2
PU	1 pc(s)	1 pc(s)

Steel cable earthing connector D BEB 26 *)



The earthing connectors are designed for earthing, return circuits and equipotential bonding in railway line applications. The halogen-free (sheathed) version D BEB 26 – for the external connection of earthing points or other parts to be earthed – consists of a steel cable as an earthing conductor and is thus a preventive anti-theft measure. This earthing connector also has the technical approval of DB Netz AG and can be used there without hesitation in planning.

Type D ...	**BEB 26 / EBS 15-03-17**
Part No.	**419 260**
Material of cable lug	**Cu/gal Sn**
Material of rope	**St**
Short-circuit current	≤ 25 kA
Test current	25 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	7.9 kA
Rope	**1-12-12 B 350 sZ PE**
Rope cross-section	≥ 95 mm²
Design	halogen-free
Cable diameter	17 mm
Borehole cable lug	17 mm
Length	500 mm
DB drawing No.	3 Ebs 15.03.17 - 11
PU	1 pc(s)

CuStAl cable earthing connection D BEB 29 *)



The earthing connectors are designed for earthing, return circuits and equipotential bonding in railway line applications. The halogen-free version D BEB 29 / the halogen-free and flame-retardant version D BEB 29-NF – for the external connection of earth connection points and other connection elements – is designed with a cable lug version for M16 connections. These earthing connectors consist of a copper-steel-aluminium cable, thus representing a preventive anti-theft measure. These earthing connectors also have the technical approval of DB Netz AG and can be used there without hesitation in planning. With the halogen-free and flame-retardant version, use in tunnels is possible as per EU regulations.

General technical data:	
Material of cable lug	**Cu/gal Sn**
Material of cable	**CuStAl**
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	12.6 kA
Cable cross-section	≥ 70 mm²
Cable diameter	17 mm
DB drawing No.	4 Ebs 15.03.17 - 6 (Bayka)

Type D ...	**BEB 29 / EBS 15-03-17**	**BEB 29-NF / EBS 15-03-17**
Part No.	**419 290**	**419 291**
Cable	**(N)2X RF CuStAl**	**B2ca RF CuStAl**
Design	halogen-free	halogen-free and flame-retardant
Borehole cable lug	17 mm	17 mm
Design cable lug	–	–
Length	500 mm	500 mm
PU	1 pc(s)	1 pc(s)

Type D ...	**BEB 29 - L350 / EBS 15-03-17**	**BEB 29 - L800 / EBS 15-03-17**
Part No.	**419 507**	**419 508**
Cable	**(N)2X RF CuStAl**	**(N)2X RF CuStAl**
Design	halogen-free	halogen-free
Borehole cable lug	17 mm	17 mm
Design cable lug	–	–
Length	350 mm	800 mm
PU	1 pc(s)	1 pc(s)

Type D ...	**BEB 29 M12 M16 / EBS 15-03-17**	**BEB 29-NF M12 M16 / EBS 15-03-17**
Part No.	**419 511**	**419 512**
Cable	**(N)2X RF CuStAl**	**B2ca RF CuStAl**
Design	halogen-free	halogen-free and flame-retardant
Borehole cable lug	13 mm for M12 and 17 mm for M16	13 mm for M12 and 17 mm for M16
Design cable lug	–	–
Length	500 mm	500 mm
PU	1 pc(s)	1 pc(s)

Type D ...	**BEB 29 R / EBS 15-03-17**	**BEB 29 L / EBS 15-03-17**
Part No.	**419 513**	**419 514**
Cable	**(N)2X RF CuStAl**	**(N)2X RF CuStAl**
Design	halogen-free	halogen-free
Borehole cable lug	17 mm	17 mm
Design cable lug	rotated 90° right	rotated 90° left
Length	500 mm	500 mm
PU	1 pc(s)	1 pc(s)

Earthing connector for earthing large pipes D BEB 40 *)



The earthing connectors are designed for earthing, return circuits and equipotential bonding in railway line applications. The version for earthing large pipes is designed for use with pile and large pipe foundations. The product consists of a steel cable with a copper-plated steel lug at one end and a cable lug at the other end. A heat-shrinkable sleeve at the welding lug end prevents water from penetrating the steel cable. The steel cable is therefore a preventative anti-theft measure. This earthing connector also has the technical approval of DB Netz AG and can be used there without hesitation in planning.

Type D ...	**BEB 40 / EBS 15-03-25**
Part No.	**419 400**
Material of lug	**St / Cu**
Material of cable lug	**Cu/gal Sn**
Material of rope	**St**
Short-circuit current	≤ 25 kA
Test current	25 kA / 100 ms
Standard	Ril 997.0205A01
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300°C)	7.9 kA
Rope cross-section	95 mm²
Cable diameter	17 mm
Dimensions of lug	80 x 30 mm
Borehole cable lug	17 mm
Length	500 mm
DB drawing No.	4 Ebs 15.03.25 - 4
PU	1 pc(s)

*) Special lengths are available on request:
up to 500 mm total length in steps of 50 mm and
from 500 mm total length in steps of 100 mm.

Adhesive pad

The adhesive pad is used to fix railway earthing products to the formwork by means of an adhesive connection. The adhesive pad can be stuck to the StSt connection plate of D BEB 0 and is then connected to the formwork itself.



Type D ...	KLP D50 BEB
Part No.	**419 900**
Diameter	50 mm
PU	1 pc(s)

Earthing sticker

The earthing sticker is a spare part for marking installed railway earthing products. It is simply stuck to the StSt connection plate. This kind of marking can be used for earthing bridges D BEB 1 to 8 as well as for the D BEB 11 version for earthing large pipes if the sticker applied in the factory has fallen off or is damaged.



Type D ...	EAK D50 BEB
Part No.	**419 901**
Diameter	50 mm
PU	1 pc(s)

Hexagon screw



Type D ...	SKS M16X30 V4A
Part No.	**419 902**
Material	StSt (V4A)
Thread	M16 x 30 mm
PU	1 pc(s)

Hexagon nut



Type D ...	SKM M16 V4A
Part No.	**419 903**
Material	StSt (V4A)
Thread	M16
PU	1 pc(s)

Washer



Type D ...	SCH A17 V4A
Part No.	**419 904**
Material	StSt (V4A)
Outer diameter	30 mm
Inner diameter	17 mm
PU	1 pc(s)

Short-circuit wire on fences/gabions with accessories

Objects in the area where the overhead contact line breaks that do not have sufficient short-circuit current carrying capacity put people and installations at risk. These conductive bodies, e.g., metal boundaries or fences, must be equipped with an additional, sufficiently dimensioned conductors. This is done using a short-circuit wire. It is installed on fences or boundaries and triggers a defined short-circuit in the event of a broken overhead contact line. Short-circuit wires are also used in tunnel building and for noise barriers. The necessary installation accessories, like the press connector and conductor holder, round off the full package.

Short-circuit wire

Short-circuit wire for use with short-circuit currents less than 15 kA with a diameter of 10 mm and for use with short-circuit currents greater than 15 kA with a diameter of 16 mm. The short-circuit wires meet the requirements of Ril 997.0205.



General technical data:		
Material		**HDG steel**
DB drawing No.		3 EBS 15.03.42

Type	RD 10 STTZN L2950 / 3 EBS 15.03.42	FS 16 2000 STTZN
Part No.	**419 752**	**483 200**
Diameter	10 mm	16 mm
Length (l1)	2950 mm	2000 mm
Standard	Ril 997.0204/0205	Ril 997.0204/0205, DIN EN 62561-2
PU	10 pc(s)	1 pc(s)

Type	RD 16 STTZN L5950 / 3 EBS 15.03.42
Part No.	**419 753**
Diameter	16 mm
Length (l1)	5950 mm
Standard	Ril 997.0204/0205
PU	1 pc(s)

Conductor holder

Conductor holder for fixing short-circuit wires to stone gabions and steel grid fences.



Type	PH 6.22 FRM10X40 FR STTZN/3 EBS 15.03.44	LH DQ 16 KBG 4.8 W STTZN/3 EBS 15.03.47
Part No.	**419 751**	**419 750**
Clamp material	**HDG steel**	**HDG steel**
Clamp Rd / Rd clamping range	6-22 mm	–
Bar clamping range	–	4-8 mm
Clamping range Rd	–	10-16 mm
Screw	M10 x 40	M8 x 25 mm, M8 x 35 mm
Material of screw / nut	–	StSt
Screw / spring washer material	StSt	–
Material of nut / washer	StSt	–
Material thickness	–	3 mm
Design with	–	Spring washer and spherical washer
DB drawing No.	3 EBS 15.03.44	3 EBS 15.03.47
Standard	Ril 997.0204/0205	Ril 997.0204/0205
PU	50 pc(s)	50 pc(s)

Press connector

Aluminium press connector for connecting railway earthing conductors as per 4 EBS 15.03.43.



General technical data:	
Material	Al
Press insert	See EBS drawing
Pressing force as per	3 Ebgw 05.30
DB drawing No.	4 EBS 15.03.43
Standard	Ril 997.0204/0205

Type	PRV RD10 RD10 L133 AL / 4 EBS 15.03.43	PRV RD16 RD16 L143 AL / 4 EBS 15.03.43
Part No.	**419 760**	**419 761**
Short-circuit wire / short-circuit wire connection	Ø10 mm / Ø10 mm	Ø16 mm / Ø16 mm
Earthing cable / short-circuit wire connection	–	–
Outer diameter	25 mm	32 mm
Inner diameter	13 mm	17 mm
Length (l1)	133 mm	143 mm
DB no.	987845	1449223
PU	3 pc(s)	3 pc(s)

Type	PRV RD10 110 L133 AL / 4 EBS 15.03.43	PRV RD16 110 L143 AL / 4 EBS 15.03.43
Part No.	**419 762**	**419 763**
Short-circuit wire / short-circuit wire connection	–	–
Earthing cable / short-circuit wire connection	100/110 mm² / Ø10 mm	100/110 mm² / Ø16 mm
Outer diameter	25 mm	32 mm
Inner diameter	11/13 mm	15/17 mm
Length (l1)	133 mm	143 mm
DB no.	987879	1449206
PU	3 pc(s)	3 pc(s)

Railway earthing cable

Aluminium railway earthing cable as per EBS 15.03.17-3 with visual identification using blue stripes.



Type	EK 110 L25M AL / 3 EBS 15.03.17-3	EK 110 L50M AL / 3 EBS 15.03.17-3
Part No.	**419 758**	**419 759**
Material of conductor	AlMg(St)	AlMg(St)
Sheath material	PVC	PVC
Colour of conductor	black ● (with blue ● longitudinal stripes)	black ● (with blue ● longitudinal stripes)
Cross-section of core (stranded)	110 mm²	110 mm²
Cable length (coil)	25 m	50 m
Coating characteristics	UV-stabilised and weather resistant	UV-stabilised and weather resistant
DB no.	965121	965121
DB drawing No.	3 EBS 15.03.17-3	3 EBS 15.03.17-3
Standard	Ril 997.0204/0205	Ril 997.0204/0205
PU	1 pc(s)	1 pc(s)

Bell mouth cable lugs

Aluminium bell mouth cable lug as per 3 EBS 15.03.22-1, available in versions M10 / M12 for railway earthing cables.



Type	GKS 110 12 AL / 3 EBS 15.03.22-1	GKS 110 16 AL / 3 EBS 15.03.22-1
Part No.	**419 765**	**419 766**
Material	Al	Al
Outer diameter	25 mm	25 mm
Inner diameter	22 mm	22 mm
Length (l1)	119 mm	119 mm
Material of conductor	AlMgSt	AlMgSt
Sheath material	(N)A(St)YY-O	(N)A(St)YY-O
Conductor cross-section	110 mm²	110 mm²
Cable lug hole	13 mm (M12)	17 mm (M16)
Press insert	See EBS drawing	See EBS drawing
Pressing force as per	3 Ebgw 05.30	3 Ebgw 05.30
DB no.	1219081	1219082
DB drawing No.	3 EBS 15.03.22-1	3 EBS 15.03.22-1
Standard	Ril 997.0204/0205	Ril 997.0204/0205
PU	3 pc(s)	3 pc(s)

Bare steel strip

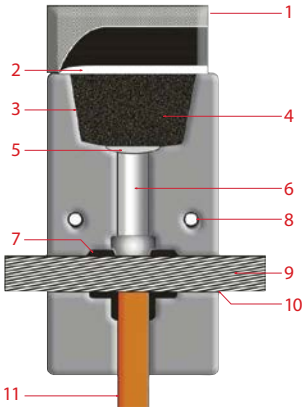


Type BA ...	50X4 ST R30M
Part No.	**810 503** NEW
Width	50 mm
Thickness	4 mm
Cross-section	200 mm²
Material	St/bare (S235 JR)
Short-circuit current	> 25 kA
Test current	40 kA / 100 ms
Standard	DIN EN 62561-2 (VDE 0185-561-2)
Guideline	Ril 997.0205A01
Short-circuit current (AC 50 Hz / DC) (1 s; ≤ 300 °C)	14 kA
Coil weight	approx. 50 kg
Length tolerance	+/- 5%
PU	30 m



The Exothermic Welding Process

The exothermic welding process, also known as thermite welding and alumina-thermic welding is a simple, self-contained method of forming high quality electrical connections of various metals such as copper to copper, copper to steel and steel to steel.
Connections are made inside a semi-permanent graphite mold, using the high temperature reaction of powdered copper oxide and aluminum.
The process is simple as it is effective. The method employs an exothermic reaction to create heat, usually triggered by a flint/spark igniter, which ignites and then melts the copper welding powder. The molten copper welding powder becomes the welding material, covering the metals to be connected. The metals themselves melt under the heat of the welding material, and then set as a full molecular bond with the copper welding material. The melting or fusing temperature rating of the joint is up to 2.000 °C.



1. Mould Cover
2. Starting Powder
3. Mould Cup
4. Weldmetal Powder
5. Steel Retaining Disc
6. Tap Hole
7. Weld Chamber
8. Locating Pin
9. Cable (conductor)
10. Earth Rod
11. Conductor Area

This method does not need an external source of power or heat to operate. The connections will not loosen over time or deteriorate with age. The connection's current carrying capability is similar to that of a conductor. In other words, there is no increase in resistance in an exothermically welded connection as there is in most pressure connections. In addition, this is a low labor cost procedure with no special skills requirement.
The molds are designed to complete 50-60 connections, depending on the care given to the mold during usage, transport and storage.

Main Components

The exothermic welding process is carried out by using Graphite Molds, Welding Powders, Handle Clamps and various safety and ignition tools.

Molds

A graphite mold is used for exothermic welding connections. The mold controls the direction and speed of the molten weld metal flow and the formation of the weld. The graphite used is a high temperature type that lasts for an average of 50 or more welding connections under normal usage.



Weldmetals

Weldmetals consists of copper oxide, aluminum and flux in powder form. The powders are packed into plastic containers and the quantity is pre-determined by the factory for specific connections. The weldmetal is packed under the white cap of the container and the ignition powder is packed under the red cap.

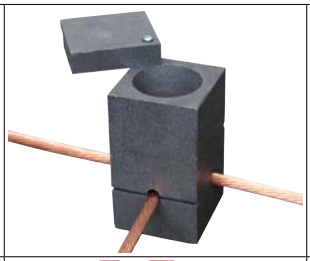
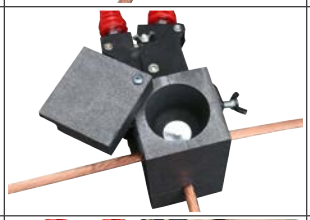


Handle clamps & Tools

Handle clamps are used to fix the mold during welding process. As the mold gets very hot during the welding process, the securing clamp and screws secure the mold to the handle clamp. special tools kit are in general used to ignite the powder, clean the mold after each weld in addition to personal safety gloves



Welding Process in 4 steps

1.		**Step 1:** Clean the conductors to be welded. Place the cables into position in the mold.
2.		**Step 2:** Close the handle clamp to lock the mold. Place the disk into position in the mold.
3.		**Step 3:** Place the weld metal into the mold. Sprinkle the starting powder over the weld metal and on the lip of the mold.
4.		**Step 4:** Close the cover and ignite using flint ignitor. Open the mold after the metal solidifies. Remove the slag from the mold before making the next connection.

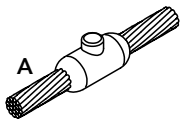
DEHN provide molds to suit all connections, some of which are displayed in this section of our catalogue. For other specifications, please contact your local partner.

Exothermic moulds

The DEHN Graphite Mould is used for welding connections. The mould controls the direction and speed of the molten weld metal flow and the formation of the weld. The graphite used is a high temperature type that lasts for an average of 50 or more welding connection under normal usage.
Mounted on the side of the mould is the name plate indicating the size of the conductors, type of connection and the size of the weld metal to be used.

Note:
1. No alteration whatsoever may be done to the mould.
2. Mould must be absolutely dry used.
3. Water or moisture are dangerous in molten metal environment.

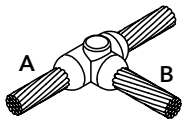
Cable to cable "Straight" joint



General technical data:	
Material	**Carbon graphite**
Temperature withstand	**2000 °C**
Price key	D

Type	MCCS050	MCCS070	MCCS120
Part No.	**148 210**	**148 211**	**148 212**
Size	50 mm² (A)	70 mm² (A)	120 mm² (A)
PU	1 pc(s)	1 pc(s)	1 pc(s)

Cable to cable "T" joint



General technical data:	
Material	**Carbon graphite**
Temperature withstand	**2000 °C**
Price key	D

Type	MCCT025/025	MCCT050/016
Part No.	**148 140**	**148 141**
Size	25 mm² (A) to 25 mm² (B)	50 mm² (A) to 16 mm² (B)
PU	1 pc(s)	1 pc(s)

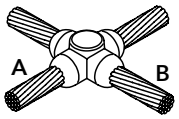
Type	MCCT050/035	MCCT050/050
Part No.	**148 142**	**148 143**
Size	50 mm² (A) to 35 mm² (B)	50 mm² (A) to 50 mm² (B)
PU	1 pc(s)	1 pc(s)

Type	MCCT070/050	MCCT070/070
Part No.	**148 144**	**148 145**
Size	70 mm² (A) to 50 mm² (B)	70 mm² (A) to 70 mm² (B)
PU	1 pc(s)	1 pc(s)

Type	MCCT095/070	MCCT120/070
Part No.	**148 146**	**148 147**
Size	95 mm² (A) to 70 mm² (B)	120 mm² (A) to 70 mm² (B)
PU	1 pc(s)	1 pc(s)

Type	MCCT120/120
Part No.	**148 148**
Size	120 mm² (A) to 120 mm² (B)
PU	1 pc(s)

Cable to cable "Cross" joint



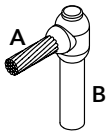
General technical data:	
Material	**Carbon graphite**
Temperature withstand	**2000 °C**
Price key	D

Type	MCCX050/050	MCCX070/050
Part No.	**148 150**	**148 151**
Size	50 mm² (A) to 50 mm² (B)	70 mm² (A) to 50 mm² (B)
PU	1 pc(s)	1 pc(s)

Type	MCCX120/050	MCCX120/070
Part No.	**148 152**	**148 153**
Size	120 mm² (A) to 50 mm² (B)	120 mm² (A) to 70 mm² (B)
PU	1 pc(s)	1 pc(s)

Type	MCCX120/120
Part No.	**148 154**
Size	120 mm² (A) to 120 mm² (B)
PU	1 pc(s)

Cable to earth rod "L" joint



General technical data:	
Material	**Carbon graphite**
Temperature withstand	**2000 °C**
Price key	D

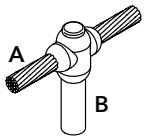
Type	MERL017.2/016	MERL017.2/035
Part No.	**148 120**	**148 121**
Size	16 mm² (A) to 3/4" rod (B)	35 mm² (A) to 3/4" rod (B)
PU	1 pc(s)	1 pc(s)

Type	MERL017.2/070	MERL017.2/120
Part No.	**148 122**	**148 123**
Size	70 mm² (A) to 3/4" rod (B)	120 mm² (A) to 3/4" rod (B)
PU	1 pc(s)	1 pc(s)

Type	MERL014.2/070
Part No.	**148 124**
Size	70 mm² (A) to 5/8" rod (B)
PU	1 pc(s)

Suitable copper-bonded rod connections - for connections to solid copper and stainless steel rods, please enquire with our sales office.
Thread of copperbonded rod must be removed prior to welding.

Cable to earth rod "T" joint



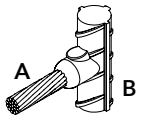
General technical data:	
Material	**Carbon graphite**
Temperature withstand	**2000 °C**
Price key	D

Type	MERT017.2/050	MERT017.2/070
Part No.	**148 130**	**148 131**
Size	50 mm² (A) to 3/4" rod (B)	70 mm² (A) to 3/4" rod (B)
PU	1 pc(s)	1 pc(s)

Type	MERT014.2/070
Part No.	**148 132**
Size	70 mm² (A) to 5/8" rod (B)
PU	1 pc(s)

Suitable copper-bonded rod connections - for connections to solid copper and stainless steel rods, please enquire with our sales office.
Thread of copperbonded rod must be removed prior to welding.

Cable to reinforcement "T" joint



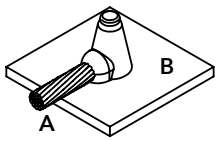
General technical data:	
Material	**Carbon graphite**
Temperature withstand	**2000 °C**
Price key	D

Type	MCRV/35	MCRV/50
Part No.	**148 110**	**148 111**
Size	35 mm² (A) to 10-40 mm (B)	50 mm² (A) to 10-40 mm (B)
PU	1 pc(s)	1 pc(s)

Type	MCRV/70	MCRV/95
Part No.	**148 112**	**148 113**
Size	70 mm² (A) to 10-40 mm (B)	95 mm² (A) to 10-40 mm (B)
PU	1 pc(s)	1 pc(s)

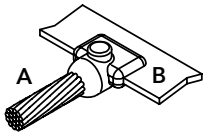
Type	MCRV/120
Part No.	**148 114**
Size	120 mm² (A) to 10-40 mm (B)
PU	1 pc(s)

Cable to steel surface joint



Type	MCS1H050	MCS1H070
Part No.	**148 100**	**148 101**
Size	50 mm² (A) to steel (B)	70 mm² (A) to steel (B)
Material	**Carbon graphite**	**Carbon graphite**
Temperature withstand	**2000 °C**	**2000 °C**
Price key	D	D
PU	1 pc(s)	1 pc(s)

Cable to bar "T" joint

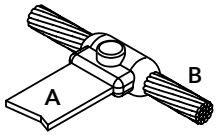


General technical data:	
Material	**Carbon graphite**
Temperature withstand	**2000 °C**
Price key	D

Type	MBCT070/025X3	MBCT240/050X6
Part No.	**148 200**	**148 201**
Size	70 mm² (A) to 25 x 3 mm (B)	240 mm² (A) to 50 x 6 mm (B)
PU	1 pc(s)	1 pc(s)

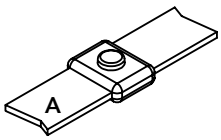
Type	MBCT300/050X6
Part No.	**148 202**
Size	300 mm² (A) to 50 x 6 mm (B)
PU	1 pc(s)

Bar to cable "T" joint



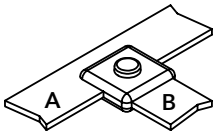
Type	MCBT050/025X3	MCBT070/025X3
Part No.	**148 160**	**148 161**
Size	25 x 3 mm (A) to 50 mm² (B)	25 x 3 mm (A) to 70 mm² (B)
Material	**Carbon graphite**	**Carbon graphite**
Temperature withstand	**2000 °C**	**2000 °C**
Price key	D	D
PU	1 pc(s)	1 pc(s)

Bar to bar "Straight" joint



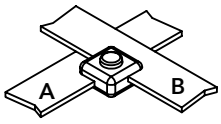
Type	MB3B25X3	MB3B50X6
Part No.	**148 180**	**148 181**
Size	25 x 3 mm (A)	50 x 6 mm (A)
Material	**Carbon graphite**	**Carbon graphite**
Temperature withstand	**2000 °C**	**2000 °C**
Price key	D	E
PU	1 pc(s)	1 pc(s)

Bar to bar "T" joint



Type	MB5B25X3/25X3	MB5B50X6/50X6
Part No.	**148 190**	**148 191**
Size	25 x 3 mm (A) to 25 x 3 mm (B)	50 x 6 mm (A) to 50 x 6 mm (B)
Material	**Carbon graphite**	**Carbon graphite**
Temperature withstand	**2000 °C**	**2000 °C**
Price key	D	E
PU	1 pc(s)	1 pc(s)

Bar to bar "Cross" joint



Type	MB4B25X3/25X3	MB4B50X6/50X6
Part No.	**148 170**	**148 171**
Size	25 x 3 mm (A) to 25 x 3 mm (B)	50 x 6 mm (A) to 50 x 6 mm (B)
Material	**Carbon graphite**	**Carbon graphite**
Temperature withstand	**2000 °C**	**2000 °C**
Price key	D	E
PU	1 pc(s)	1 pc(s)

Exothermic powders

DEHN Weld Metal is a mixture of copper oxide and aluminium, packaged by size in individual plastic tubes.
Depending on the required connection type and conductor specifications, varying weld metal sizes will be required.



Weld Metal

Type	XWM045REG	XWM065REG
Part No.	**148 010**	**148 011**
Powder weight per tube	45 g	65 g
Tubes per box	20	10
Powder weight per box	900 g	650 g
PU	1 pc(s)	1 pc(s)

Type	XWM090REG	XWM115REG
Part No.	**148 012**	**148 013**
Powder weight per tube	90 g	115 g
Tubes per box	10	10
Powder weight per box	900 g	1150 g
PU	1 pc(s)	1 pc(s)

Type	XWM150REG	XWM200REG
Part No.	**148 014**	**148 015**
Powder weight per tube	150 g	200 g
Tubes per box	10	10
Powder weight per box	1500 g	2000 g
PU	1 pc(s)	1 pc(s)

Type	XWM250REG
Part No.	**148 016**
Powder weight per tube	250 g
Tubes per box	10
Powder weight per box	2500 g
PU	1 pc(s)

Handle clamps

Mould securing clamp and screw, if eye bolt is screwed out (anti-clock wise) handle clamp will tighten mould clamping.
Handle clamps are an essential part of the welding process for the following reasons:

1. Handle clamps have a vice grip type locking arrangement which allows the operator to free his hands.
2. When repetitive welding takes place the mould becomes far too hot to handle (wear your safety gloves).
3. Mould securing clamps hold hot mould parts to the handle clamp securely, allowing easy cleaning.

Clamps for moulds

Handle Clamps such as the one shown below are required for most molds. Two types of clamp are offered, as shown in table below. For some molds, specialized frames with handles are required.

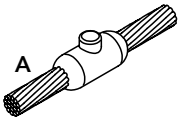


Type	GHC/1	GHC/2
Part No.	**148 998**	**148 999**
Description	For mould Typ D	For mould Typ E
Application	To clamp the mould correctly for welding	To clamp the mould correctly for welding
Pack dimension	270 x 120 x 85 mm	280 x 115 x 100 mm
PU	1 pc(s)	1 pc(s)

Selection Guide

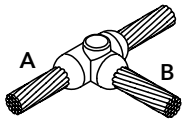
DEHN provide molds to suit all connections, some of which are displayed in this section of our catalogue.
Bolded Part No. are in stock, all other can be ordered on demand.
For more specification please contact your local partner.

Cable to cable "Straight" joint



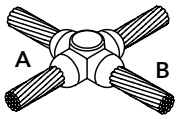
Part No.	Conductor Size "A"	Powder Size	Handle Clamp Required	Price Key of Mould
148 213	16 mm²	32	No. 148 998	D
148 214	25 mm²	32	No. 148 998	D
148 215	35 mm²	32	No. 148 998	D
148 210	**50 mm²**	**45**	**No. 148 998**	**D**
148 211	**70 mm²**	**65**	**No. 148 998**	**D**
148 216	95 mm²	90	No. 148 998	D
148 212	**120 mm²**	**115**	**No. 148 998**	**D**
148 217	150 mm²	115	No. 148 998	D
148 218	185 mm²	150	No. 148 998	D
148 219	240 mm²	200	No. 148 998	D
148 410	300 mm²	250	No. 148 998	D
148 411	400 mm²	2 x 150	No. 148 999	E

Cable to cable "T" joint



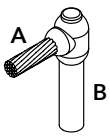
Part No.	Conductor Size "A"	Conductor Size "B"	Powder Size	Handle Clamp Required	Price Key of Mould
148 149	16 mm²	16 mm²	45	No. 148 998	D
148 140	**25 mm²**	**25 mm²**	**45**	**No. 148 998**	**D**
148 340	35 mm²	25 mm²	45	No. 148 998	D
148 341	35 mm²	35 mm²	45	No. 148 998	D
148 141	**50 mm²**	**16 mm²**	**45**	**No. 148 998**	**D**
148 342	50 mm²	25 mm²	65	No. 148 998	D
148 142	**50 mm²**	**35 mm²**	**65**	**No. 148 998**	**D**
148 143	**50 mm²**	**50 mm²**	**90**	**No. 148 998**	**D**
148 343	70 mm²	25 mm²	65	No. 148 998	D
148 344	70 mm²	35 mm²	65	No. 148 998	D
148 144	**70 mm²**	**50 mm²**	**90**	**No. 148 998**	**D**
148 145	**70 mm²**	**70 mm²**	**90**	**No. 148 998**	**D**
148 345	95 mm²	35 mm²	90	No. 148 998	D
148 346	95 mm²	50 mm²	90	No. 148 998	D
148 146	**95 mm²**	**70 mm²**	**90**	**No. 148 998**	**D**
148 347	95 mm²	95 mm²	115	No. 148 998	D
148 348	120 mm²	50 mm²	90	No. 148 998	D
148 147	**120 mm²**	**70 mm²**	**90**	**No. 148 998**	**D**
148 349	120 mm²	95 mm²	150	No. 148 998	D
148 148	**120 mm²**	**120 mm²**	**150**	**No. 148 998**	**D**
148 540	150 mm²	70 mm²	90	No. 148 998	D
148 541	150 mm²	95 mm²	150	No. 148 998	D
148 542	150 mm²	120 mm²	150	No. 148 998	D
148 543	150 mm²	150 mm²	200	No. 148 998	D
148 544	185 mm²	95 mm²	150	No. 148 998	D
148 545	185 mm²	120 mm²	200	No. 148 998	D
148 546	185 mm²	150 mm²	200	No. 148 998	D
148 547	185 mm²	185 mm²	200	No. 148 998	D
148 548	240 mm²	120 mm²	200	No. 148 998	D
148 549	240 mm²	150 mm²	200	No. 148 998	D
148 740	240 mm²	185 mm²	200	No. 148 998	D
148 741	240 mm²	240 mm²	2 x 150	No. 148 999	E
148 742	300 mm²	185 mm²	250	No. 148 998	D
148 743	300 mm²	240 mm²	2 x 200	No. 148 999	E
148 744	300 mm²	300 mm²	2 x 200	No. 148 999	E

Cable to cable "Cross" joint



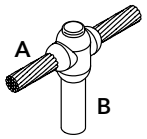
Part No.	Conductor Size "A"	Conductor Size "B"	Powder Size	Handle Clamp Required	Price Key of Mould
148 155	16 mm²	16 mm²	45	No. 148 998	D
148 156	25 mm²	25 mm²	45	No. 148 998	D
148 157	35 mm²	25 mm²	65	No. 148 998	D
148 158	35 mm²	35 mm²	65	No. 148 998	D
148 159	50 mm²	25 mm²	90	No. 148 998	D
148 350	50 mm²	35 mm²	90	No. 148 998	D
148 150	**50 mm²**	**50 mm²**	**90**	**No. 148 998**	**D**
148 351	70 mm²	25 mm²	115	No. 148 998	D
148 352	70 mm²	35 mm²	115	No. 148 998	D
148 151	**70 mm²**	**50 mm²**	**115**	**No. 148 998**	**D**
148 353	70 mm²	70 mm²	115	No. 148 998	D
148 354	95 mm²	35 mm²	115	No. 148 998	D
148 355	95 mm²	50 mm²	115	No. 148 998	D
148 356	95 mm²	70 mm²	150	No. 148 998	D
148 357	95 mm²	95 mm²	150	No. 148 998	D
148 152	**120 mm²**	**50 mm²**	**150**	**No. 148 998**	**D**
148 153	**120 mm²**	**70 mm²**	**150**	**No. 148 998**	**D**
148 358	120 mm²	95 mm²	200	No. 148 998	D
148 154	**120 mm²**	**120 mm²**	**200**	**No. 148 998**	**D**
148 359	150 mm²	70 mm²	150	No. 148 998	D
148 550	150 mm²	95 mm²	200	No. 148 998	D
148 551	150 mm²	120 mm²	250	No. 148 998	D
148 552	150 mm²	150 mm²	250	No. 148 998	D
148 553	185 mm²	70 mm²	200	No. 148 998	D
148 554	185 mm²	95 mm²	200	No. 148 998	D
148 555	185 mm²	120 mm²	250	No. 148 998	D
148 556	185 mm²	150 mm²	250	No. 148 998	D
148 557	185 mm²	185 mm²	2 x 250	No. 148 999	E
148 558	240 mm²	120 mm²	2 x 150	No. 148 999	E
148 559	240 mm²	150 mm²	2 x 200	No. 148 999	F
148 750	240 mm²	185 mm²	2 x 200	No. 148 999	F
148 751	240 mm²	240 mm²	2 x 250	No. 148 999	F
148 752	300 mm²	300 mm²	3 x 200	No. 148 999	E

Cable to earth rod "L" joint



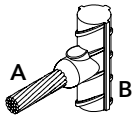
Part No.	Conductor Size "A"	Conductor Size "B"	Powder Size	Handle Clamp Required	Price Key of Mould
148 520	16 mm²	Ø14.2 mm	65	No. 148 998	D
148 125	25 mm²	Ø14.2 mm	65	No. 148 998	D
148 126	35 mm²	Ø14.2 mm	65	No. 148 998	D
148 127	50 mm²	Ø14.2 mm	90	No. 148 998	D
148 124	**70 mm²**	**Ø14.2 mm**	**90**	**No. 148 998**	**D**
148 128	95 mm²	Ø14.2 mm	90	No. 148 998	D
148 129	120 mm²	Ø14.2 mm	90	No. 148 998	D
148 320	150 mm²	Ø14.2 mm	115	No. 148 998	D
148 321	185 mm²	Ø14.2 mm	115	No. 148 998	D
148 322	240 mm²	Ø14.2 mm	150	No. 148 998	D
148 120	**16 mm²**	**Ø17.2 mm**	**65**	**No. 148 998**	**D**
148 323	25 mm²	Ø17.2 mm	65	No. 148 998	D
148 121	**35 mm²**	**Ø17.2 mm**	**65**	**No. 148 998**	**D**
148 324	50 mm²	Ø17.2 mm	90	No. 148 998	D
148 122	**70 mm²**	**Ø17.2 mm**	**90**	**No. 148 998**	**D**
148 325	95 mm²	Ø17.2 mm	90	No. 148 998	D
148 123	**120 mm²**	**Ø17.2 mm**	**90**	**No. 148 998**	**D**
148 326	150 mm²	Ø17.2 mm	115	No. 148 998	D
148 327	185 mm²	Ø17.2 mm	115	No. 148 998	D
148 328	240 mm²	Ø17.2 mm	150	No. 148 998	D
148 329	300 mm²	Ø17.2 mm	200	No. 148 998	D

Cable to earth rod "T" joint



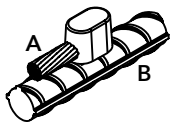
Part No.	Conductor Size "A"	Conductor Size "B"	Powder Size	Handle Clamp Required	Price Key of Mould
148 133	16 mm²	Ø14.2 mm	90	No. 148 998	D
148 134	25 mm²	Ø14.2 mm	90	No. 148 998	D
148 135	35 mm²	Ø14.2 mm	90	No. 148 998	D
148 136	50 mm²	Ø14.2 mm	90	No. 148 998	D
148 132	**70 mm²**	**Ø14.2 mm**	**115**	**No. 148 998**	**D**
148 137	95 mm²	Ø14.2 mm	115	No. 148 998	D
148 138	120 mm²	Ø14.2 mm	150	No. 148 998	D
148 139	150 mm²	Ø14.2 mm	200	No. 148 998	D
148 330	185 mm²	Ø14.2 mm	200	No. 148 998	D
148 331	240 mm²	Ø14.2 mm	250	No. 148 998	D
148 332	16 mm²	Ø17.2 mm	90	No. 148 998	D
148 333	25 mm²	Ø17.2 mm	90	No. 148 998	D
148 334	35 mm²	Ø17.2 mm	90	No. 148 998	D
148 130	**50 mm²**	**Ø17.2 mm**	**115**	**No. 148 998**	**D**
148 131	**70 mm²**	**Ø17.2 mm**	**115**	**No. 148 998**	**D**
148 335	95 mm²	Ø17.2 mm	115	No. 148 998	D
148 336	120 mm²	Ø17.2 mm	150	No. 148 998	D
148 337	150 mm²	Ø17.2 mm	200	No. 148 998	D
148 338	185 mm²	Ø17.2 mm	200	No. 148 998	D
148 339	240 mm²	Ø17.2 mm	250	No. 148 998	D
148 530	300 mm²	Ø17.2 mm	2 x 150	No. 148 999	E

Cable to reinforcing "T" joint



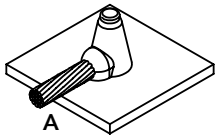
Part No.	Conductor Size "A"	Conductor Size "B"	Powder Size	Handle Clamp Required	Price Key of Mould
148 115	16 mm²	Ø10-40 mm	45	No. 148 998	D
148 116	25 mm²	Ø10-40 mm	45	No. 148 998	D
148 110	**35 mm²**	**Ø10-40 mm**	**45**	**No. 148 998**	**D**
148 111	**50 mm²**	**Ø10-40 mm**	**65**	**No. 148 998**	**D**
148 112	**70 mm²**	**Ø10-40 mm**	**90**	**No. 148 998**	**D**
148 113	**95 mm²**	**Ø10-40 mm**	**90**	**No. 148 998**	**D**
148 114	**120 mm²**	**Ø10-40 mm**	**115**	**No. 148 998**	**D**

Cable to reinforcing joint



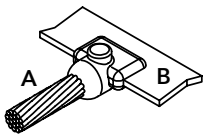
Part No.	Conductor Size "A"	Conductor Size "B"	Powder Size	Handle Clamp Required	Price Key of Mould
148 220	16 mm²	Ø10-40 mm	45	No. 148 998	D
148 221	25 mm²	Ø10-40 mm	45	No. 148 998	D
148 222	35 mm²	Ø10-40 mm	45	No. 148 998	D
148 223	50 mm²	Ø10-40 mm	90	No. 148 998	D
148 224	70 mm²	Ø10-40 mm	90	No. 148 998	D
148 225	95 mm²	Ø10-40 mm	90	No. 148 998	D
148 226	120 mm²	Ø10-40 mm	90	No. 148 998	D

Cable to steel surface joint



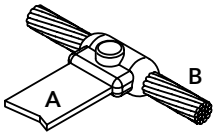
Part No.	Conductor Size "A"	Powder Size	Handle Clamp Required	Price Key of Mould
148 102	16 mm²	25	GHC/CP/75	A
148 103	25 mm²	32	GHC/CP/75	A
148 104	35 mm²	32	GHC/CP/75	A
148 100	**50 mm²**	**45**	**GHC/CP/75**	**B**
148 101	**70 mm²**	**65**	**GHC/CP/75**	**B**
148 105	95 mm²	90	GHC/CP/100	D
148 106	120 mm²	115	GHC/CP/100	D
148 107	150 mm²	150	GHC/CP/100	D
148 108	185 mm²	200	GHC/CP/100	D
148 109	240 mm²	200	GHC/CP/100	D
148 300	300 mm²	250	GHC/CP/100	D

Cable to bar "T" joint



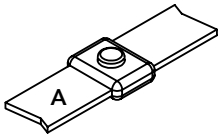
Part No.	Conductor Size "A"	Conductor Size "B"	Powder Size	Handle Clamp Required	Price Key of Mould
148 601	16 mm²	25 x 3 mm	32	No. 148 998	D
148 203	25 mm²	25 x 3 mm	45	No. 148 998	D
148 204	35 mm²	25 x 3 mm	45	No. 148 998	D
148 205	50 mm²	25 x 3 mm	45	No. 148 998	D
148 200	**70 mm²**	**25 x 3 mm**	**65**	**No. 148 998**	**D**
148 206	70 mm²	25 x 4 mm	65	No. 148 998	D
148 207	70 mm²	25 x 6 mm	90	No. 148 998	D
148 208	95 mm²	25 x 4 mm	90	No. 148 998	D
148 209	95 mm²	25 x 5 mm	90	No. 148 998	D
148 400	95 mm²	25 x 6 mm	115	No. 148 998	D
148 401	120 mm²	25 x 5 mm	115	No. 148 998	D
148 402	120 mm²	25 x 6 mm	115	No. 148 998	D
148 403	120 mm²	30 x 5 mm	115	No. 148 998	D
148 404	150 mm²	25 x 6 mm	115	No. 148 998	D
148 405	150 mm²	30 x 5 mm	115	No. 148 998	D
148 406	150 mm²	40 x 5 mm	115	No. 148 998	D
148 407	185 mm²	31 x 6 mm	150	No. 148 998	D
148 408	185 mm²	40 x 5 mm	150	No. 148 998	D
148 409	185 mm²	50 x 5 mm	150	No. 148 998	D
148 600	240 mm²	50 x 5 mm	200	No. 148 998	D
148 201	**240 mm²**	**50 x 6 mm**	**250**	**No. 148 998**	**D**
148 202	**300 mm²**	**50 x 6 mm**	**2 x 150**	**No. 148 999**	**E**

Bar to cable "T" joint



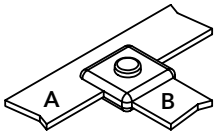
Part No.	Conductor Size "A"	Conductor Size "B"	Powder Size	Handle Clamp Required	Price Key of Mould
148 162	20 x 2 mm	16 mm²	45	No. 148 998	D
148 163	20 x 3 mm	16 mm²	45	No. 148 998	D
148 164	25 x 3 mm	16 mm²	65	No. 148 998	D
148 165	20 x 2 mm	25 mm²	45	No. 148 998	D
148 166	20 x 3 mm	25 mm²	45	No. 148 998	D
148 167	25 x 3 mm	25 mm²	65	No. 148 998	D
148 168	20 x 2 mm	35 mm²	45	No. 148 998	D
148 169	20 x 3 mm	35 mm²	45	No. 148 998	D
148 360	25 x 3 mm	35 mm²	65	No. 148 998	D
148 361	20 x 3 mm	50 mm²	45	No. 148 998	D
148 362	25 x 2 mm	50 mm²	65	No. 148 998	D
148 160	**25 x 3 mm**	**50 mm²**	**65**	**No. 148 998**	**D**
148 363	50 x 3 mm	50 mm²	150	No. 148 998	D
148 161	**25 x 3 mm**	**70 mm²**	**90**	**No. 148 998**	**D**
148 364	25 x 4 mm	70 mm²	115	No. 148 998	D
148 365	25 x 6 mm	70 mm²	115	No. 148 998	D
148 366	50 x 3 mm	70 mm²	200	No. 148 998	D
148 367	25 x 4 mm	95 mm²	150	No. 148 998	D
148 368	25 x 5 mm	95 mm²	150	No. 148 998	D
148 369	25 x 6 mm	95 mm²	150	No. 148 998	D
148 560	50 x 3 mm	95 mm²	200	No. 148 998	D
148 561	25 x 5 mm	120 mm²	150	No. 148 998	D
148 562	25 x 6 mm	120 mm²	150	No. 148 998	D
148 563	30 x 5 mm	120 mm²	200	No. 148 998	D
148 564	50 x 3 mm	120 mm²	200	No. 148 998	D
148 565	25 x 6 mm	150 mm²	200	No. 148 998	D
148 566	30 x 5 mm	150 mm²	200	No. 148 998	D
148 567	40 x 5 mm	150 mm²	250	No. 148 998	D
148 568	31 x 6 mm	185 mm²	250	No. 148 998	D
148 569	40 x 5 mm	185 mm²	250	No. 148 999	E
148 760	50 x 5 mm	185 mm²	2 x 150	No. 148 999	E
148 761	50 x 5 mm	240 mm²	2 x 150	No. 148 999	E
148 762	50 x 6 mm	240 mm²	2 x 200	No. 148 999	E
148 763	50 x 6 mm	300 mm²	2 x 250	No. 148 999	E
148 764	50 x 8 mm	300 mm²	2 x 250	No. 148 999	E

Bar to bar "Straight" joint



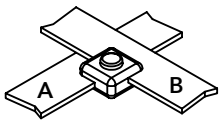
Part No.	Conductor Size "A"	Powder Size	Handle Clamp Required	Price Key of Mould
148 182	20 x 3 mm	45	No. 148 998	D
148 180	**25 x 3 mm**	**65**	**No. 148 998**	**D**
148 183	25 x 4 mm	90	No. 148 998	D
148 184	25 x 5 mm	90	No. 148 998	D
148 185	25 x 6 mm	115	No. 148 998	D
148 186	30 x 3 mm	65	No. 148 998	D
148 187	30 x 4 mm	90	No. 148 998	D
148 188	30 x 5 mm	115	No. 148 998	D
148 189	38 x 3 mm	90	No. 148 998	D
148 380	38 x 5 mm	150	No. 148 998	D
148 381	38 x 6 mm	200	No. 148 998	D
148 382	40 x 3 mm	90	No. 148 998	D
148 383	40 x 4 mm	115	No. 148 998	D
148 384	40 x 5 mm	150	No. 148 998	D
148 385	40 x 6 mm	200	No. 148 998	D
148 386	50 x 3 mm	150	No. 148 999	E
148 387	50 x 4 mm	200	No. 148 999	E
148 388	50 x 5 mm	200	No. 148 999	E
148 181	**50 x 6 mm**	**250**	**No. 148 999**	**E**
148 389	50 x 8 mm	2 x 150	No. 148 999	E

Bar to bar "T" joint



Part No.	Conductor Size "A"	Conductor Size "B"	Powder Size	Handle Clamp Required	Price Key of Mould
148 192	20 x 3 mm	20 x 3 mm	45	No. 148 998	D
148 190	**25 x 3 mm**	**25 x 3 mm**	**65**	**No. 148 998**	**D**
148 193	25 x 4 mm	25 x 4 mm	90	No. 148 998	D
148 194	25 x 6 mm	25 x 6 mm	115	No. 148 998	D
148 195	30 x 2 mm	30 x 2 mm	65	No. 148 998	D
148 196	30 x 3 mm	30 x 3 mm	65	No. 148 998	D
148 197	30 x 4 mm	30 x 4 mm	90	No. 148 998	D
148 198	30 x 5 mm	30 x 5 mm	115	No. 148 998	D
148 199	38 x 3 mm	38 x 3 mm	90	No. 148 998	D
148 390	38 x 5 mm	38 x 5 mm	150	No. 148 998	D
148 391	38 x 6 mm	38 x 6 mm	200	No. 148 998	D
148 392	40 x 3 mm	40 x 3 mm	90	No. 148 998	D
148 393	40 x 4 mm	40 x 4 mm	115	No. 148 998	D
148 394	40 x 5 mm	40 x 5 mm	150	No. 148 998	D
148 395	40 x 6 mm	40 x 6 mm	200	No. 148 998	D
148 396	50 x 3 mm	50 x 3 mm	150	No. 148 999	E
148 397	50 x 4 mm	50 x 4 mm	200	No. 148 999	E
148 398	50 x 5 mm	50 x 5 mm	200	No. 148 999	E
148 191	**50 x 6 mm**	**50 x 6 mm**	**250**	**No. 148 999**	**E**

Bar to bar "Cross" joint



Part No.	Conductor Size "A"	Conductor Size "B"	Powder Size	Handle Clamp Required	Price Key of Mould
148 172	20 x 3 mm	20 x 3 mm	65	No. 148 998	D
148 170	**25 x 3 mm**	**25 x 3 mm**	**65**	**No. 148 998**	**D**
148 173	25 x 4 mm	25 x 4 mm	90	No. 148 998	D
148 174	25 x 5 mm	25 x 5 mm	90	No. 148 998	D
148 175	25 x 6 mm	25 x 6 mm	115	No. 148 998	D
148 176	30 x 3 mm	30 x 3 mm	115	No. 148 998	D
148 177	30 x 4 mm	30 x 4 mm	115	No. 148 998	D
148 178	30 x 5 mm	30 x 5 mm	115	No. 148 998	D
148 179	38 x 3 mm	38 x 3 mm	150	No. 148 998	D
148 370	38 x 5 mm	38 x 5 mm	150	No. 148 998	D
148 371	38 x 6 mm	38 x 6 mm	200	No. 148 998	D
148 372	40 x 3 mm	40 x 3 mm	200	No. 148 998	D
148 373	40 x 4 mm	40 x 4 mm	200	No. 148 998	D
148 374	40 x 5 mm	40 x 5 mm	200	No. 148 998	D
148 375	40 x 6 mm	40 x 6 mm	200	No. 148 998	D
148 376	50 x 3 mm	50 x 3 mm	200	No. 148 999	E
148 377	50 x 4 mm	50 x 4 mm	200	No. 148 999	E
148 378	50 x 5 mm	50 x 5 mm	200	No. 148 999	E
148 171	**50 x 6 mm**	**50 x 6 mm**	**200**	**No. 148 999**	**E**

Handle Clamp



Part No.	Description	Min. Order Quantity
148 998	**Standard handle clamp**	**1**
148 999	**Larger handle clamp**	**1**
148 997	Chain support handle clamps	1

Exothermic Weld Metal



Part No.	Item Description	Cartridges per Box
148 017	Exothermic Weld Metal 15 g	20
148 018	Exothermic Weld Metal 25 g	20
148 019	Exothermic Weld Metal 32 g	20
148 010	**Exothermic Weld Metal 45 g**	**20**
148 011	**Exothermic Weld Metal 65 g**	**10**
148 012	**Exothermic Weld Metal 90 g**	**10**
148 013	**Exothermic Weld Metal 115 g**	**10**
148 014	**Exothermic Weld Metal 150 g**	**10**
148 015	**Exothermic Weld Metal 200 g**	**10**
148 016	**Exothermic Weld Metal 250 g**	**10**

Toolset



Part No.	Item Description	Content
148 988	Toolset complete	Plastic Tool Box
		Mould Scraper 34
		Mould Scraper 55
		Mould Scraper 65
		Mould Cleaning Brush
		Conductor Cleaning Brush
		Flint Ignitor Gun
		Sealing Putty, 160 mm long, 500 g



Surge Protection

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Planned Safety

Failure of technical installations and systems in residential and functional buildings is very unpleasant and expensive. Therefore, faultless operation of devices must be ensured both during normal operation and thunderstorms. The number of annually registered lightning activities in Germany has remained at a constantly high level over many years. The damage statistics of insurance companies clearly show that there are deficits in terms of lightning and surge protection measures both in the private and commercial sector (Figure 1). With a professional approach, suitable protective measures can be implemented. The lightning protection zone concept, for example, enables planners, installers and operators of buildings and installations to consider, implement and monitor various protective measures. In this way, all relevant devices, equipment and systems can be reliably protected at an economically justifiable cost.

Sources of interference

Surges occurring during a thunderstorm are caused by direct / nearby lightning strikes or remote lightning strikes (Figure 2 and Figure 3). Direct or nearby lightning strikes are lightning strikes to a building, its surroundings or electrically conductive systems entering the building (e.g. low-voltage supply, telecommunication and data lines). The resulting impulse currents and impulse voltages as well as the associated electromagnetic field are particularly dangerous for the devices and installations to be protected with regard to the amplitude and energy content involved. In case of a direct or nearby lightning strike, surges are caused by the voltage drop at the conventional earthing impedance Rst and the resulting potential rise of the building in relation to the remote earth (Figure 3, case 2). This represents the highest load for electrical installations in buildings.

The characteristic parameters of the impulse current that flows (peak value, rate of current rise, charge, specific energy) can be described by the 10/350 µs impulse current wave form and are defined in international, European and national standards as the test current for components and devices for protection against direct lightning strikes (Figure 4).

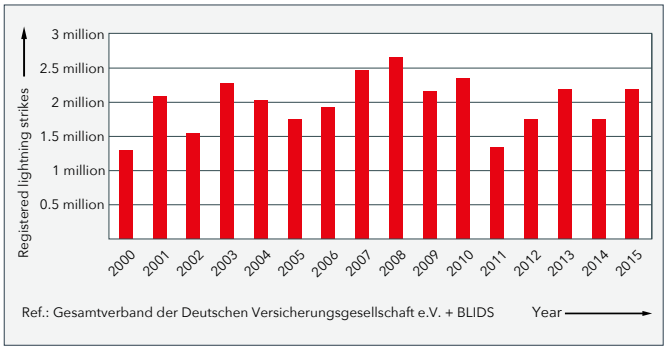


Figure 1: Lightning activity registered in Germany from 2000 to 2015.

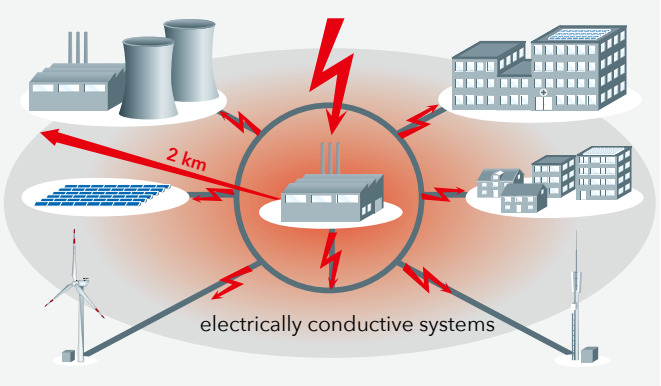


Figure 2: General risks for buildings and installations resulting from lightning strikes.

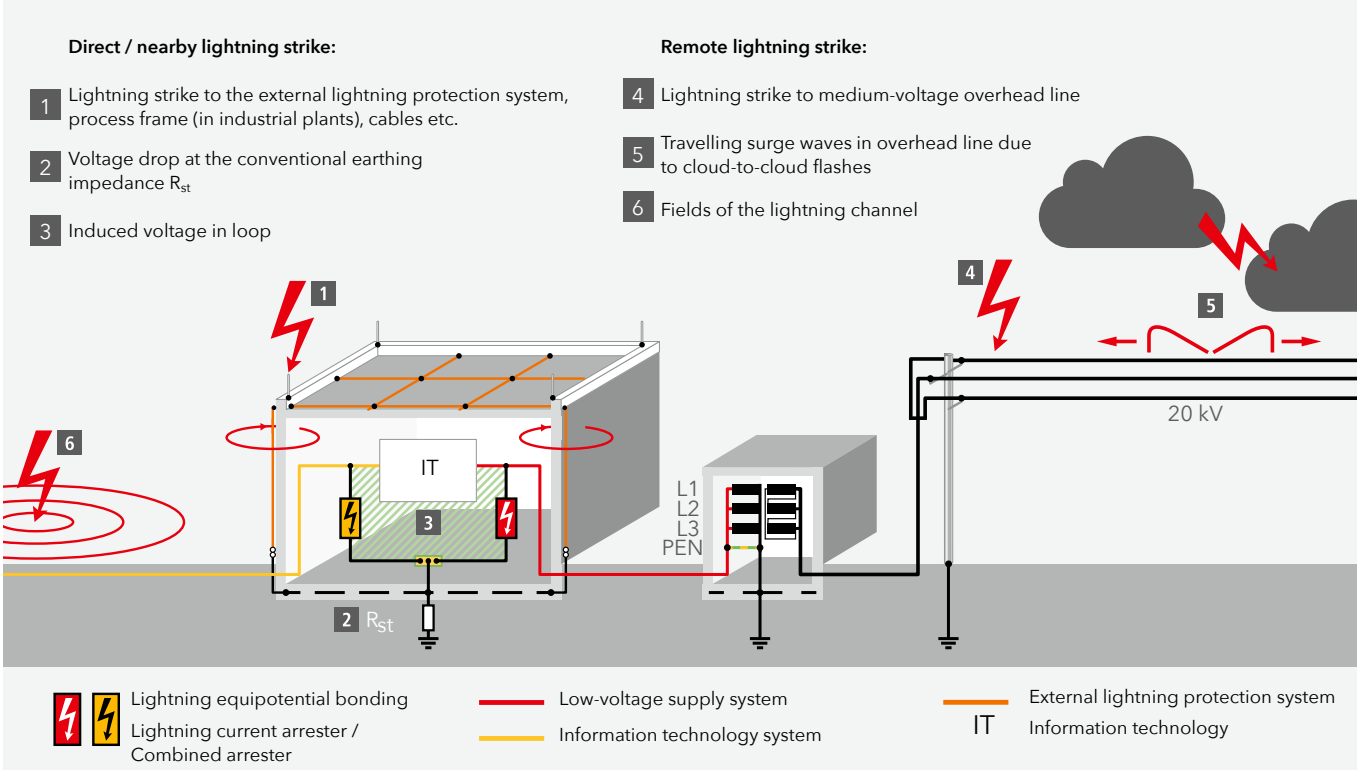


Figure 3: Causes of surges during lightning discharges.

In addition to the voltage drop at the conventional earthing impedance, surges are generated in the electrical installation of a building and the systems and devices connected to it due to the inductive effect of the electromagnetic lightning field (Figure 3, case 3). The energy of these induced surges and of the resulting impulse currents is far lower than the energy of a direct lightning impulse current and is therefore described by a 8/20 µs impulse current wave form (Figure 4). Components and devices that do not have to conduct currents resulting from direct lightning strikes are therefore tested with such 8/20 µs impulse currents.

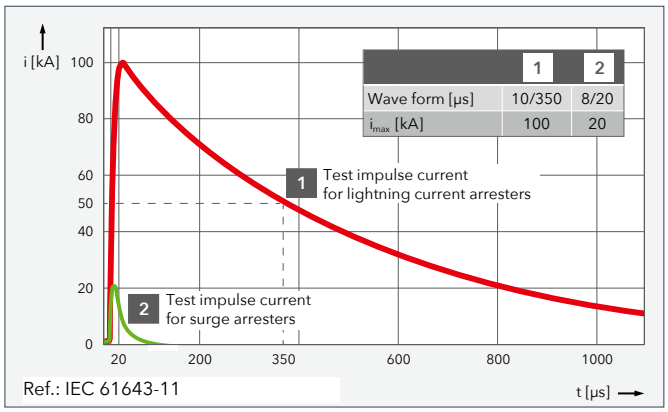


Figure 4: Test impulse currents for lightning current and surge arresters.

Protection scheme

Lightning strikes are described as remote if they occur a long distance from the object to be protected, strike medium-voltage overhead lines or their surroundings or occur as cloud-to-cloud lightning discharges (Figure 3, cases 4, 5, 6). Similar to induced surges, the effects of remote lightning strikes on the electrical installation of a building are handled by devices and components which have been dimensioned according to 8/20 µs impulse current waves. Surges caused by switching operations (SEMP) are, for example, generated by:

- Disconnection of inductive loads (e.g. transformers, reactors, motors)
- Arc ignition and interruption (e.g. arc welding equipment)
- Tripping of fuses

The effects of switching operations in the electrical installation of a building can also be simulated by impulse currents of 8/20 µs wave form under test conditions. To ensure continuous availability of complex power supply and information technology systems even in case of direct lightning interference, further surge protection measures for electrical and electronic installations and devices based on a lightning protection system for the building are required. It is important to take all causes of surges into account. To do so, the lightning protection zone concept as described in IEC 62305-4 is applied (Figure 5).

Lightning protection zone concept

The building is divided into different endangered zones. These zones help to define the necessary protection measures, in particular the lightning and surge protection devices and components. An EMC-based (EMC = electromagnetic compatibility) lightning protection zone concept includes external lightning protection (air-termination system, down-conductor system, earth-termination system), equipotential bonding, spatial shielding and surge protection for the power supply and information technology systems. Definitions apply as classified in Table 1.

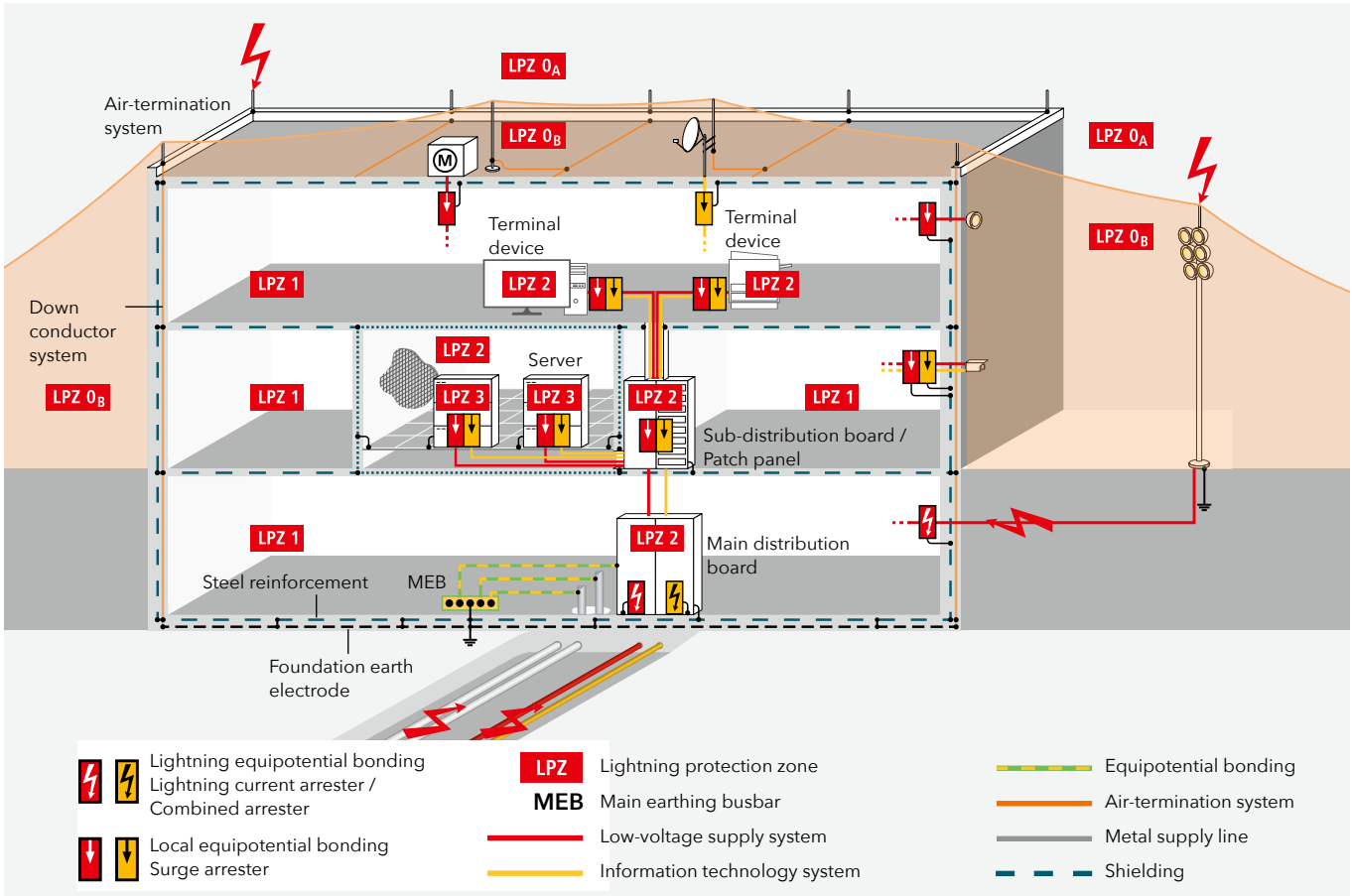


Figure 5: Overall view of a lightning protection zone concept.

Planned Safety

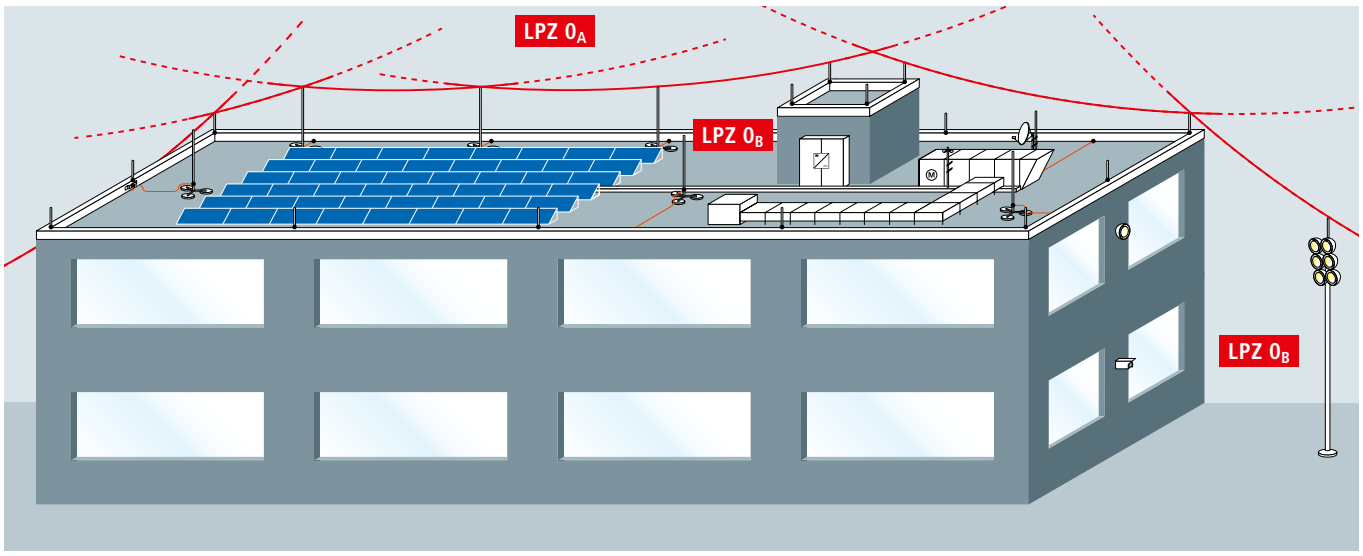


Figure 5.1: Transition from LPZ 0_A to LPZ 0_B

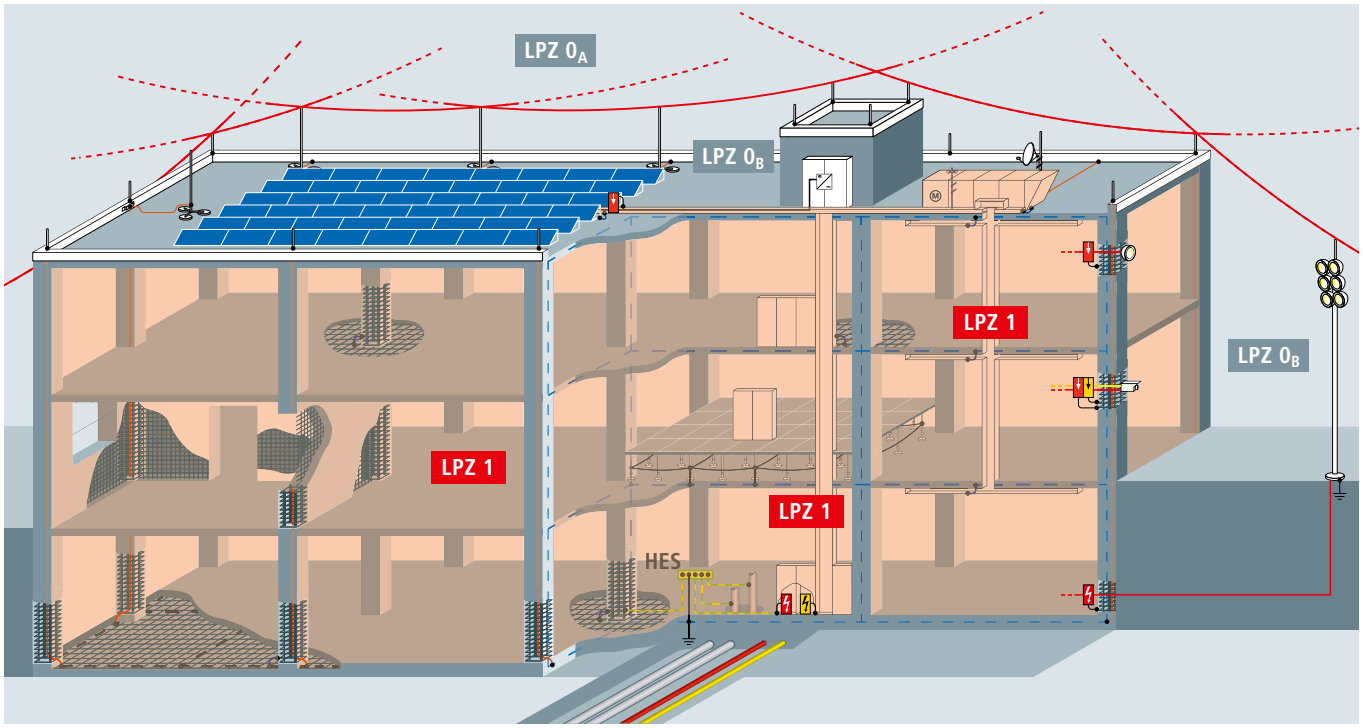


Figure 5.2: Transitions from LPZ 0_A to LPZ 1 and LPZ 0_B to LPS 1

According to the requirements and loads placed on surge protective devices, they are categorised as lightning current arresters, surge arresters and combined arresters. The highest requirements are placed on the discharge capacity of lightning current arresters and combined arresters used at the transition from lightning protection zone 0_A to 1 or 0_A to 2. These arresters must be capable of conducting partial lightning currents of 10/350 µs wave form without being destroyed in order to prevent the ingress of destructive partial lightning currents into the electrical installation of a building. At the transition point from LPZ 0_B to 1 or downstream of the lightning current arrester at the transition point from LPZ 1 to 2 and higher, surge arresters are used to protect against surges. Their task is both to reduce the residual energy of the upstream protection stages even further and to limit the surges induced or generated in the installation itself.

The lightning and surge protective measures at the boundaries of the lightning protection zones described above are equally applicable to power supply and information technology systems. All measures described in the EMC-based lightning protection zone concept help to achieve continuous availability of electrical and electronic devices and installations.

For more detailed technical information, DEHN offers a "Lightning Protection Guide" which can be downloaded at www.dehn-international.com/en/downloads.

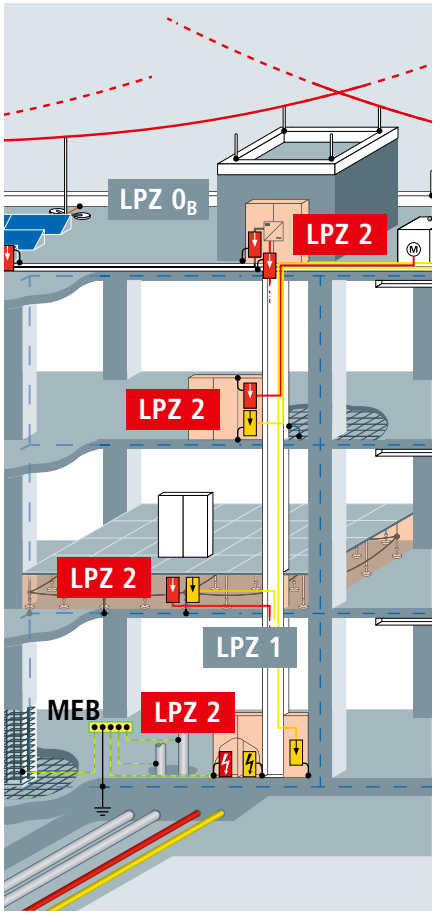


Figure 5.3: Transition from LPZ 1 to LPZ 2

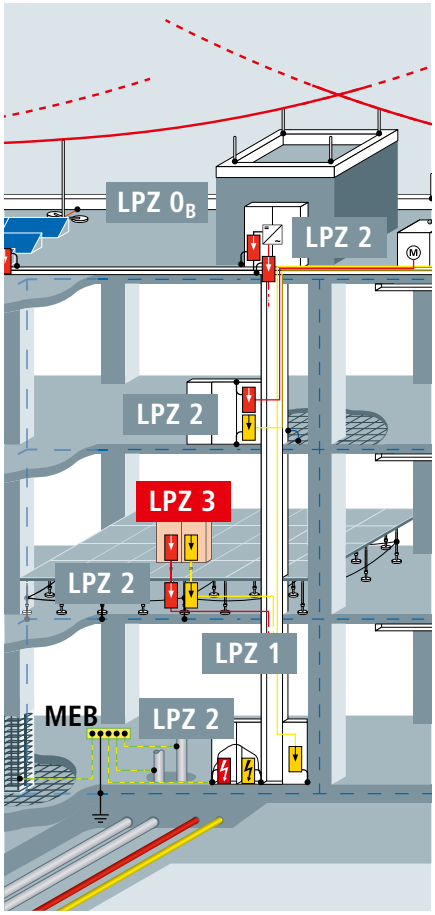
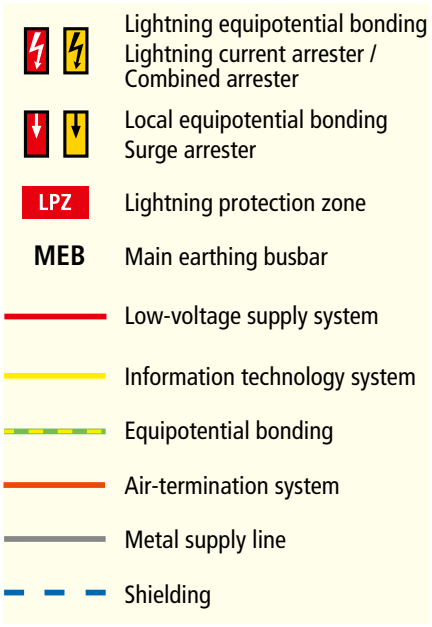


Figure 5.4: Transition from LPZ 2 to LPZ 3



IEC 62305-4

Outer zones:

LPZ 0 Zone where the threat is due to the unattenuated lightning electromagnetic field and where the internal systems may be subjected to full or partial lightning surge current.

LPZ 0 is subdivided into:

LPZ 0_A Zone where the threat is due to the direct lightning flash and the full lightning electromagnetic field. The internal systems may be subjected to full lightning surge current.

LPZ 0_B Zone protected against direct lightning flashes but where the threat is the full lightning electromagnetic field. The internal systems may be subjected to partial lightning surge currents.

Inner zones (protected against direct lightning flashes):

LPZ 1 Zone where the surge current is limited by current sharing and isolating interfaces and/or by SPDs at the boundary. Spatial shielding may attenuate the lightning electromagnetic field.

LPZ 2 ... n Zone where the surge current may be further limited by current sharing and isolating interfaces and/or by additional SPDs at the boundary. Additional spatial shielding may be used to further attenuate the lightning electromagnetic field.

Table 1: Definition of lightning protection zones.

Terms and Definitions

Surge Protective Devices (SPDs)

Surge protective devices are devices consisting mainly of voltage-controlled resistors (varistors, suppressor diodes) and / or spark gaps (discharge paths). Surge protective devices are used to protect other electrical equipment and installations against impermissibly high surges and / or to establish equipotential bonding.

Surge protective devices are classified:

a) according to their **use** into:

- Surge protective devices for power supply systems and equipment (Red / Line product family)
  – according to IEC 61643-11 in type 1 / 2 / 3 SPDs
  – according to IEC 61643-11 in class I / II / III SPDs
- Surge protective devices for IT systems and equipment (Yellow / Line product family) for protecting modern electronic systems in telecommunications and signal-processing networks with nominal voltages up to 1000 V a.c. [root-mean-square value (rms)] and 1500 V d.c. against the indirect and direct effects of lightning strikes and other transients.
  – according to IEC 61643-21, IEC 61643-21
- Isolating spark gaps for earth-termination systems or equipotential bonding (Red / Line product family)
- Surge protective devices for use in photovoltaic installations (Red / Line product family) for nominal voltage ranges up to 1500 V
  – according to IEC 50539-11 as type 1 / 2 SPDs

b) according to their **impulse current discharge capacity** and protective effect into:

- Lightning current arresters / Coordinated lightning current arresters for interference resulting from direct or nearby lightning strikes for protecting installations and equipment [for use at the boundaries between lightning protection zones (LPZ) 0_A and 1).
- Surge arresters
  for remote lightning strikes, switching overvoltages as well as electrostatic discharges for protecting installations, equipment and terminal devices (for use at the boundaries downstream of LPZ 0_B).
- Combined lightning current and surge arresters
  for interference resulting from direct or nearby lightning strikes for protecting installations, equipment and terminal devices (for use at the boundaries between 0_A and 1 as well as 0_A and 2).

Technical data

The technical data of surge protective devices comprise information defining their conditions of use according to:

- use (e.g. installation, power supply conditions, temperature)
- performance in case of interference (e.g. impulse current discharge capacity, follow current extinguishing capability, voltage protection level, response time)
- performance during operation (e.g. nominal current, attenuation, insulation resistance)
- performance in case of failure (e.g. backup fuse, disconnection device, fail-safe, remote signalling option).

actiVsense
The actiVsense tecahnology is integrated in universal combined arresters for protecting information technology installations and devices. The arrester automatically detects the signal voltage applied and optimally adapts the voltage protection level to it. This makes the arrester universally applicable at different interfaces and provides the best possible protection for the devices and system circuits connected to it in case of failure.

Breaking capacity, follow current extinguishing capability I_{fi}
The breaking capacity is the uninfluenced (prospective) r.m.s. value of the mains follow current which can automatically be extinguished by the surge protective device when connecting U_C. It can be verified in an operating duty test according to IEC 61643-11.

Categories according to IEC 61643-21
A number of impulse voltages and impulse currents are described in IEC 61643-21 for testing the current carrying capability and voltage limitation of impulse interference. Table 3 of this standard puts these into categories and provides preferred values. In Table 2 of the IEC 61643-22 standard the sources of transients are assigned to the different impulse categories according to the decoupling mechanism. Category C2 includes inductive coupling (surges), category D1 galvanic coupling (lightning currents). The relevant category is specified in the technical data.
DEHN surge protective devices surpass the values in the specified categories. Therefore, the exact value for the impulse current carrying capability is indicated by the nominal discharge current (8/20 µs) and the lightning impulse current (10/350 µs).

Combination wave U_{OC}
A combination wave is generated by a hybrid generator (1.2/50 µs, 8/20 µs) with a fictitious impedance of 2 Ω. The open-circuit voltage of this generator is referred to as U_{OC}. U_{OC} is a preferred indicator for type 3 arresters since only these arresters may be tested with a combination wave (according to IEC 61643-11).

Cut-off frequency f_G
The cut-off frequency defines the frequency-dependent behaviour of an arrester. The cut-off frequency is equivalent to the frequency which induces an insertion loss (a_E) of 3 dB under certain test conditions (see IEC 61643-21). Unless otherwise indicated, this value refers to a 50 Ω system.

Degree of protection
The IP degree of protection corresponds to the protection categories described in IEC/EN 60529.

Direct Current Disconnection
When using surge arresters in d.c. applications, disconnection must be reliably ensured even if there are no zero crossings. The specifically developed DC Disconnection (DCD) technology acts as a wedge similar to a blocking valve and interrupts the direct current. Consequently, the devices of the DEHNguard SE DC series are capable of safely interrupting direct currents, thus preventing fire damage caused by d.c. switching arcs.

Disconnecting time t_a
The disconnecting time is the time which passes until the power supply is automatically disconnected in case of a failure of the circuit or equipment to be protected. The disconnecting time is an application-specific value resulting from the intensity of the fault current and the characteristics of the protective device.

Energy coordination of SPDs
Energy coordination is the selective and coordinated interaction of cascaded protection elements (= SPDs) of an overall lightning and surge protection concept. This means that the total load of the lightning impulse current is split between the SPDs according to their energy carrying capability. If energy coordination does not work, downstream SPDs are not sufficiently relieved by the upstream SPDs as they intervene too late, insufficiently or not at all. Consequently, downstream SPDs as well as the terminal equipment to be protected may be destroyed.
DIN CLC/TS 61643-12 describes how to verify energy coordination. Spark-gap-based type 1 SPDs offer considerable advantages due to their voltage-switching characteristic (see WAVE BREAKER FUNCTION).

Follow current extinguishing capability I_{fi}
Prospective short-circuit current that an SPD is able to interrupt independently without disconnection (source: IEC 61643-11).

Frequency range
The frequency range represents the transmission range or cut-off frequency of an arrester depending on the described attenuation characteristics.

Insertion loss
With a given frequency, the insertion loss of a surge protective device is defined by the relation of the voltage value at the place of installation before and after installing the surge protective device. Unless otherwise indicated, the value refers to a 50 Ω system.

Integrated backup fuse
According to the product standard for SPDs, overcurrent protective devices/backup fuses must be used. This, however, requires additional space in the distribution board, additional cable lengths, which should be as short as possible according to IEC 60364-5-53, additional installation time (and costs) and dimensioning of the fuse. A fuse integrated in the arrester ideally suited for the impulse currents involved eliminates all these disadvantages. The space gain, lower wiring effort, integrated fuse monitoring and the increased protective effect due to shorter connecting cables are clear advantages of this concept which is integrated in the DEHNvenCI, DEHNbloc Maxi S, DEHNguard … CI and V(A) NH product families.

LifeCheck
Repeated discharge processes which exceed the specification of the device can overload arresters in information technology systems. In order to ensure high system availability, arresters should therefore be subjected to systematic tests. LifeCheck allows quick and easy testing of arresters.

Lightning impulse current I_{imp}
The lightning impulse current is a standardised impulse current curve with a 10/350 µs wave form. Its parameters (peak value, charge, specific energy) simulate the load caused by natural lightning currents. Lightning current and combined arresters must be capable of discharging such lightning impulse currents several times without being destroyed.

Mains-side overcurrent protection/arrester backup fuse
Overcurrent protective device (e.g. fuse or circuit breaker) located outside of the arrester on the infeed side to interrupt the power-frequency follow current as soon as the breaking capacity of the surge protective device is exceeded. No additional backup fuse is required since the backup fuse is already integrated in the SPD (see relevant section).

Maximum continuous operating voltage U_C
The maximum continuous operating voltage (maximum permissible operating voltage) is the r.m.s. value of the maximum voltage which may be connected to the corresponding terminals of the surge protective device during operation. This is the maximum voltage on the arrester in the defined non-conducting state, which reverts the arrester back to this state after it has tripped and discharged. The value of U_C depends on the nominal voltage of the system to be protected and the installer's specifications (IEC 60364-5-53).

Maximum continuous operating voltage U_{CPV} for a photovoltaic (PV) system
Value of the maximum d.c. voltage that may be permanently applied to the terminals of the SPD. To ensure that U_{CPV} is higher than the maximum open-circuit voltage of the PV system in case of all external influences (e.g. ambient temperature, solar radiation intensity), U_{CPV} must be higher than this maximum open-circuit voltage by a factor of 1.2 (according to IEC 61643-32). This factor of 1.2 ensures that the SPDs are not incorrectly dimensioned.

Maximum discharge current I_{max}
The maximum discharge current is the maximum peak value of the 8/20 µs impulse current which the device can safely discharge.

Maximum transmission capacity
The maximum transmission capacity defines the maximum high-frequency power which can be transmitted via a coaxial surge protective device without interfering with the protection component.

Terms and Definitions

Nominal discharge current I_n
The nominal discharge current is the peak value of a 8/20 µs impulse current for which the surge protective device is rated in a certain test programme and which the surge protective device can discharge several times.

Nominal load current (nominal current) I_L
The nominal load current is the maximum permissible operating current which may permanently flow through the corresponding terminals.

Nominal voltage U_N
The nominal voltage stands for the nominal voltage of the system to be protected. The value of the nominal voltage often serves as type designation for surge protective devices for information technology systems. It is indicated as an r.m.s. value for a.c. systems.

N-PE arrester
Surge protective devices exclusively designed for installation between the N and PE conductor.

Operating temperature range T_U
The operating temperature range indicates the range in which the devices can be used. For non-self-heating devices, it is equal to the ambient temperature range. The temperature rise for self-heating devices must not exceed the maximum value indicated.

Permanent short-circuit current I_k
The r.m.s. value of the short-circuit current in low-voltage or high-voltage three-phase systems which remains after all compensation processes [based on IEC 60909-0].

Protective circuit
Protective circuits are multi-stage, cascaded protective devices. The individual protection stages may consist of spark gaps, varistors, semiconductor elements and gas discharge tubes (see energy coordination).

Protective conductor current I_{PE}
The protective conductor current is the current which flows through the PE connection when the surge protective device is connected to the maximum continuous operating voltage U_C, according to the installation instructions and without load-side consumers.

Remote signalling contact
A remote signalling contact allows easy remote monitoring and indication of the operating state of the device. It features a three-pole terminal in the form of a floating changeover contact. This contact can be used as a break and/or make contact and can thus be easily integrated in the building control system, controller of the switchgear cabinet, etc.

Response time t_A
Response times mainly characterise the response performance of individual protection elements used in arresters. Depending on the rate of rise du/dt of the impulse voltage or di/dt of the impulse current, the response times may vary within certain limits.

Return loss
In high-frequency applications, the return loss refers to how many parts of the "leading" wave are reflected at the protective device (surge point). This is a direct measure of how well a protective device is attuned to the characteristic impedance of the system.

SCI technology
Direct currents (d.c.) flow on the generator side of a PV system. The surge protective devices used on the generator side can be overloaded due to different scenarios (e.g. impulse load, insulation faults) and must not endanger the PV system. However, insufficient d.c. disconnection capability in a PV system may cause fire. Conventional surge arresters only feature a disconnector in the form of a simple break contact mechanism which is typically used for a.c. devices. Due to the lacking zero crossing of the d.c. source, a d.c. arc may persist and cause fire. The SCI technology patented by DEHN with active arc extinction is an ideal solution. In case of overload, a contact is opened and a short-circuit is generated (short circuit). Thus, any switching arc which may arise is actively, quickly and safely extinguished. The PV fuse integrated in the short-circuit path immediately trips after the arc has been extinguished and ensures safe electrical isolation (interruption) (see also pages 293-295). Thus, all PV arresters from DEHN combine surge protection, fire protection and personal protection in a single device.

Series resistance
Resistance in the direction of the signal flow between the input and output of an arrester. The series resistance is normally used to coordinate the protection stages in a multi-stage SPD.

Shield attenuation
Relationship between the power fed into a coaxial cable and the power radiated from the cable through the phase conductor.

Short-circuit withstand capability
The short-circuit withstand capability is the value of the prospective power-frequency short-circuit current handled by the surge protective device when the relevant maximum backup fuse is connected upstream.

Short-circuit current rating I_{SCCR}
Maximum prospective short-circuit current for which the SPD alone or in conjunction with its disconnectors is rated (source: IEC 61643-11).

Short-circuit rating I_{SCPV} of an SPD in a photovoltaic (PV) system
Maximum uninfluenced short-circuit current which the SPD, alone or in conjunction with its disconnection devices, is able to withstand.

Temporary overvoltage (TOV)
Temporary overvoltage may be present at the surge protective device for a short period of time due to a fault in the high-voltage system. This must be clearly distinguished from a transient caused by a lightning strike or a switching operation, which last no longer than about 1 ms. The amplitude U_T

and the duration of this temporary overvoltage are specified in IEC 61643-11 (200 ms, 5 s or 120 min.) and are individually tested for the relevant SPDs according to the system configuration (TN, TT, etc.). The SPD can either a) reliably fail (TOV safety) or b) be TOV-resistant (TOV withstand), meaning that it is completely operational during and following temporary overvoltages.

Thermal disconnector
Surge protective devices for use in power supply systems equipped with voltage-controlled resistors (varistors) mostly feature an integrated thermal disconnector that disconnects the surge protective device in case of overload and indicates this operating state. The disconnector responds to the "current heat" generated by an overloaded varistor and disconnects the surge protective device if a certain temperature is exceeded. The disconnector is designed to disconnect the overloaded surge protective device in time to prevent a fire. It is not intended to ensure protection against indirect contact. The function of these thermal disconnectors can be tested by means of a simulated overload/ageing of the arresters.

Total discharge current I_{total}
Current which flows through the PE, PEN or earth connection of a multipole SPD during the total discharge current test. This test is used to determine the total load if current simultaneously flows through several protective paths of a multipole SPD. This parameter is decisive for the total discharge capacity which is reliably handled by the sum of the individual paths of an SPD.

Voltage protection level U_P
The voltage protection level of a surge protective device is the maximum instantaneous value of the voltage at the terminals of a surge protective device, determined from the standardised individual tests:

- Lightning impulse sparkover voltage 1.2/50 µs (100%)
- Sparkover voltage with a rate of rise of 1 kV/µs
- Measured limit voltage at a nominal discharge current I_n

The voltage protection level characterises the capability of a surge protective device to limit surges to a residual level. The voltage protection level defines the installation location with regard to the overvoltage category in power supply systems. For surge protective devices to be used in information technology systems, the voltage protection level must be adapted to the immunity level of the equipment to be protected (IEC 61000-4-5).

Wave breaker function
Due to the technical design of type 1 SPDs, energy coordination of SPDs varies considerably. Experience has shown that even small amplitudes of the 10/350 µs lightning impulse current can overload and even destroy downstream SPDs if varistor-based type 1 lightning current arresters are used. In case of spark-gap-based type 1 arresters, in contrast, virtually all the current flows through the type 1 arrester. Similar to a wave breaker the energy is reduced to an acceptable level. The advantage is that the time to half value of the 10/350 µs impulse current is reduced due to the reduction of the impulse time and the switching behaviour of type 1 SPDs. This considerably relieves downstream SPDs.
All devices of the DEHN Red/Line and Yellow/Line product families are energy-coordinated. Moreover, all type 1 arresters of the Red/Line family are based on spark gaps and thus feature this WAVE BREAKER FUNCTION.

Yellow/Line SPD class
All DEHN arresters for use in information technology systems are categorised into a Yellow/Line SPD class and are marked with the corresponding symbol in the data sheet and on the rating plate (see page 309).

Definition of Symbols

Symbol	Definition
NEW	**New products**
!	**Discontinued products**

Symbol	Definition	Red / Line
RAC	**RAC technology** Type 1 + 2 combined arresters with Rapid Arc Control (RAC) spark gap technology stand out on account of their minimal residual energy. This means maximum safety and optimum care for downstream electronic terminal equipment. RAC spark gap technology is the next evolutionary step for the type 1 arresters within the Red/Line family and continues to be based on the wave breaker functional principle.
ACI	**ACI technology** A further development of CI technology, ACI technology consists of a switch/spark gap combination connected in series with a heavyduty varistor. This ensures the simple design and safe operation of the surge protective device. Other features are safe dimensioning, TOV withstand, a connection cross-section of only 6 mm² Cu and zero leakage current. Surge arresters with ACI technology offer maximum safety and system availability.
CI	**Integrated backup fuse** Reduced space requirements, lower installation costs, faster wiring and shorter connecting cable lengths are clear advantages of this concept used for the DEHNvenCI, DEHNbloc Maxi S, DEHNguard … CI and V(A) NH product series.
SCI	**SCI technology** The patented SCI technology with active arc extinction allows to actively, quickly and safely extinguish a possible switching arc in case of overload. The PV fuse integrated in the short-circuit path trips immediately after the arc has been extinguished, thus ensuring safe electrical isolation (interruption). Consequently, all PV arresters from DEHN combine surge protection, fire protection and personal protection in a single device.
WBF	**Wave breaker function** If a spark-gap-based type 1 arrester is used, the total current flows through the type 1 arrester during the discharge process. Similar to a wave breaker, the energy is mitigated to a sufficiently low level, thus considerably relieving downstream SPDs. The WAVE BREAKER function is integrated in all spark-gap-based type 1 arresters of the Red/Line series.
DCD	**Direct Current Disconnection** When using surge arresters in d.c. applications, disconnection must be reliably ensured even if there are no zero crossings. The specifically developed DC Disconnection (DCD) technology acts as a wedge similar to a blocking valve and interrupts the direct current. Consequently, the devices of the DEHNguard SE DC series are capable of safely interrupting direct currents, thus preventing fire damage caused by d.c. switching arcs.

Symbol	Definition	Yellow / Line
3in1	**Compact 3-in-1 protection** This arrester allows 3 interfaces to be protected by means of a single device, resulting in reduced space requirements, faster wiring and lower installation costs.
IP66	**IP66** Surge arrester for Ethernet / PoE++ applications in an IP66 enclosure for safe use in harsh environments (water and dust).
	LifeCheck Monitoring of the protection components for thermal load as well as the integrated status indication for protection modules for use in information technology systems allows easy testing and maintenance.
	RFID LifeCheck RFID LifeCheck makes it possible to easily and quickly test arresters for information technology systems. It permanently monitors the condition of the arrester and detects electrical and thermal load on all protection components.
	Discharge capacity of an SPD (according to the categories from IEC 61643-21)
TYPE 1	Impulse D1 (10/350 µs), lightning impulse current 0.5 to 2.5 kA/line ⇨ exceeds the discharge capacity of TYPE 2 – TYPE 4
TYPE 2	Impulse C2 (8/20 µs), increased impulse load 1 to 5 kA/line ⇨ exceeds the discharge capacity of TYPE 3 – TYPE 4
TYPE 3	Impulse C1 (8/20 µs), impulse load 0.25 to 1 kA/line ⇨ exceeds the discharge capacity of TYPE 4
TYPE 4	Load < TYPE 3
	Protective effect of an SPD (limitation below the test levels according to IEC 61000-4-5)
P1	Required test level of the terminal device: 1 or higher
P2	Required test level of the terminal device: 2 or higher
P3	Required test level of the terminal device: 3 or higher
P4	Required test level of the terminal device: 4
⊕	**Energy coordination** (with another Yellow/Line SPD) SPD with decoupling impedance, suitable for coordination with an SPD marked with ↄ
ↄ	SPD is suitable for coordination with an SPD with decoupling impedance ⊕

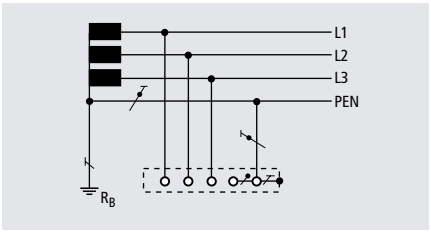
Surge Protection for Power Supply Systems

Find the right product quickly and easily:
https://www.dehn-international.com/en/selection-guides-and-configurators

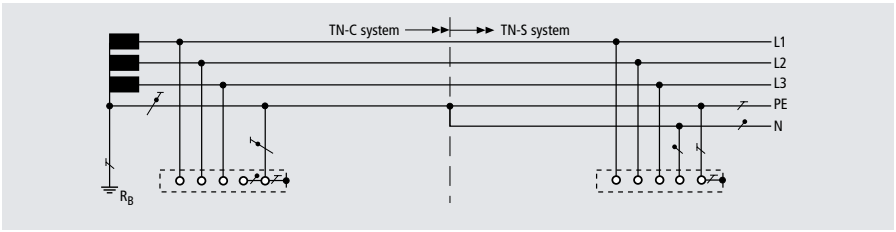
Combined Arresters – Type 1 + Type 2	Page 261
Combined Arresters – Type 1 + Type 2 for PV Systems	Page 265
Coordinated Lightning Current Arresters – Type 1	Page 266
Accessory for Arresters – Type 1	Page 269
Coordinated Lightning Current Arresters – Type 1 for d.c. Applications	Page 269
Lightning Current Arresters – Type 1	Page 270
N-PE Lightning Current Arresters	Page 271
Surge Arresters – Type 2	Page 272
Surge Arresters – Type 2 for PV Systems	Page 293
Surge Arresters – Type 3	Page 296
Measuring Devices and Accessories	Page 300

International Power Supply Systems

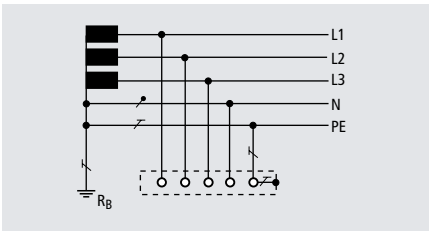
International system configurations* according to IEC 60364-1



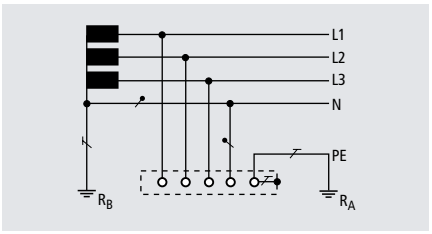
TN-C system 230 / 400 V



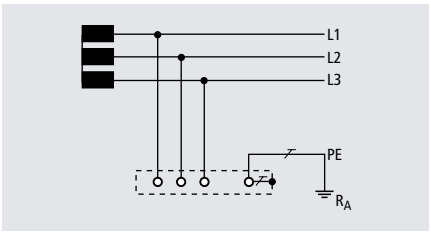
TN-C-S system 230 / 400 V



TN-S system 230 / 400 V

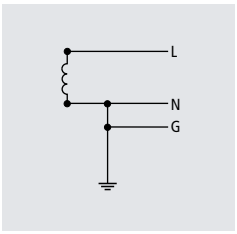


TT system 230 / 400 V



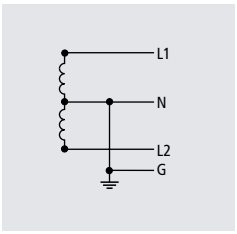
IT system 230 V

Further international system configurations*

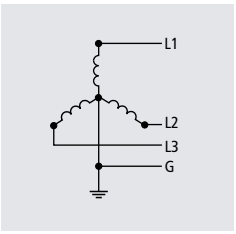


Single-phase; 3 wire

(1 Ph, 2 W + G)
110 V
120 V
220 V
240 V

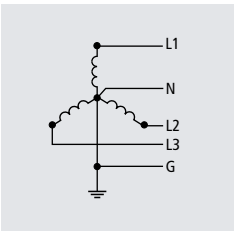


Single-phase; 4 wire
Split Phase or Edison
(1 Ph, 3 W + G)
120 V / 240 V



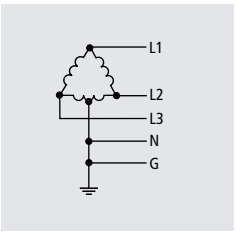
Three-phase; 4 wire

(3 Ph Y, 3 W + G)
480 V

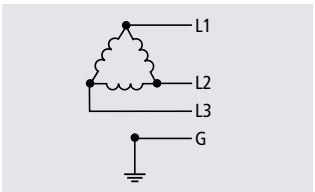


Three-phase; 5 wire

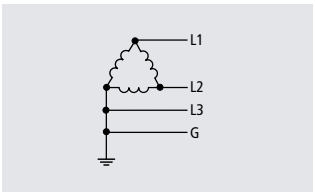
(3 Ph Y, 4 W + G)
120 V / 208 V
277 V / 480 V



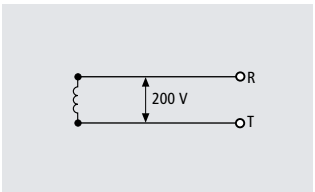
Three-phase; 5 wire
Delta "Highleg"
(3 Ph Δ, 4 W + G)
120 V / 240 V



Three-phase; 4 wire
Delta "Ungrounded"
(3 Ph Δ, 3 W + G)
240 V
480 V

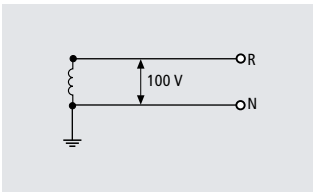


Three-phase; 4 wire
Delta "Grounded Corner"
(3 Ph Δ, 3 W + G)
240 V
480 V



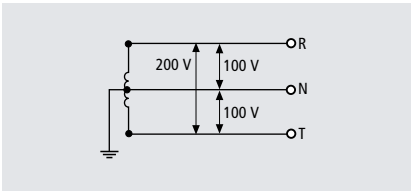
Single-phase; 2 wire

(1 Ph, 2 W)
200 V

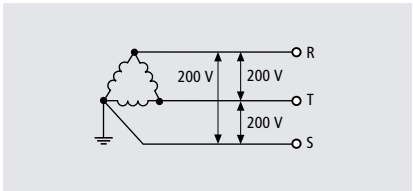


Single-phase; 2 wire

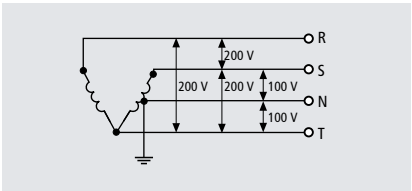
(1 Ph, 2 W)
100 V



Single-phase; 3 wire
(1 Ph, 3 W)
100 V / 200 V



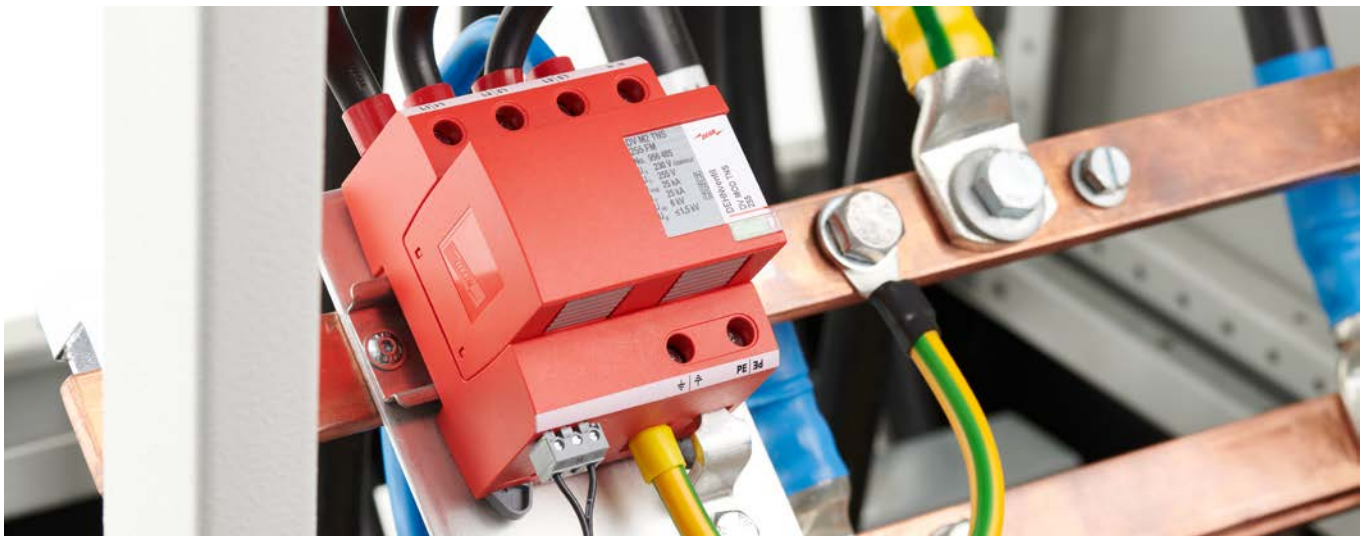
Three-phase; 3 wire
(3 Ph, 3 W)
200 V



Three-phase + single-phase

100 V / 200 V; 200 V

* System according to the earth connection (according to IEC 60364-1)



DEHNventil modular

Multipole, modular combined arrester for protecting low-voltage consumer installations against surges with a follow current extinguishing capability of 100 kA_{rms}, also in case of direct lightning strikes.

DEHNventil M2 TNC FM

Modular combined arrester for TN-C systems.



Type DV M2 ...	TNC 255 FM
Part No.	**956 305**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 + type 3 / class I + class II + class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3-PEN] (I_{total})	75 kA
Lightning impulse current (10/350 µs) [L-PEN] (I_{imp})	25 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms}	250 A gG
Approvals	VDE, KEMA, UL
Type of remote signalling contact	yes / changeover contact
Extended technical data: Use in switchgear installations with prospective short-circuit currents of more than 50 kA_{rms}	
– Max. prospective short-circuit current	100 kA_{rms} (220 kA_{peak})

DEHNventil M2 TNS FM

Modular combined arrester for TN-S systems.



Type DV M2 ...	TNS 255 FM
Part No.	**956 405**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 + type 3 / class I + class II + class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3+N-PE] (I_{total})	100 kA
Lightning impulse current (10/350 µs) [L, N-PE] (I_{imp})	25 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms}	250 A gG
Approvals	VDE, KEMA, UL
Type of remote signalling contact	yes / changeover contact
Extended technical data: Use in switchgear installations with prospective short-circuit currents of more than 50 kA_{rms}	
– Max. prospective short-circuit current	100 kA_{rms} (220 kA_{peak})

DEHNventil M2 TT FM

Modular combined lightning current and surge arrester for TT and TN-S systems (3+1 configuration).



Type DV M2 ...	TT 255 FM
Part No.	**956 315**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 + type 3 / class I + class II + class III
Max. continuous operating voltage (a.c.) [L-N] (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3+N-PE] (I_{total})	100 kA
Lightning impulse current (10/350 µs) [L-N]/[N-PE] (I_{imp})	25 / 100 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms}	250 A gG
Approvals	VDE, KEMA, UL
Type of remote signalling contact	yes / changeover contact
Extended technical data: Use in switchgear installations with prospective short-circuit currents of more than 50 kA_{rms}	
– Max. prospective short-circuit current	100 kA_{rms} (220 kA_{peak})
Supplementary data:	
– Voltage protection level [L-PE] (U_P)	1.8 kV

DEHNventil M2 TN FM

Modular combined arrester for single-phase TN systems.



Type DV M2 ...	TN 255 FM
Part No.	**956 205**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 + type 3 / class I + class II + class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L+N-PE] (I_{total})	50 kA
Lightning impulse current (10/350 µs) [L, N-PE] (I_{imp})	25 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms}	250 A gG
Approvals	VDE, KEMA, UL
Type of remote signalling contact	yes / changeover contact
Extended technical data: Use in switchgear installations with prospective short-circuit currents of more than 50 kA_{rms}	
– Max. prospective short-circuit current	100 kA_{rms} (220 kA_{peak})

DEHNventil M2 TT 2P FM

Modular combined lightning current and surge arrester for single-phase TT and TN systems (1+1 configuration).



Type DV M2 ...	TT 2P 255 FM
Part No.	956 115
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 + type 3 / class I + class II + class III
Max. continuous operating voltage (a.c.) [L-N] (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L+N-PE] (I_{total})	50 kA
Lightning impulse current (10/350 µs) [L-N]/[N-PE] (I_{imp})	25 / 50 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms}	250 A gG
Approvals	VDE, KEMA, UL
Type of remote signalling contact	yes / changeover contact
Extended technical data: Use in switchgear installations with prospective short-circuit currents of more than 50 kA_{rms}	
– Max. prospective short-circuit current	100 kA_{rms} (220 kA_{peak})
Supplementary data:	
– Voltage protection level [L-PE] (U_P)	1.8 kV

DEHNventil M2 880 FM

Kit consisting of pluggable lightning and surge arresters, including insulated module wiring bar for use in inverter systems with active anti-PID with maximum DC offset of 750 V DC. Wiring of the earthing systems in accordance with IEC 60364-4-44, Table 44.A1 – RE and Z as well as RE and RA connected.



Type DV M2 ...	880 FM
Part No.	961 151 NEW
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	880 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [1,2-3] (I_{imp})	12.5 kA
Max. backup fuse (L) up to I_K = 50 kA_{rms}	160 A gG
Type of remote signalling contact	yes / changeover contact
Supplementary data:	
– Anti-PID voltage (U_{1-3} + U_{PID})	508 V_{AC} + 750 V_{DC} – withstand

Protection module for DEHNventil modular

DV MOD ...: Spark-gap-based protection module for all devices of the modular DEHNventil series

RAC Spark Gap Protection Module

RAC spark-gap-based protection modules



General technical data:		
Max. continuous operating voltage (a.c.) (U_C)	255 V	
Type DV MOD ...	TNC 255	TNS 255
Part No.	956 030	956 040
Lightning impulse current (10/350 µs) (I_{imp})	75 kA	100 kA
Type DV MOD ...	TT 255	TN 255
Part No.	956 031	956 020
Lightning impulse current (10/350 µs) (I_{imp})	100 kA	50 kA
Type DV MOD ...		TT 2P 255
Part No.		956 011
Lightning impulse current (10/350 µs) (I_{imp})		25 kA

DEHNvenCI

Single-pole combined lightning current and surge arrester with integrated backup fuse ensures maximum system availability. For protecting low-voltage consumer installations against surges and even direct lightning strikes.

DEHNvenCI 255 (FM)

Single-pole combined lightning current and surge arrester with an integrated backup fuse capable of carrying lightning currents for use in 230 / 400 V systems; FM version with floating remote signalling contact.



Type DVCI 1 ...	255	255 FM
Part No.	961 200	961 205
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II	type 1 + type 2 / class I + class II
Maximum continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	25 kA	25 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.5 kV
Max. mains-side overcurrent protection	integrated backup fuse	integrated backup fuse
Approvals	KEMA	KEMA
Type of remote signalling contact	–	changeover contact
Extended technical data: For use in switchgear installations with prospective short-circuit currents of more than 50 kA_{rms} (tested by the German VDE)		
– Max. prospective short-circuit current	100 kA_{rms} (220 kA_{peak})	100 kA_{rms} (220 kA_{peak})

Accessories for DEHNvenCI

MVS for two-module enclosures, single-phase, four-pole

Modular wiring clip for TT systems, insulated, single-phase, four-pole with connection clamp up to 50 mm².



Type	MVS 1 4 8 TT
Part No.	900 849
Dimensions	166 x 38.1 x 22 mm
Connection clamp	10–50 mm (solid or stranded) / 6–35 mm² (flexible with wire end ferrule)
Max. lightning current (10/350 µs) based on DIN EN 61643-11 (I_{imp})	100 kA

Earthing clip for two-module enclosures, single-phase, two-pole

Earthing clip for connecting the earth terminal of e.g. two SPDs with two-module enclosure to earth, with terminal.



Type	EB 1 2 5
Part No.	900 419
Dimensions	34 x 77 x 28 mm
Terminal	up to 25 mm²

Earthing clip for two-module enclosures, single-phase, three-pole

Earthing clip for connecting the earth terminal of e.g. three SPDs with two-module enclosure to earth, with terminal.



Type	EB DG 1000 1 3
Part No.	900 411
Dimensions	34 x 112 x 28 mm
Terminal	up to 25 mm²

Earthing clip for two-module enclosures, single-phase, four-pole

Earthing clip for connecting the earth terminal of e.g. four SPDs with two-module enclosure to earth, with terminal.



Type	EB 1 4 9
Part No.	900 417
Dimensions	34 x 148 x 28 mm
Terminal	up to 25 mm²

DEHNshield

Application-optimised multipole combined lightning current and surge arrester which fulfils the minimum requirements on the lightning current discharge capacity according to IEC 60364-5-53 and ensures compact lightning equipotential bonding including protection of terminal equipment.

DEHNshield TNC

Application-optimised and prewired combined lightning current and surge arrester for TN-C systems with a nominal voltage of 230 / 400 V (3+0 configuration).



Type DSH ...	TNC 255
Part No.	**941 300**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3+N-PE] (I_{total})	37.5 kA
Lightning impulse current (10/350 µs) [L-PEN] (I_{imp})	12.5 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE, UL

DEHNshield TNC FM

Application-optimised and prewired combined lightning current and surge arrester for TN-C systems with a nominal voltage of 230 / 400 V (3+0 configuration); with floating remote signalling contact.



Type DSH ...	TNC 255 FM
Part No.	**941 305**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3-PEN] (I_{total})	37.5 kA
Lightning impulse current (10/350 µs) [L-PEN] (I_{imp})	12.5 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE
Type of remote signalling contact	changeover contact

DEHNshield TNC Basic FM

Application-optimised and prewired combined lightning current and surge arrester for TN-C systems for use in the main power supply system (3+0 configuration) in case of residential buildings without external lightning protection system (also in case of buildings supplied by overhead lines); with floating remote signalling contact.



Type DSH ...	B TNC 255 FM
Part No.	**941 306**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3-PEN] (I_{total})	22.5 kA
Lightning impulse current (10/350 µs) [L-PEN] (I_{imp})	7.5 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	VDE
Type of remote signalling contact	changeover contact

DEHNshield TNS

Application-optimised and prewired combined lightning current and surge arrester for TN-S systems with a nominal voltage of 230 / 400 V (4+0 configuration).



Type DSH ...	TNS 255
Part No.	**941 400**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3+N-PE] (I_{total})	50 kA
Lightning impulse current (10/350 µs) [L, N-PE] (I_{imp})	12.5 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE, UL

DEHNshield TNS FM

Application-optimised and prewired combined lightning current and surge arrester for TN-S systems with a nominal voltage of 230 / 400 V (4+0 configuration); with floating remote signalling contact.



Type DSH ...	TNS 255 FM
Part No.	**941 405**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3+N-PE] (I_{total})	50 kA
Lightning impulse current (10/350 µs) [L, N-PE] (I_{imp})	12.5 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE
Type of remote signalling contact	changeover contact

DEHNshield TNS Basic FM

Application-optimised and prewired combined lightning current and surge arrester for TN-S systems for use in the main power supply system (4+0 configuration) in case of residential buildings without external lightning protection system (also in case of buildings supplied by overhead lines); with floating remote signalling contact.



Type DSH ...	B TNS 255 FM
Part No.	**941 406**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3+N-PE] (I_{total})	30 kA
Lightning impulse current (10/350 µs) [L, N-PE] (I_{imp})	7.5 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	VDE
Type of remote signalling contact	changeover contact

DEHNshield TT

Application-optimised and prewired combined lightning current and surge arrester for TT and TN-S systems with a nominal voltage of 230 / 400 V (3+1 configuration).



Type DSH ...	TT 255
Part No.	**941 310**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3+N-PE] (I_{total})	50 kA
Lightning impulse current (10/350 µs) [L-N]/[N-PE] (I_{imp})	12.5 / 50 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE, UL
Extended technical data:	
Voltage protection level [L-PE] (U_P)	2.0 kV

DEHNshield TT FM

Application-optimised and prewired combined lightning current and surge arrester for TT and TN-S systems with a nominal voltage of 230 / 400 V (3+1 configuration); with floating signalling contact.



Type DSH ...	TT 255 FM
Part No.	**941 315**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3+N-PE] (I_{total})	50 kA
Lightning impulse current (10/350 µs) [L-N]/[N-PE] (I_{imp})	12.5 / 50 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE
Type of remote signalling contact	changeover contact
Extended technical data:	
Voltage protection level [L-PE] (U_P)	2.0 kV

DEHNshield TT Basic FM

Application-optimised and prewired combined lightning current and surge arrester for TT and TN-S systems for use in the main power supply system (3+1 configuration) for residential buildings without external lightning protection (also for buildings supplied by overhead lines); with floating remote signalling contact.



Type DSH ...	B TT 255 FM
Part No.	**941 316**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L1+L2+L3+N-PE] (I_{total})	30 kA
Lightning impulse current (10/350 µs) [L-N]/[N-PE] (I_{imp})	7.5 / 30 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	VDE
Type of remote signalling contact	changeover contact
Extended technical data:	
Voltage protection level [L-PE] (U_P)	2.0 kV

DEHNshield TN

Application-optimised and prewired combined lightning current and surge arrester for single-phase TN systems with a nominal voltage of 230 V (2+0 configuration).



Type DSH ...	TN 255
Part No.	**941 200**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L+N-PE] (I_{total})	25 kA
Lightning impulse current (10/350 µs) [L, N-PE] (I_{imp})	12.5 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 /≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE, UL

DEHNshield TN FM

Application-optimised and prewired combined lightning current and surge arrester for single-phase TN systems with a nominal voltage of 230 V (2+0 configuration); with floating remote signalling contact.



Type DSH ...	TN 255 FM
Part No.	**941 205**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L+N-PE] (I_{total})	25 kA
Lightning impulse current (10/350 µs) [L, N-PE] (I_{imp})	12.5 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 /≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE
Type of remote signalling contact	changeover contact

DEHNshield TN Basic FM

Application-optimised and prewired combined lightning current and surge arrester for single-phase TN systems for use in the main power supply system (2+0 configuration) in case of residential buildings without external lightning protection system (also in case of buildings supplied by overhead lines); with floating remote signalling contact.



Type DSH ...	B TN 255 FM
Part No.	**941 206**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L+N-PE] (I_{total})	15 kA
Lightning impulse current (10/350 µs) [L, N-PE] (I_{imp})	7.5 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 /≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Type of remote signalling contact	changeover contact

DEHNshield TT 2P

Application-optimised and prewired combined lightning current and surge arrester for single-phase TT and TN systems with a nominal voltage of 230 V (1+1 configuration).



Type DSH ...	TT 2P 255
Part No.	**941 110**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L+N-PE] (I_{total})	25 kA
Lightning impulse current (10/350 µs) [L-N]/[N-PE] (I_{imp})	12.5 / 25 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE, UL
Extended technical data:	
Voltage protection level [L-PE] (U_P)	2.0 kV

DEHNshield TT 2P FM

Application-optimised and prewired combined lightning current and surge arrester for single-phase TT and TN systems with a nominal voltage of 230 V (1+1 configuration); with floating remote signalling contact.



Type DSH ...	TT 2P 255 FM
Part No.	**941 115**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L+N-PE] (I_{total})	25 kA
Lightning impulse current (10/350 µs) [L-N]/[N-PE] (I_{imp})	12.5 / 25 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Approvals	KEMA, VDE
Type of remote signalling contact	changeover contact
Extended technical data:	
Voltage protection level [L-PE] (U_P)	2.0 kV

DEHNshield TT 2P Basic FM

Application-optimised and prewired combined lightning current and surge arrester for single-phase TT and TN systems for use in the main power supply system (1+1 configuration) in case of residential buildings without external lightning protection system (also in case of buildings supplied by overhead lines); with floating remote signalling contact.



Type DSH ...	B TT 2P 255 FM
Part No.	**941 116**
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) [L+N-PE] (I_{total})	15 kA
Lightning impulse current (10/350 µs) [L-N]/[N-PE] (I_{imp})	7.5 / 15 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	160 A gG
Type of remote signalling contact	changeover contact
Extended technical data:	
Voltage protection level [L-PE] (U_P)	2.0 kV

DEHNcharge

Prewired, two-pole combined arrester specially designed to protect large DC battery storage systems up to a system voltage of 1,500 V.



Type	DCG T1 BATT 1500 FM
Part No.	**900 095** NEW
SPD based on IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage DC [DC+/DC-] (U_C)	≤ 1500 V
Max. continuous operating voltage (DC) [(DC+/DC-) --> PE] (U_C)	≤ 750 V
Short-circuit withstand capability (t ≤ 5.83 ms) (I_{SCCR})	100 kA
Total discharge current (10/350 µs) [DC+/DC- -> PE] (I_{total})	10 kA
Lightning impulse current (10/350 µs) [DC+ -> PE/DC- -> PE] (I_{imp})	5 kA
Voltage protection level [(DC+/DC-) -> PE] (U_P)	< 3 kV
Voltage protection level [DC+ -> DC-] (U_P)	< 6 kV
Type of remote signalling contact	Changeover contact

DEHNcombo ... for PV Systems

Prewired two-pole combined lightning current and surge arrester with three-step d.c. switching device for use in PV systems up to 1500 V.

DEHNcombo YPV ...

Combined lightning current and surge arrester for use in photovoltaic power supply systems up to 1500 V d.c.



Type DCB YPV ...	1200	1500
Part No.	**900 070**	**900 071**
SPD according to EN 61643-31 / IEC 61643-31	type 1 + type 2 / class I + class II	type 1 + type 2 / class I + class II
Max. PV voltage [DC+ -> DC-] (U_{CPV})	≤ 1200 V	≤ 1500 V
Short-circuit current rating (I_{SCPV})	10 kA	10 kA
Total discharge current (10/350 µs) [DC+/DC- -> PE] (I_{total})	12.5 kA	12.5 kA
Lightning impulse current (10/350 µs) [DC+ -> PE/DC- -> PE] (I_{imp})	6.25 kA	6.25 kA
Voltage protection level [(DC+/DC-) -> PE] (U_P)	< 3.8 kV	< 4.5 kV
Approvals	KEMA, UL	KEMA, UL

DEHNcombo YPV ... FM

Combined lightning current and surge arrester for use in photovoltaic power supply systems up to 1500 V d.c.; with floating remote signalling contact.



Type DCB YPV ...	1200 FM	1500 FM
Part No.	**900 075**	**900 076**
SPD according to EN 61643-31 / IEC 61643-31	type 1 + type 2 / class I + class II	type 1 + type 2 / class I + class II
Max. PV voltage [DC+ -> DC-] (U_{CPV})	≤ 1200 V	≤ 1500 V
Short-circuit current rating (I_{SCPV})	10 kA	10 kA
Total discharge current (10/350 µs) [DC+/DC- -> PE] (I_{total})	12.5 kA	12.5 kA
Lightning impulse current (10/350 µs) [DC+ -> PE/DC- -> PE] (I_{imp})	6.25 kA	6.25 kA
Voltage protection level [(DC+/DC-) -> PE] (U_P)	< 3.8 kV	< 4.5 kV
Approvals	KEMA, UL	KEMA, UL
Type of remote signalling contact		Changeover contact



DEHNsolid

Coordinated and spark-gap-based single-pole lightning current arrester for busbar installation for protecting low-voltage consumer installations against surges and even direct lightning strikes with an extremely high lightning current discharge capacity up to 200 kA.

DEHNsolid 1 255

Coordinated single-pole lightning current arrester for use in 230 / 400 V systems; for installation on busbars or mounting plates.



Type	DSO 1 255
Part No.	**900 230**
Classification according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	200 kA
Voltage protection level (U_P)	≤ 2.5 kV
Max. mains-side overcurrent protection	160 A gG

DEHNbloc Maxi

Coordinated lightning current arrester (NH00 design) for protecting low-voltage consumer's installations against surges and even direct lightning strikes.

DEHNbloc Maxi NH00 255

Coordinated single-pole lightning current arrester in NH00 design for TN-C and TN-S systems with a nominal voltage of 230 / 400 V.



Type	DBM NH00 255
Part No.	**900 255**
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	25 kA
Voltage protection level (U_P)	≤ 2.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms}	315 A gG

DEHNbloc modular for North America

The modular DEHNbloc MU series are UL 1449 4th Ed. Type 1 Component Assembly and therefore ready for an easy installation into many electrical products. The very high discharge current capacity of 75 kA (10x350 µs) due to DEHN's patented lightning arrester gap technology enables the SPD to resist powerful lightning strikes and therefore protect your electrical system and gear. The DEHNbloc three-pole has also remote contacts and a visual non-power consuming status indication for each plug-in protection module.

DEHNbloc MU 3PY ... 3W+G

DIN rail mount, pluggable lightning current arrester consisting of a base part and plug-in protection modules for application in 3 Phase Wye electrical systems



Type DB MU 3PY ...	208 3W+G R	480 3W+G R
Part No.	**908 505**	**908 506**
SPD classification acc. to ANSI/UL 1449 4th Ed.	Type 1 Component Assembly SPD	Type 1 Component Assembly SPD
Max. continuous operating voltage [L-G] / [L-L] (MCOV)	150 V a.c. / 260 V a.c.	320 V a.c. / 555 V a.c.
Lightning impulse current (10x350 µs) (I_{imp})	35 kA	25 kA
Voltage protection rating [L-G] / [L-L] (VPR)	1500 V_{pk} / 2500 V_{pk}	1800 V_{pk} / 3000 V_{pk}
Approvals	UL	UL
Remote status contact	Floating (dry), Form C (SPDT)	Floating (dry), Form C (SPDT)

Protection module for DEHNbloc modular

DB M MOD ...: Spark-gap-based protection module suitable for all DEHNbloc M arresters

DB M Spark-Gap-Based Protection Module

Spark-gap-based protection module for DEHNbloc M ...



Type DB M MOD ...	150	255	320
Part No.	**961 001**	**961 002**	**961 003**
Max. continuous operating voltage (a.c.) (U_C)	150 V	255 V	320 V
Lightning impulse current (10/350 µs) (I_{imp})	35 kA	50 kA	50 kA

DEHNbloc modular

Coordinated and modular single-pole lightning current arrester for protecting low-voltage consumer´s installations against surges and even direct lightning strikes.

DEHNbloc M 1 ...

Coordinated and modular single-pole lightning current arrester with a high discharge capacity.



General technical data:			
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I		

Type DB M 1 ...	150	255	320
Part No.	961 110	961 120	961 130
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	255 V (50 / 60 Hz)	320 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	35 kA	50 kA	25 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 2.5 kV	≤ 2.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	–	500 A gG	315 A gG
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	–	315 A gG	315 A gG
Max. backup fuse (L) up to I_K = 35 kA_{rms} (t_a ≤ 0.2 s)	500 A gG	–	–
Max. backup fuse (L) up to I_K = 35 kA_{rms} (t_a ≤ 5 s)	315 A gG	–	–
Approvals	UL, CSA	VDE, KEMA, UL	UL

DEHNbloc M 1 ... FM

Coordinated and modular single-pole lightning current arrester with a high discharge capacity; with remote signalling contact for monitoring system (floating changeover contact).



General technical data:			
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I		

Type DB M 1 ...	150 FM	255 FM	320 FM
Part No.	961 115	961 125	961 135
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	255 V (50 / 60 Hz)	320 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	35 kA	50 kA	25 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 2.5 kV	≤ 2.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	–	500 A gG	315 A gG
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	–	315 A gG	315 A gG
Max. backup fuse (L) up to I_K = 35 kA_{rms} (t_a ≤ 0.2 s)	500 A gG	–	–
Max. backup fuse (L) up to I_K = 35 kA_{rms} (t_a ≤ 5 s)	315 A gG	–	–
Approvals	UL, CSA	VDE, KEMA, UL	UL

DEHNbloc Maxi 1 CI 440 / 760 FM

Coordinated lightning current arrester with integrated backup fuse for high voltage levels ensues maximum system availability. For protecting low-voltage consumer installations against surges and even direct lightning strikes.

DEHNbloc Maxi 1 CI 440 FM

Coordinated single-pole lightning current arrester with integrated backup fuse for 400 / 690 V TN systems and 400 V IT systems; with remote signalling contact for monitoring device (floating changeover contact).



Type DBM 1 CI ...	440 FM
Part No.	961 146
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Maximum continuous operating voltage (a.c.) (U_C)	440 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	35 kA
Voltage protection level (U_P)	≤ 2.5 kV
Max. mains-side overcurrent protection	not required
Type of remote signalling contact	changeover contact

DEHNbloc Maxi 1 CI 760 FM

Coordinated single-pole lightning current arrester with integrated backup fuse for 690 V TN / IT systems; with remote signalling contact for monitoring device (floating changeover contact).



Type DBM 1 CI ...	760 FM
Part No.	961 176
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Maximum continuous operating voltage (a.c.) (U_C)	760 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	35 kA
Voltage protection level (U_P)	≤ 4 kV
Max. mains-side overcurrent protection	not required
Type of remote signalling contact	changeover contact

Accessories for DEHNbloc Maxi 1 CI 440 / 760 FM

Earthing clip for three-module enclosures, single-phase, three-pole

Earthing clip for connecting the earth terminal of e.g. three SPDs with three-module enclosure to earth, with terminal.



Type	EB 1 3 10
Part No.	900 461
Dimensions	34 x 158 x 28 mm
Terminal	up to 25 mm^2

Earthing clip for three-module enclosures, single-phase, four-pole

Earthing clip for connecting the earth terminal of e.g. four SPDs with three-module enclosure to earth, with terminal.



Type	EB 1 4 13
Part No.	900 462
Dimensions	34 x 212 x 28 mm
Terminal	up to 25 mm^2

DEHNbloc Maxi 440 / 760

Coordinated lightning current arrester for high voltage levels for protecting low-voltage consumer´s installations against surges and even direct lightning strikes.

DEHNbloc Maxi 1 440 (FM)

Coordinated single-pole lightning current arrester for use in 400 / 690 V systems; FM version with floating remote signalling contact.



Type DBM 1 ...	440	440 FM
Part No.	961 140	961 145
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	440 V	440 V
Lightning impulse current (10/350 µs) (I_{imp})	35 kA	35 kA
Voltage protection level (U_P)	≤ 2.5 kV	≤ 2.5 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	500 A gG	500 A gG
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	250 A gG	250 A gG
Approvals	UL, CSA	UL, CSA
Type of remote signalling contact	–	changeover contact

DEHNbloc Maxi 1 760 FM

Coordinated single-pole lightning current arrester for use in 690 V systems; with remote signalling contact for monitoring device (floating changeover contact).



Type DBM 1 ...	760 FM
Part No.	961 175
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	760 V
Lightning impulse current (10/350 µs) (I_{imp})	25 kA
Voltage protection level (U_P)	≤ 4 kV
Max. backup fuse (L) up to I_K = 25 kA_{rms} (t_a ≤ 5 s)	250 A gG
Approvals	UL, CSA
Type of remote signalling contact	changeover contact

Accessories for DEHNbloc Maxi 440 / 760

MVS for two-module enclosures, single-phase, four-pole

Modular wiring clip for TT systems, insulated, single-phase, four-pole with connection clamp up to 50 mm².



Type	MVS 1 4 8 TT
Part No.	900 849
Dimensions	166 x 38.1 x 22 mm
Connection clamp	10–50 mm (solid or stranded) / 6–35 mm² (flexible with wire end ferrule)
Max. lightning current (10/350 µs) based on DIN EN 61643-11 (I_{imp})	100 kA

Earthing clip for two-module enclosures, single-phase, three-pole

Earthing clip for connecting the earth terminal of e.g. three SPDs with two-module enclosure to earth, with terminal.



Type	EB DG 1000 1 3
Part No.	900 411
Dimensions	34 x 112 x 28 mm
Terminal	up to 25 mm²

Earthing clip for two-module enclosures, single-phase, four-pole

Earthing clip for connecting the earth terminal of e.g. four SPDs with two-module enclosure to earth, with terminal.



Type	EB 1 4 9
Part No.	900 417
Dimensions	34 x 148 x 28 mm
Terminal	up to 25 mm²

DEHNbloc Maxi S

Coordinated lightning current arrester with integrated backup fuse for busbars for protecting low-voltage consumer´s installations against surges and even direct lightning strikes.

DEHNbloc Maxi 1 255 S

Coordinated single-pole lightning current arrester with integrated backup fuse for busbar installation in 230 / 400 V systems.



Type	DBM 1 255 S
Part No.	900 220
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	25 kA
Voltage protection level (U_P)	≤ 2.5 kV (including 80 cm connecting cable)
Max. mains-side overcurrent protection	not required
Operating state indication	by optical fibre cables via DSI E 3

DEHNsignal

Remote signalling device for Red/Line surge protective devices with interface "DEHNsignal DV..." with floating changeover contact and optical fibre output.

DEHNsignal E 3



Receiver module for optical transmission for selective operating state indication / centralised fault indication of three coordinated DEHNbloc Maxi S and, where appropriate, DEHNgap Maxi S lightning current arresters in five-wire systems.

Type	DSI E 3
Part No.	**910 631**
Supply voltage (a.c.) (U_N)	230 V
Power input (P)	< 550 mW
Backup fuse for supply voltage	16 A gG or C 16 A
Signal input	3x via optical fibre plug-in system (LWL ST DSI)
Type of remote signalling contact	floating changeover contact
Test standards	EN 61010-1:1993 and EN 61010-1/A2:1995

Accessories for DEHNsignal

LWL ST DSI



Plug for plastic optical fibre cables.

Type	LWL ST DSI
Part No.	**910 641**
Diameter	2.2 mm

LWL DSI 18M



18 metres of plastic optical fibre cable, preferably for use with DEHNbloc Maxi S.

Type	LWL DSI 18M
Part No.	**910 642**
Diameter	2.2 mm
Length	18 m

DEHNsecure modular

For protecting d.c. consumer installations against surges and even direct lightning strikes.

DEHNsecure M 1 ...



Coordinated and modular single-pole lightning current arrester for d.c. applications.

General technical data:		
Lightning impulse current (10/350 µs) (I_{imp})		25 kA
Max. mains-side overcurrent protection		250 A gG
Extended technical data:		**when used in safety lighting systems**

Type DSE ...	M 1 60	M 1 220
Part No.	**971 121**	**971 120**
SPD classification according to EN 61643-11 / IEC 61643-11	type 1 / class I	type 1 / class I
Max. continuous operating voltage (d.c.) (U_C)	60 V	220 V
Voltage protection level (U_P)	≤ 1.5 kV	≤ 2.5 kV
Approvals	UL	–
- Max. continuous operating voltage (AC) (U_C)	–	–

Type DSE ...	M 1 242
Part No.	**971 122**
SPD classification according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (d.c.) (U_C)	242 V
Voltage protection level (U_P)	≤ 2.5 kV
Approvals	–
- Max. continuous operating voltage (AC) (U_C)	255 V

DEHNsecure M 1 ... FM



Coordinated and modular single-pole lightning current arrester for d.c. applications; with remote signalling contact for monitoring device (floating changeover contact).

General technical data:		
Lightning impulse current (10/350 µs) (I_{imp})		25 kA
Max. mains-side overcurrent protection		250 A gG
Type of remote signalling contact		**changeover contact**
Extended technical data:		**when used in safety lighting systems**

Type DSE ...	M 1 60 FM	M 1 220 FM
Part No.	**971 126**	**971 125**
SPD classification according to EN 61643-11 / IEC 61643-11	type 1 / class I	type 1 / class I
Max. continuous operating voltage (d.c.) (U_C)	60 V	220 V
Voltage protection level (U_P)	≤ 1.5 kV	≤ 2.5 kV
Approvals	UL	–
- Max. continuous operating voltage (AC) (U_C)	–	–

Type DSE ...	M 1 242 FM
Part No.	**971 127**
SPD classification according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (d.c.) (U_C)	242 V
Voltage protection level (U_P)	≤ 2.5 kV
Approvals	–
- Max. continuous operating voltage (AC) (U_C)	255 V

… – Type 1 for d.c. Applications

DEHNsecure M 2P … (FM)

Coordinated and modular two-pole lightning current arrester for d.c. applications up to 60 V (1+1 configuration); FM version with floating remote signalling contact.



Type DSE …	M 2P 60	M 2P 60 FM
Part No.	**971 221**	**971 226**
SPD classification according to EN 61643-11 / IEC 61643-11	type 1 / class I	type 1 / class I
Max. continuous operating voltage (d.c.) (U_C)	60 V	60 V
Lightning impulse current (10/350 µs) (DC+/DC- -> DC-/DC+) / (DC-/DC+ -> ⏚) (I_{imp})	25 / 50 kA	25 / 50 kA
Voltage protection level (DC+/DC- -> DC-/DC+) / (DC-/DC+ -> ⏚) (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	250 A gG	250 A gG
Approvals	UL	UL
Type of remote signalling contact	–	changeover contact

DEHNsecure NG 2P 60 FM

Coordinated and modular two-pole lightning current arrester for DC applications up to 60 V (1+1 configuration); FM version with floating remote signalling contact.



Type DSE …	NG 2P 60 FM
Part No.	**971 222**
SPD classification according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (d.c.) (U_C)	60 V
Lightning impulse current (10/350 µs) (DC+/DC- -> DC-/DC+) / (DC-/DC+ -> ⏚) (I_{imp})	25 / 50 kA
Voltage protection level (DC+/DC- -> DC-/DC+) / (DC-/DC+ -> ⏚) (U_P)	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	250 A gG
Type of remote signalling contact	changeover contact

Protection module for DEHNsecure modular

DSE MOD …: Spark-gap-based protection module for all devices of the modular DEHNsecure series.

DSE M Spark-Gap-Based Protection Module

Spark-gap-based protection module



General technical data:			
Lightning impulse current (10/350 µs) (I_{imp})	25 kA		
Type DSE MOD …	**60**	**220**	**242**
Part No.	**971 001**	**971 002**	**971 003**
Max. continuous operating voltage (d.c.) (U_C)	60 V	220 V	242 V

DSE PE Spark-Gap-Based Protection Module

Spark-gap-based protection module



Type DSE MOD …	PE 60
Part No.	**971 010**
Max. continuous operating voltage (d.c.) (U_C)	60 V
Lightning impulse current (10/350 µs) (I_{imp})	50 kA

DSE MOD 60

Spark-gap-based protection module



Type DSE MOD …	NG 2P 60
Part No.	**971 004**
Max. continuous operating voltage (d.c.) (U_C)	60 V
Lightning impulse current (10/350 µs) (I_{imp})	25 kA

Lightning Current Arresters – Type 1



DEHNbloc

Lightning current arrester for protecting low-voltage consumer's installations against surges and even direct lightning strikes.

DEHNbloc H

Modular single-pole lightning current arrester with a high discharge capacity for use in 230 / 400 V systems.



Type	DBH M 1 255
Part No.	**961 122**
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	50 kA
Voltage protection level (U_P)	≤ 4 kV
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 0.2 s)	500 A gG
Max. backup fuse (L) up to I_K = 50 kA_{rms} (t_a ≤ 5 s)	315 A gG

Accessories for DEHNbloc

DB H Spark-Gap-Based Protection Module

Spark-gap-based protection module



Type	DBH MOD 255
Part No.	**961 022**
Max. continuous operating voltage (a.c.) (U_C)	255 V



DEHNgap

N-PE lightning current arrester for protecting low-voltage consumer's installations against surges and even direct lightning strikes, particularly for use in TT systems.

DEHNgap M 255 (FM)

Coordinated and modular single-pole N-PE lightning current arrester; FM version with floating remote signalling contact.



Type	DGP M 255	DGP M 255 FM
Part No.	961 101	961 105
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	100 kA	100 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.5 kV
Approvals	VDE, KEMA, UL	VDE, KEMA, UL
Type of remote signalling contact	–	changeover contact

DEHNgap Maxi 1 255 S

Coordinated single-pole N-PE lightning current arrester for busbars.



Type	DGPM 1 255 S
Part No.	900 050
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	100 kA
Voltage protection level (U_P)	≤ 2.5 kV (including 80 cm connecting cable)
Operating state monitoring	via DEHNsignal DSI E 3

DEHNgap Maxi 1 255 (FM)

Coordinated single-pole N-PE lightning current arrester; FM version with floating remote signalling contact.



Type	DGPM 1 255	DGPM 1 255 FM
Part No.	961 180	961 185
SPD according to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II	type 1 + type 2 / class I + class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	100 kA	100 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.5 kV
Type of remote signalling contact	–	changeover contact

DEHNgap Maxi 440 (FM)

Coordinated single-pole N-PE lightning current arrester; FM version with floating remote signalling contact.



Type	DGPM 440	DGPM 440 FM
Part No.	961 160	961 165
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	440 V (50 / 60 Hz)	440 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	100 kA	100 kA
Voltage protection level (U_P)	≤ 2.5 kV	≤ 2.5 kV
Approvals	UL	UL
Type of remote signalling contact	–	changeover contact

DEHNgap H M 255

Modular single-pole N-PE lightning current arrester.



Type	DGPH M 255
Part No.	961 102
SPD according to EN 61643-11 / IEC 61643-11	type 1 / class I
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Lightning impulse current (10/350 µs) (I_{imp})	100 kA
Voltage protection level (U_P)	≤ 4 kV

Protection module for DEHNgap modular

DGP M ...: Spark-gap-based protection module for all devices of the modular DEHNgap M series

DGP M – 100 kA N-PE Spark-Gap-Based Protection Module

N-PE spark-gap-based protection module for all devices of the modular DEHNgap M family.



Type	DGP M MOD 255
Part No.	961 010
Max. continuous operating voltage (a.c.) (U_C)	255 V
Lightning impulse current (10/350 µs) (I_{imp})	100 kA

DGPH M – 100 kA N-PE Spark-Gap-Based Protection Module

N-PE spark-gap-based protection module for all devices of the modular DEHNgap H M family.



Type	DGPH MOD 255
Part No.	961 020
Max. continuous operating voltage (a.c.) (U_C)	255 V
Lightning impulse current (10/350 µs) (I_{imp})	100 kA



DEHNguard modular with Advanced Circuit Interruption (Safe Dimensioning)

Modular multipole surge arrester with new "Advanced Circuit Interruption" (ACI) technology in the protection module consisting of a switch / spark gap combination. For protecting low-voltage consumer installations against surges.

DEHNguard MP TNS ACI ... FM

Modular surge arrester with Advanced Circuit Interruption (ACI) for TN-S systems.



Type DG ...	MP TNS ACI 275 FM
Part No.	**942 440** NEW
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage AC [L-PE] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Voltage protection level [L-PE] / [N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Additional external fuse	no
Temporary overvoltage (TOV) (U_T) – Characteristic	335 V / 5 sec. – withstand
Temporary overvoltage (TOV) (U_T) – Characteristic	440 V / 120 min. – withstand
Leakage current	no leakage current
Approvals	KEMA, VDE

DEHNguard MP TT ACI ... FM

Modular surge arrester with Advanced Circuit Interruption (ACI) for TT and TN-S systems (3+1 configuration).



Type DG ...	MP TT ACI 275 FM
Part No.	**942 341** NEW
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	20 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	40 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	40 kA
Voltage protection level [L-N] / [N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Additional external fuse	no
Temporary overvoltage (TOV) [L-N] (U_T) – Characteristic	335 V / 5 sec. – withstand
Temporary overvoltage (TOV) [L-N] (U_T) – Characteristic	440 V / 120 min. – withstand
Temporary overvoltage (TOV) [N-PE] (U_T) – Characteristic	1200 V / 200 ms – withstand
Leakage current	no leakage current
Approvals	KEMA, VDE

DEHNguard M TNC ACI 275 FM

Modular surge arrester with Advanced Circuit Interruption (ACI) for TN-C systems.



Type DG ...	M TNC ACI 275 FM
Part No.	**952 330**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Voltage protection level (U_P)	≤ 1.5 kV
Additional external fuse	not required
Temporary overvoltage (TOV) (U_T) – Characteristic	440 V / 120 min. – withstand
Leakage current	no leakage current
Approvals	KEMA

DEHNguard M TNS ACI 275 FM

Modular surge arrester with Advanced Circuit Interruption (ACI) for TN-S systems.



Type DG ...	M TNS ACI 275 FM
Part No.	**952 440**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage AC [L-PE] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Voltage protection level [L-PE] / [N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Additional external fuse	not required
Temporary overvoltage (TOV) (U_T) – Characteristic	440 V / 120 min. – withstand
Leakage current	no leakage current
Approvals	KEMA

DEHNguard M TT ACI ... FM

Modular surge arrester with Advanced Circuit Interruption (ACI) for TT and TN-S systems (3+1 configuration).



Type DG ...	M TT ACI 275 FM	M TT ACI 385 FM
Part No.	**952 341**	**952 342**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	20 kA	20 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	–	40 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	–	120 kA
Voltage protection level [L-N] / [N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Additional external fuse	not required	not required
Temporary overvoltage (TOV) [L-N] (U_T) – Characteristic	440 V / 120 min. – withstand	440 V / 120 min. – withstand
Temporary overvoltage (TOV) [N-PE] (U_T) – Characteristic	1200 V / 200 ms – withstand	1200 V / 200 ms – withstand
Leakage current	no leakage current	no leakage current
Approvals	KEMA	KEMA

DEHNguard M TN ACI 275 FM

Modular surge arrester with Advanced Circuit Interruption (ACI) for single-phase 230 V-TN systems.



Type DG ...	M TN ACI 275 FM
Part No.	**952 220**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage AC [L-PE] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Voltage protection level [L-PE] / [N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Additional external fuse	not required
Temporary overvoltage (TOV) (U_T) – Characteristic	440 V / 120 min. – withstand
Leakage current	no leakage current
Approvals	KEMA

DEHNguard M TT 2P ACI ... FM

Modular surge arrester with Advanced Circuit Interruption (ACI) for single-phase 230 V-TT and TN systems (1+1 configuration).



Type DG ...	M TT 2P ACI 275 FM	M TT 2P ACI 385 FM
Part No.	**952 121**	**952 122**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	20 kA	20 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	–	40 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	–	120 kA
Voltage protection level [L-N] / [N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Additional external fuse	not required	not required
Temporary overvoltage (TOV) [L-N] (U_T) – Characteristic	440 V / 120 min. – withstand	440 V / 120 min. – withstand
Temporary overvoltage (TOV) [N-PE] (U_T) – Characteristic	1200 V / 200 ms – withstand	1200 V / 200 ms – withstand
Leakage current	no leakage current	no leakage current
Approvals	KEMA	KEMA

DEHNguard S ACI ... FM

Pluggable single-pole surge arrester consisting of a base part and plug-in protection module; with Advanced Circuit Interruption (ACI).



Type DG ...	S ACI 275 FM	S ACI 385 FM
Part No.	**952 100**	**952 113**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	275 V (50 / 60 Hz)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	–	40 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.5 kV
Additional external fuse	not required	not required
Temporary overvoltage (TOV) (U_T) – Characteristic	440 V / 120 min. – withstand	440 V / 120 min. – withstand
Leakage current	no leakage current	no leakage current
Approvals	KEMA	KEMA

Accessories for DEHNguard modular with Advanced Circuit Interruption (Safe Dimensioning)

Switch / Spark Gap Protection Module for DEHNguard ACI



Type	DG MOD ACI 275	DG MOD ACI 385
Part No.	**952 024**	**952 028**
Max. continuous operating voltage (a.c.) (U_C)	275 V	385 V

Spark-gap Based Protection Module for DEHNguard M ACI



Type	DG MOD A NPE
Part No.	**952 022**
Max. continuous operating voltage (a.c.) (U_C)	275 V

N-PE Spark-Gap-Based Protection Module for DEHNguard M ACI



Type	DG MOD H A NPE
Part No.	**952 083**
Max. continuous operating voltage (a.c.) (U_C)	275 V

DEHNguard SE CI with Integrated Backup Fuse

For industrial applications with a rated voltage of 400/690 V. Combines surge protection and backup fuse in a single component. Available in 2 versions: industry and wind power.

DEHNguard SE CI 440 FM

Pluggable single-pole surge arrester comprising a base part and a plug-in protection module; with integrated backup fuse and remote signalling contact for monitoring unit (floating changeover contact).



Type DG SE CI ...	440 FM
Part No.	**952 920**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	440 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	12.5 kA
Voltage protection level (U_P)	≤ 2 kV
Max. mains-side overcurrent protection	not required
Type of remote signalling contact	changeover contact

DEHNguard SE CI WE 440 FM

Pluggable single-pole surge arrester with a rated varistor voltage U_{mov} = 750 V a.c.; comprising a base part and a plug-in protection module; with integrated backup fuse and remote signalling contact for monitoring unit (floating changeover contact).



Type DG SE CI ...	WE 440 FM
Part No.	**952 923**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	440 V (50 / 60 Hz)
Rated varistor voltage (a.c.) (U_{mov})	750 V
Nominal discharge current (8/20 µs) (I_n)	12.5 kA
Voltage protection level (U_P)	≤ 3 kV
Max. mains-side overcurrent protection	not required
Type of remote signalling contact	changeover contact

Accessories for DEHNguard SE CI with Integrated Backup Fuse

Varistor-based Protection Module for DEHNguard SE CI (WE)



Type	DG MOD E CI 440	DG MOD E CI WE 440
Part No.	**952 926**	**952 927**
Max. continuous operating voltage (d.c.) (U_C)	440 V	440 V
Rated varistor voltage (a.c.) (U_{mov})	440 V	750 V

DEHNguard modular

Modular multipole surge arrester with a functional design. For protecting low-voltage consumer´s installations against surges.

DEHNguard MP TNS ...

Modular surge arrester for use in TN-S systems.



Type DG ...	MP TNS 275
Part No.	**942 400** NEW
SPD according to EN 61643-11 / IEC 61643-11	type 2 + type 3 / class II + class III
Max. continuous operating voltage (a.c.) (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Approvals	KEMA, VDE

DEHNguard MP TNS ... FM

Modular surge arrester for use in TN-S systems; with floating remote signalling contact.



Type DG ...	MP TNS 275 FM
Part No.	**942 405** NEW
SPD according to EN 61643-11 / IEC 61643-11	type 2 + type 3 / class II + class III
Max. continuous operating voltage (a.c.) (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Approvals	KEMA, VDE
Type of remote signalling contact	changeover contact

DEHNguard MP TT ...

Modular surge arrester for use in TT and TN-S systems (3+1 configuration).



Type DG ...	MP TT 275
Part No.	**942 310** NEW
SPD according to EN 61643-11 / IEC 61643-11	type 2 + type 3 / class II + class III
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Approvals	KEMA, VDE

DEHNguard MP TT ... FM

Modular surge arrester for use in TT and TN-S systems (3+1 configuration); with floating remote signalling contact.



Type DG ...	MP TT 275 FM
Part No.	**942 315** NEW
SPD according to EN 61643-11 / IEC 61643-11	type 2 + type 3 / class II + class III
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV
Approvals	KEMA, VDE
Type of remote signalling contact	changeover contact

DEHNguard M TNC ...

Modular surge arrester for use in TN-C systems (3+0 configuration).



General technical data:		
SPD according to EN 61643-11 / IEC 61643-11		type 2 / class II
Max. discharge current (8/20 µs) (I_{max})		40 kA
Max. mains-side overcurrent protection		125 A gG

Type DG ...	M TNC 150	M TNC 275
Part No.	952 313	952 300
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Voltage protection level (U_P)	≤ 0.7 kV	≤ 1.5 kV
Approvals	KEMA, UL	KEMA, VDE, UL

Type DG ...	M TNC 385	M TNC 440
Part No.	952 314	952 303
Max. continuous operating voltage (a.c.) (U_C)	385 V (50 / 60 Hz)	440 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Voltage protection level (U_P)	≤ 1.75 kV	≤ 2 kV
Approvals	KEMA, UL	KEMA, UL

DEHNguard M TNC ... FM

Modular surge arrester for use in TN-C systems (3+0 configuration); with floating changeover contact.



General technical data:		
SPD according to EN 61643-11 / IEC 61643-11		type 2 / class II
Max. discharge current (8/20 µs) (I_{max})		40 kA
Max. mains-side overcurrent protection		125 A gG
Type of remote signalling contact		changeover contact

Type DG ...	M TNC 150 FM	M TNC 275 FM
Part No.	952 318	952 305
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Voltage protection level (U_P)	≤ 0.7 kV	≤ 1.5 kV
Approvals	KEMA, UL	KEMA, VDE, UL

Type DG ...	M TNC 385 FM	M TNC 440 FM
Part No.	952 319	952 308
Max. continuous operating voltage (a.c.) (U_C)	385 V (50 / 60 Hz)	440 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Voltage protection level (U_P)	≤ 1.75 kV	≤ 2 kV
Approvals	KEMA, UL	KEMA, UL

DEHNguard M TNS ...

Modular surge arrester for use in TN-S systems (4+0 configuration).



General technical data:		
SPD according to EN 61643-11 / IEC 61643-11		type 2 / class II
Max. discharge current (8/20 µs) (I_{max})		40 kA
Max. mains-side overcurrent protection		125 A gG

Type DG ...	M TNS 150	M TNS 275
Part No.	952 403	952 400
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 0.7 / ≤ 0.7 kV	≤ 1.5 / ≤ 1.5 kV
Approvals	KEMA, UL	KEMA, VDE, UL

Type DG ...	M TNS 385
Part No.	952 404
Max. continuous operating voltage (a.c.) (U_C)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.75 / ≤ 1.75 kV
Approvals	KEMA, UL

DEHNguard M TNS ... FM

Modular surge arrester for use in TN-S systems (4+0 configuration); with floating changeover contact.



General technical data:		
SPD according to EN 61643-11 / IEC 61643-11		type 2 / class II
Max. discharge current (8/20 µs) (I_{max})		40 kA
Max. mains-side overcurrent protection		125 A gG
Type of remote signalling contact		changeover contact

Type DG ...	M TNS 150 FM	M TNS 275 FM
Part No.	952 408	952 405
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 0.7 / ≤ 0.7 kV	≤ 1.5 / ≤ 1.5 kV
Approvals	KEMA, UL	KEMA, VDE, UL

Type DG ...	M TNS 385 FM
Part No.	952 409
Max. continuous operating voltage (a.c.) (U_C)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 1.75 / ≤ 1.75 kV
Approvals	KEMA, UL

DEHNguard M H TT ... (FM)

Modular surge arrester with a high total discharge capacity in the N-PE path for TT and TN-S systems (3+1 configuration); meets increased safety requirements by higher discharge capability; with floating remote signalling contact.



Type DG ...	M H TT 275	M H TT 275 FM
Part No.	**952 381**	**952 385**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	20 kA	20 kA
Nominal discharge current (8/20 µs) [N-PE] (I_n)	80 kA	80 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	40 kA	40 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	120 kA	120 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	KEMA	KEMA
Type of remote signalling contact	–	changeover contact

DEHNguard M TT ...

Modular surge arrester for use in TT and TN-S systems (3+1 configuration).



General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. mains-side overcurrent protection	125 A gG

Type DG ...	M TT 150	M TT 275
Part No.	**952 323**	**952 310**
Max. continuous operating voltage (a.c.) [L-N] (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 0.7 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Approvals	–	KEMA, VDE, UL

Type DG ...	M TT 320	M TT 385
Part No.	**952 320**	**952 311**
Max. continuous operating voltage (a.c.) [L-N] (U_C)	320 V (50 / 60 Hz)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.75 / ≤ 1.5 kV
Approvals	KEMA	KEMA, UL

DEHNguard M TT ... FM

Modular surge arrester for use in TT and TN-S systems (3+1 configuration); with floating remote signalling contact.



General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. mains-side overcurrent protection	125 A gG
Type of remote signalling contact	changeover contact

Type DG ...	M TT 150 FM	M TT 275 FM
Part No.	**952 328**	**952 315**
Max. continuous operating voltage (a.c.) [L-N] (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 0.7 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Approvals	UL	KEMA, VDE, UL

Type DG ...	M TT 320 FM	M TT 385 FM
Part No.	**952 325**	**952 316**
Max. continuous operating voltage (a.c.) [L-N] (U_C)	320 V (50 / 60 Hz)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.75 / ≤ 1.5 kV
Approvals	KEMA	KEMA, UL

Type DG ...	M TT 385/305 FM
Part No.	**952 332** NEW
Max. continuous operating voltage (a.c.) [L-N] (U_C)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.75 / ≤ 1.5 kV
Approvals	KEMA, UL

DEHNguard M TN ...

Modular surge arrester for use in single-phase TN systems (2+0 configuration).



Type DG ...	M TN 150	M TN 275
Part No.	**952 201**	**952 200**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 0.7 / ≤ 0.7 kV	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	KEMA, UL	KEMA, VDE, UL

DEHNguard M TN ... FM

Modular surge arrester for use in single-phase TN systems (2+0 configuration); with floating remote signalling contact.



Type DG ...	M TN 150 FM	M TN 275 FM
Part No.	952 206	952 205
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Voltage protection level [L-PE]/[N-PE] (U_P)	≤ 0.7 / ≤ 0.7 kV	≤ 1.5 / ≤ 1.5 kV
Max. mains-side over-current protection	125 A gG	125 A gG
Approvals	KEMA, UL	KEMA, VDE, UL
Type of remote signalling contact	changeover contact	changeover contact

DEHNguard M H TT 2P ... (FM)

Modular surge arrester with a high total discharge capacity in the N-PE path for TT and TN systems (1+1 configuration); meets increased safety requirements by higher discharge capability; with floating remote signalling contact.



Type DG ...	M H TT 2P 275	M H TT 2P 275 FM
Part No.	952 181	952 185
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	20 kA	20 kA
Nominal discharge current (8/20 µs) [N-PE] (I_n)	80 kA	80 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	40 kA	40 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	120 kA	120 kA
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	KEMA	KEMA
Type of remote signalling contact	–	changeover contact

DEHNguard M TT 2P ...

Modular surge arrester for use in single-phase TT and TN systems (1+1 configuration).



General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. mains-side overcurrent protection	125 A gG

Type DG ...	M TT 2P 275	M TT 2P 320
Part No.	952 110	952 130
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)	320 V (50 / 60 Hz)
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Approvals	KEMA, VDE, UL	KEMA

Type DG ...	M TT 2P 385
Part No.	952 111
Max. continuous operating voltage (a.c.) [L-N] (U_C)	385 V (50 / 60 Hz)
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.75 / ≤ 1.5 kV
Approvals	KEMA

DEHNguard M TT 2P ... FM

Modular surge arrester for use in single-phase TT and TN systems (1+1 configuration); with floating remote signalling contact.



General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. mains-side overcurrent protection	125 A gG
Type of remote signalling contact	changeover contact

Type DG ...	M TT 2P 275 FM	M TT 2P 320 FM
Part No.	952 115	952 135
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)	320 V (50 / 60 Hz)
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.5 / ≤ 1.5 kV	≤ 1.5 / ≤ 1.5 kV
Approvals	KEMA, VDE, UL	KEMA

Type DG ...	M TT 2P 385 FM
Part No.	952 116
Max. continuous operating voltage (a.c.) [L-N] (U_C)	385 V (50 / 60 Hz)
Voltage protection level [L-N]/[N-PE] (U_P)	≤ 1.75 / ≤ 1.5 kV
Approvals	KEMA

Accessories for DEHNguard modular

N-PE Spark-Gap-Based Protection Module for DEHNguard M TT ...

N-PE spark-gap-based protection module for two-pole and four-pole DEHNguard DG M TT ... surge arresters.



Type	DG MOD NPE
Part No.	952 050
Max. continuous operating voltage (a.c.) (U_C)	255 V

DEHNguard M WE ... (FM)

Modular surge arrester (3+0 configuration) with a rated varistor voltage U_{mov} = 750 V a.c.; FM version with floating remote signalling contact.



Type DG ...	M WE 600	M WE 600 FM
Part No.	**952 302**	**952 307**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	600 V (50 / 60 Hz)	600 V (50 / 60 Hz)
Rated varistor voltage (U_{mov})	750 V	750 V
Nominal discharge current (8/20 µs) (I_n)	15 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	25 kA	25 kA
Voltage protection level (U_P)	≤ 3 kV	≤ 3 kV
Max. mains-side over-current protection	100 A gG	100 A gG
Approvals	KEMA, UL	KEMA, UL
Type of remote signalling contact	–	changeover contact

Accessories for DEHNguard modular

Varistor-Based Protection Module

Varistor-based protection module for DEHNguard M ... and DEHNguard S ... surge arresters.



Type	DG MOD 150	DG MOD 275
Part No.	**952 012**	**952 010**
Max. continuous operating voltage (a.c.) (U_C)	150 V	275 V

Type	DG MOD 320	DG MOD 385
Part No.	**952 013**	**952 014**
Max. continuous operating voltage (a.c.) (U_C)	320 V	385 V

Type	DG MOD 440
Part No.	**952 015**
Max. continuous operating voltage (a.c.) (U_C)	440 V

Varistor-Based Protection Module for DEHNguard M (S) WE

Varistor-based protection module for DEHNguard M WE ... and DEHNguard S WE ... surge arresters with a rated varistor voltage U_{mov} = 750 V a.c.



Type	DG MOD 750
Part No.	**952 017**
Max. continuous operating voltage (a.c.) (U_C)	600 V

N-PE Spark-Gap-Based Protection Module for DEHNguard M H TT ...

N-PE spark-gap-based protection module with a high discharge capacity for two-pole and four-pole DEHNguard DG M H TT ... surge arresters.



Type	DG MOD H NPE
Part No.	**952 081**
Max. continuous operating a.c. voltage (U_C)	255 V

DEHNguard 5 kA

Multipole surge arrester with a space-saving design. For protecting low voltage consumer's installations against surges. For installation in conformity with the lightning protection zone concept at the boundaries from 0_B – 1 and higher. Type 2 SPD according to EN 61643-11

DEHNguard TT 2P 5 275

Compact surge arrester for single-phase TT and TN systems (1+1 circuit)



Type DG TT ...	2P 5 275
Part No.	**900 450**
SPD according to EN 61643-11	type 2
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Max. continuous operating voltage (a.c.) [N-PE] (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	5 kA
Nominal discharge current (8/20 µs) [N-PE] (I_n)	20 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	15 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	40 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	MCB C 63 A

DEHNguard TT 5 275

Compact surge arrester for TT and TN-S systems (3+1 circuit)



Type DG TT ...	5 275
Part No.	**900 455**
SPD according to EN 61643-11	type 2
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Max. continuous operating voltage (a.c.) [N-PE] (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	5 kA
Nominal discharge current (8/20 µs) [N-PE] (I_n)	20 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	15 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	40 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	MCB C 63 A

DEHNguard TT 2P 5 275 NL

Compact surge arrester for single-phase TT and TN systems (1+1 circuit)



Type DG TT ...	2P 5 275 NL
Part No.	**900 458**
SPD according to EN 61643-11	type 2
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Max. continuous operating voltage (a.c.) [N-PE] (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	5 kA
Nominal discharge current (8/20 µs) [N-PE] (I_n)	20 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	15 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	40 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	MCB C 63 A

DEHNguard TT 5 275 NL

Compact surge arrester for TT and TN-S systems (3+1 circuit)



Type DG TT ...	5 275 NL
Part No.	**900 459**
SPD according to EN 61643-11	type 2
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Max. continuous operating voltage (a.c.) [N-PE] (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) [L-N] (I_n)	5 kA
Nominal discharge current (8/20 µs) [N-PE] (I_n)	20 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	15 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	40 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	MCB C 63 A

DEHNguard S

Modular single-pole surge arrester with a functional design.
For protecting low-voltage consumer's installations against surges.

DEHNguard S ...

Pluggable single-pole surge arrester consisting of a base part and a plug-in protection module.



General technical data:		
SPD according to EN 61643-11 / IEC 61643-11		type 2 / class II

Type DG S ...	48	75
Part No.	952 078	952 071
Max. continuous operating voltage (a.c.) (U_C)	48 V (50 / 60 Hz)	75 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	7.5 kA	10 kA
Max. discharge current (8/20 µs) (I_{max})	25 kA	40 kA
Voltage protection level (U_P)	≤ 0.33 kV	≤ 0.4 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	–	KEMA, VDE, UL, CSA

Type DG S ...	150	275
Part No.	952 072	952 070
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Voltage protection level (U_P)	≤ 0.7 kV	≤ 1.5 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	KEMA, VDE, UL, CSA	KEMA, VDE, UL,CSA

Type DG S ...	320	385
Part No.	952 073	952 074
Max. continuous operating voltage (a.c.) (U_C)	320 V (50 / 60 Hz)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.75 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	KEMA, VDE, UL, CSA	KEMA, VDE, UL, CSA

Type DG S ...	440	600
Part No.	952 075	952 076
Max. continuous operating voltage (a.c.) (U_C)	440 V (50 / 60 Hz)	600 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	30 kA
Voltage protection level (U_P)	≤ 2 kV	≤ 2.5 kV
Max. mains-side overcurrent protection	125 A gG	100 A gG
Approvals	KEMA, VDE, UL, CSA	KEMA, VDE, UL, CSA

DEHNguard S ... FM

Pluggable single-pole surge arrester consisting of a base part and a plug-in protection module; with floating remote signalling contact.



General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Type of remote signalling contact	changeover contact

Type DG S ...	48 FM	75 FM
Part No.	952 098	952 091
Max. continuous operating voltage (a.c.) (U_C)	48 V (50 / 60 Hz)	75 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	7.5 kA	10 kA
Max. discharge current (8/20 µs) (I_{max})	25 kA	40 kA
Voltage protection level (U_P)	≤ 0.33 kV	≤ 0.4 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	–	KEMA, VDE, UL, CSA
Stock No.	–	–

Type DG S ...	150 FM	275 FM
Part No.	952 092	952 090
Max. continuous operating voltage (a.c.) (U_C)	150 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Voltage protection level (U_P)	≤ 0.7 kV	≤ 1.5 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	KEMA, VDE, UL, CSA	KEMA, VDE, UL, CSA
Stock No.	–	–

Type DG S ...	320 FM	385 FM
Part No.	952 093	952 094
Max. continuous operating voltage (a.c.) (U_C)	320 V (50 / 60 Hz)	385 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.75 kV
Max. mains-side overcurrent protection	125 A gG	125 A gG
Approvals	KEMA, VDE, UL, CSA	KEMA, VDE, UL, CSA
Stock No.	–	5920-12-384-8848

Type DG S ...	440 FM	600 FM
Part No.	952 095	952 096
Max. continuous operating voltage (a.c.) (U_C)	440 V (50 / 60 Hz)	600 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	30 kA
Voltage protection level (U_P)	≤ 2 kV	≤ 2.5 kV
Max. mains-side overcurrent protection	125 A gG	100 A gG
Approvals	KEMA, VDE, UL, CSA	KEMA, VDE, UL, CSA
Stock No.	–	–

DEHNguard S WE 600 (FM)



Pluggable single-pole surge arrester with a rated varistor voltage U_{mov} = 750 V a.c., consisting of base part and a plug-in protection module; FM version with floating remote signalling contact.

Type DG S ...	WE 600	WE 600 FM
Part No.	952 077	952 097
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	600 V (50 / 60 Hz)	600 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	25 kA	25 kA
Voltage protection level (U_P)	≤ 3 kV	≤ 3 kV
Max. mains-side overcurrent protection	100 A gG	100 A gG
Approvals	KEMA, UL, CSA	KEMA, UL, CSA
Type of remote signalling contact	–	changeover contact

Accessories for DEHNguard S

Varistor-Based Protection Module



Varistor-based protection module for DEHNguard M ... and DEHNguard S ... surge arresters.

Type	DG MOD 48	DG MOD 75
Part No.	952 018	952 011
Max. continuous operating voltage (a.c.) (U_C)	48 V	75 V

Type	DG MOD 150	DG MOD 275
Part No.	952 012	952 010
Max. continuous operating voltage (a.c.) (U_C)	150 V	275 V

Type	DG MOD 320	DG MOD 385
Part No.	952 013	952 014
Max. continuous operating voltage (a.c.) (U_C)	320 V	385 V

Type	DG MOD 440	DG MOD 600
Part No.	952 015	952 016
Max. continuous operating voltage (a.c.) (U_C)	440 V	600 V

Varistor-Based Protection Module for DEHNguard M (S) WE



Varistor-based protection module for DEHNguard M WE ... and DEHNguard S WE ... surge arresters with a rated varistor voltage U_{mov} = 750 V a.c.

Type	DG MOD 750
Part No.	952 017
Max. continuous operating voltage (a.c.) (U_C)	600 V

DEHNguard S ... VA

Modular single-pole surge arrester with leakage-current-free series connection of a varistor and a spark gap. For protecting low-voltage consumer´s installations against surges.

DEHNguard S VA



Modular single-pole surge arrester with a varistor connected in series with a spark gap in the pluggable protection module.

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Nominal discharge current (8/20 µs) (I_n)	10 kA
Max. discharge current (8/20 µs) (I_{max})	20 kA
Max. mains-side overcurrent protection	100 A gG

Type DG S ...	75 VA	275 VA
Part No.	952 080	952 082
Max. continuous operating voltage (a.c.) (U_C)	75 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Voltage protection level (U_P)	≤ 1.1 kV	≤ 1.5 kV

Type DG S ...	385 VA
Part No.	952 084
Max. continuous operating voltage (a.c.) (U_C)	385 V (50 / 60 Hz)
Voltage protection level (U_P)	≤ 1.75 kV

DEHNguard S VA FM



Modular single-pole surge arrester with a varistor connected in series with a spark gap in the pluggable protection module; with floating remote signalling contact.

General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Nominal discharge current (8/20 µs) (I_n)	10 kA
Max. discharge current (8/20 µs) (I_{max})	20 kA
Max. mains-side overcurrent protection	100 A gG

Type DG S ...	75 VA FM	275 VA FM
Part No.	952 085	952 087
Max. continuous operating voltage (a.c.) (U_C)	75 V (50 / 60 Hz)	275 V (50 / 60 Hz)
Voltage protection level (U_P)	≤ 1.1 kV	≤ 1.5 kV

Type DG S ...	385 VA FM
Part No.	952 089
Max. continuous operating voltage (a.c.) (U_C)	385 V (50 / 60 Hz)
Voltage protection level (U_P)	≤ 1.75 kV

Accessories for DEHNguard S ... VA

Varistor-Based Protection Module for DEHNguard S ... VA



Protection module for DEHNguard S ... VA arresters comprising a varistor connected in series with a spark gap.

Type	DG MOD 75 VA	DG MOD 275 VA
Part No.	952 025	952 027
Max. continuous operating voltage (a.c.) (U_C)	75 V	275 V

Type	DG MOD 385 VA
Part No.	952 029
Max. continuous operating voltage (a.c.) (U_C)	385 V

DEHNguard SE H ... FM

Single-pole surge arrester with integrated "Lifetime Indication" early warning system.
For protecting low-voltage consumer's installations against surges.

DEHNguard SE H 1000 FM



Pluggable single-pole surge arrester comprising a base part and a plug-in protection module; with floating remote signalling contact.

Type DG SE H 1000 ...	FM
Part No.	**952 938**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	1000 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Voltage protection level (U_P)	≤ 4.5 kV
Max. mains-side overcurrent protection	100 A gG
Operating state / fault indication	green / red
Type of remote signalling contact	changeover contact

DEHNguard SE H 1000 VA FM



Pluggable single-pole surge arrester comprising a base part and a plug-in protection module; with floating remote signalling contact. Series connection of a varistor and a gas discharge tube.

Type DG SE H 1000 ...	VA FM
Part No.	**952 940**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	1000 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	15 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Voltage protection level (U_P)	≤ 5 kV
Max. mains-side overcurrent protection	100 A gG
Operating state / fault indication	green / red
Approvals	UL
Type of remote signalling contact	changeover contact
Supplementary data:	
- Sparkover voltage gas discharge tube (U_{agmin})	2200 V

Accessories for DEHNguard SE H ... FM

Varistor-Based Protection Module for DEHNguard SE H ... FM



Type	DG MOD E H 1000	DG MOD E H 1000 VA
Part No.	**952 908**	**952 918**
Max. continuous operating voltage (d.c.) (U_C)	1000 V	1000 V

Earthing Clip for 1.5-module Enclosures, single-phase, two-pole



Earthing clip for connecting the earth terminal of e.g. two SPDs with 1.5-module enclosure to earth, with terminal.

Type	EB 1 2 1.5
Part No.	**900 460**
Dimensions	34 x 60 x 28 mm
Terminal	up to 25 mm²

Earthing Clip for 1.5-module Enclosures, single-phase, three-pole



Earthing clip for connecting the earth terminal of e.g. three SPDs with 1.5-module enclosure to earth, with terminal.

Type	EB 1 3 1.5
Part No.	**900 418**
Dimensions	34 x 85 x 28 mm
Terminal	up to 25 mm²

Earthing Clip for 1.5-module Enclosures, single-phase, four-pole



Earthing clip for connecting the earth terminal of e.g. four SPDs with 1.5-module enclosure to earth, with terminal.

Type	EB 1 4 1.5
Part No.	**900 429**
Dimensions	34 x 112 x 28 mm
Terminal	up to 25 mm²

DEHNguard modular for North America

The pre-assembled, modular DEHNguard SU/MU devices with UL 1449 (VZCA 2 & 8) approval are the perfect choice for protecting your electrical systems and devices. The installation of the DEHNguard SU/MU does not require any additional overcurrent protection and has a short-circuit withstand capability (SCCR) of 200 kA.

DEHNguard MU 3PY ... 3W+G



DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Phase Wye electrical systems

General technical data:	
SPD as per ANSI/UL 1449	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly
Nominal discharge current (8x 20 µs) (I_n)	20 kA
Max. mains-side overcurrent protection	Not needed
Approvals	UL, CSA
Extended technical data:	
Max. discharge current (8/20) (I_{max})	50 kA

Type DG ...	MU 3PY 208 3W+G	MU 3PY 480 3W+G
Part No.	**908 300**	**908 314**
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	180 V a.c. / 360 V a.c.	385 V a.c. / 770 V a.c.
Voltage protection rating [L-G] / [L-L] (VPR)	600 V_{pk} / 1200 V_{pk}	1200 V_{pk} / 2500 V_{pk}

Type DG ...	MU 3PY 600 3W+G
Part No.	**908 301**
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	510 V a.c. / 1020 V a.c.
Voltage protection rating [L-G] / [L-L] (VPR)	1500 V_{pk} / 3000 V_{pk}

DEHNguard MU 3PY ... 3W+G R



DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Phase Wye electrical systems; has floating Form C (SPDT) remote status contacts

General technical data:	
SPD as per ANSI/UL 1449	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly
Nominal discharge current (8x 20 µs) (I_n)	20 kA
Max. mains-side overcurrent protection	Not needed
Approvals	UL, CSA
Remote status contact	Floating (dry), Form C (SPDT)
Extended technical data:	
Max. discharge current (8/20) (I_{max})	50 kA

Type DG ...	MU 3PY 208 3W+G R	MU 3PY 480 3W+G R
Part No.	908 305	908 319
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	180 V a.c. / 360 V a.c.	385 V a.c. / 770 V a.c.
Voltage protection rating [L-G] / [L-L] (VPR)	600 V_{pk} / 1200 V_{pk}	1200 V_{pk} / 2500 V_{pk}

Type DG ...	MU 3PY 600 3W+G R
Part No.	908 306
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	510 V a.c. / 1020 V a.c.
Voltage protection rating [L-G] / [L-L] (VPR)	1500 V_{pk} / 3000 V_{pk}

DEHNguard MU 3PD ... 3W+G



DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Phase Delta electrical systems

Type DG ...	MU 3PD 480 3W+G	MU 3PD 240 3W+G
Part No.	908 350	908 351
SPD as per ANSI/UL 1449	Open-Type 1 SPD	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	550 V a.c. / 1100 V a.c.	275 V a.c. / 550 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA	20 kA
Voltage protection rating [L-G] / [L-L] (VPR)	1800 V_{pk} / 3000 V_{pk}	800 V_{pk} / 1500 V_{pk}
Max. mains-side overcurrent protection	Not needed	Not needed
Approvals	UL, CSA	UL, CSA
Extended technical data:		
Max. discharge current (8/20) (I_{max})	50 kA	50 kA

DEHNguard MU 3PD ... 3W+G R



DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Phase Delta electrical systems; has floating Form C (SPDT) remote status contacts

Type DG ...	MU 3PD 480 3W+G R	MU 3PD 240 3W+G R
Part No.	908 355	908 356
SPD as per ANSI/UL 1449	Open-Type 1 SPD	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	550 V a.c. / 1100 V a.c.	275 V a.c. / 550 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA	20 kA
Voltage protection rating [L-G] / [L-L] (VPR)	1800 V_{pk} / 3000 V_{pk}	800 V_{pk} / 1500 V_{pk}
Max. mains-side overcurrent protection	Not needed	Not needed
Approvals	UL, CSA	UL, CSA
Remote status contact	Floating (dry), Form C (SPDT)	Floating (dry), Form C (SPDT)
Extended technical data:		
Max. discharge current (8/20) (I_{max})	50 kA	50 kA

DEHNguard MU 3PY ... 4W+G



DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Phase Wye Systems

General technical data:	
SPD as per ANSI/UL 1449	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly
Nominal discharge current (8x 20 µs) (I_n)	20 kA
Max. mains-side overcurrent protection	Not needed
Approvals	UL, CSA
Extended technical data:	
Max. discharge current (8/20) (I_{max})	50 kA

Type DG ...	MU 3PY 208 4W+G	MU 3PY 480 4W+G
Part No.	908 340	908 341
Max. continuous operating voltage AC [L-N] / [L-G] / [L-L] / [N-G] (MCOV)	180 V a.c. / 360 V a.c. / 360 V a.c. / 180 V a.c.	385 V a.c. / 565 V a.c. / 770 V a.c./ 180 V a.c.
Voltage protection rating [L-N] / [L-G] / [L-L] / [N-G] (VPR)	600 V_{pk} / 1200 V_{pk} / 1200 V_{pk} / 600 V_{pk}	1200 V_{pk} / 1800 V_{pk} / 2500 V_{pk} / 600 V_{pk}

Type DG ...	MU 3PY 600 4W+G
Part No.	908 342
Max. continuous operating voltage AC [L-N] / [L-G] / [L-L] / [N-G] (MCOV)	510 V a.c. / 690 V a.c. / 1020 V a.c. / 180 V a.c.
Voltage protection rating [L-N] / [L-G] / [L-L] / [N-G] (VPR)	1500 V_{pk} / 2000 V_{pk} / 3000 V_{pk} / 600 V_{pk}

DEHNguard MU 3PY ... 4W+ G R



DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Phase Wye Systems; has floating Form C (SPDT) remote status contacts

General technical data:	
SPD as per ANSI/UL 1449	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly
Nominal discharge current (8x 20 µs) (I_n)	20 kA
Max. mains-side overcurrent protection	Not needed
Approvals	UL, CSA
Remote status contact	Floating (dry), Form C (SPDT)
Extended technical data:	
Max. discharge current (8/20) (I_{max})	50 kA

Type DG ...	MU 3PY 208 4W+G R	MU 3PY 480 4W+G R
Part No.	908 345	908 346
Max. continuous operating voltage AC [L-N] / [L-G] / [L-L] / [N-G] (MCOV)	180 V a.c. / 360 V a.c. / 360 V a.c. / 180 V a.c.	385 V a.c. / 565 V a.c. / 770 V a.c. / 180 V a.c.
Voltage protection rating [L-N] / [L-G] / [L-L] / [N-G] (VPR)	600 V_{pk} / 1200 V_{pk} / 1200 V_{pk} / 600 V_{pk}	1200 V_{pk} / 1800 V_{pk} / 2500 V_{pk} / 600 V_{pk}

Type DG ...	MU 3PY 600 4W+G R
Part No.	908 347
Max. continuous operating voltage AC [L-N] / [L-G] / [L-L] / [N-G] (MCOV)	510V a.c. / 690 V a.c. / 1020 V a.c. / 180 V a.c.
Voltage protection rating [L-N] / [L-G] / [L-L] / [N-G] (VPR)	1500 V_{pk} / 2000$_{pk}$ V / 3000$_{pk}$ V / 600 V_{pk}

DEHNguard MU 3PH ... 4W+G



DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Phase High-leg Delta Systems

Type DG ...	MU 3PH 240 4W+G	MU 3PH 480 4W+G
Part No.	908 343	908 344
SPD as per ANSI/UL 1449	Open-Type 1 SPD	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-N] / [H-N] / [L-G] / [H-G] / [L-L] / [L-H] / [N-G]	230 V a.c. / 275 V a.c. / 410 V a.c. / 455 V a.c. / 460 V a.c. / 505 V a.c. / 180 V a.c.	385V a.c. / 510 V a.c. / 565 V a.c. / 690 V a.c. / 770 V a.c. / 895 V a.c. / 180 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA	20 kA
Voltage protection rating [L-N] / [H-N] / [L-G] / [H-G] / [L-L] / [L-H] / [N-G] (VPR)	700 V_{pk} / 800 V_{pk} / 1200 V_{pk} / 1500 V_{pk} / 1500 V_{pk} / 1500 V_{pk} / 600 V_{pk}	1200 V_{pk} / 1500 V_{pk} / 1800 V_{pk} / 2000 V_{pk} / 2500 V_{pk} / 2500 V_{pk} / 600 V_{pk}
Max. mains-side overcurrent protection	Not needed	Not needed
Approvals	UL, CSA	UL, CSA
Extended technical data:		
Max. discharge current (8/20) (I_{max})	50 kA	50 kA

DEHNguard MU 3PH ... 4W+G R



DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Phase High-leg Delta Systems; has floating Form C (SPDT) remote status contacts

Type DG ...	MU 3PH 240 4W+G R	MU 3PH 480 4W+G R
Part No.	908 348	908 349
SPD as per ANSI/UL 1449	Open-Type 1 SPD	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-N] / [H-N] / [L-G] / [H-G] / [L-L] / [L-H] / [N-G]	230 V a.c. / 275 V a.c. / 410 V a.c. / 455 V a.c. / 460 V a.c. / 505 V a.c. / 180V a.c.	385 V a.c. / 510 V a.c. / 565 V a.c. / 690 V a.c. / 770 V a.c. / 895 V a.c. / 180 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA	20 kA
Voltage protection rating [L-N] / [H-N] / [L-G] / [H-G] / [L-L] / [L-H] / [N-G] (VPR)	700 V_{pk} / 800 V_{pk} / 1200 V_{pk} / 1500 V_{pk} / 1500 V_{pk} / 1500 V_{pk} / 600 V_{pk}	1200 V_{pk} / 1500 V_{pk} / 1800 V_{pk} / 2000 V_{pk} / 2500 V_{pk} / 2500 V_{pk} / 600 V_{pk}
Max. mains-side overcurrent protection	Not needed	Not needed
Approvals	UL, CSA	UL, CSA
Remote status contact	Floating (dry), Form C (SPDT)	Floating (dry), Form C (SPDT)
Extended technical data:		
Max. discharge current (8/20) (I_{max})	50 kA	50 kA

DEHNguard MU SP ... 3W+G



DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in Split Phase systems

Type DG ...	MU SP 240 3W+G	MU SP 480 3W+G
Part No.	908 190	908 192
SPD as per ANSI/UL 1449	Open-Type 1 SPD	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	230 V a.c. / 460 V a.c.	385 V a.c. / 770 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA	20 kA
Voltage protection rating [L-G] / [L-L] (VPR)	700 V_{pk} / 1500 V_{pk}	1200 V_{pk} / 2500 V_{pk}
Max. mains-side overcurrent protection	Not needed	Not needed
Approvals	UL, CSA	UL, CSA
Extended technical data:		
Max. discharge current (8/20) (I_{max})	50 kA	50 kA

DEHNguard MU SP ... 3W+G R



DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in Split Phase systems; has floating Form C (SPDT) remote status contacts

Type DG ...	MU SP 240 3W+G R	MU SP 480 3W+G R
Part No.	**908 195**	**908 197**
SPD as per ANSI/UL 1449	Open-Type 1 SPD	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	230 V a.c. / 460 V a.c.	385 V a.c. / 770 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA	20 kA
Voltage protection rating [L-G] / [L-L] (VPR)	700 V_{pk} / 1500 V_{pk}	1200 V_{pk} / 2500 V_{pk}
Max. mains-side overcurrent protection	Not needed	Not needed
Approvals	UL, CSA	UL, CSA
Remote status contact	Floating (dry), Form C (SPDT)	Floating (dry), Form C (SPDT)
Extended technical data:		
Max. discharge current (8/20) (I_{max})	50 kA	50 kA

DEHNguard MU SPN ... 3W+G



DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in Split Phase systems

Type DG ...	MU SPN 240 3W+G
Part No.	**908 214**
SPD as per ANSI/UL 1449	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-N] / [L-G] / [L-L] / [N-G] (MCOV)	180 V a.c. / 360 V a.c. / 360 V a.c. / 180 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA
Voltage protection rating [L-N] / [L-G] / [L-L] / [N-G] (VPR)	600 V_{pk} / 1200 V_{pk} / 1200 V_{pk} / 600 V_{pk}
Max. mains-side overcurrent protection	Not needed
Approvals	UL, CSA
Extended technical data:	
Max. discharge current (8/20) (I_{max})	50 kA

DEHNguard MU SPN ... 3W+G R



DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in 3 Split Phase systems; has floating Form C (SPDT) remote status contacts

Type DG ...	MU SPN 240 3W+G R
Part No.	**908 219**
SPD as per ANSI/UL 1449	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-N] / [L-G] / [L-L] / [N-G] (MCOV)	180 V a.c. / 360 V a.c. / 360 V a.c. / 180 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA
Voltage protection rating [L-N] / [L-G] / [L-L] / [N-G] (VPR)	600 V_{pk} / 1200 V_{pk} / 1200 V_{pk} / 600 V_{pk}
Max. mains-side overcurrent protection	Not needed
Approvals	UL, CSA
Remote status contact	Floating (dry), Form C (SPDT)
Extended technical data:	
Max. discharge current (8/20) (I_{max})	50 kA

DEHNguard MU CGD ... 3W+G



DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in Corner Grounded Delta systems

Type DG ...	MU CGD 240 3W+G	MU CGD 480 3W+G
Part No.	**908 203**	**908 204**
SPD as per ANSI/UL 1449	Open-Type 1 SPD	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	275 V a.c. / 550 V a.c.	550 V a.c. / 1100 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA	20 kA
Voltage protection rating [L-G] / [L-L] (VPR)	800 V_{pk} / 1500 V_{pk}	1800 V_{pk} / 3000 V_{pk}
Max. mains-side overcurrent protection	Not needed	Not needed
Approvals	UL, CSA	UL, CSA
Extended technical data:		
Max. discharge current (8/20) (I_{max})	50 kA	50 kA

DEHNguard MU CGD ... 3W+G R



DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection modules for application in Corner Grounded Delta systems; has floating Form C (SPDT) remote status contacts

Type DG ...	MU CGD 240 3W+G R	MU CGD 480 3W+G R
Part No.	**908 208**	**908 209**
SPD as per ANSI/UL 1449	Open-Type 1 SPD	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly	Type 4-1 Component Assembly
Max. continuous operating voltage AC [L-G] / [L-L] (MCOV)	275 V a.c. / 550 V a.c.	550 V a.c. / 1100 V a.c.
Nominal discharge current (8x 20 µs) (I_n)	20 kA	20 kA
Voltage protection rating [L-G] / [L-L] (VPR)	800 V_{pk} / 1500 V_{pk}	1800 V / 3000 V
Max. mains-side overcurrent protection	Not needed	Not needed
Approvals	UL, CSA	UL, CSA
Remote status contact	Floating (dry), Form C (SPDT)	Floating (dry), Form C (SPDT)
Extended technical data:		
Max. discharge current (8/20) (I_{max})	50 kA	50 kA

DEHNguard SU 1P ...



DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection module for application in Single Phase electrical systems

General technical data:	
SPD as per ANSI/UL 1449	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly
Nominal discharge current (8x 20 µs) (I_n)	20 kA
Max. mains-side overcurrent protection	Not needed
Approvals	UL, CSA
Extended technical data:	
Max. discharge current (8/20) (I_{max})	50 kA

Type DG ...	SU 1P 120	SU 1P 240	SU 1P 347
Part No.	**908 070**	**908 074**	**908 076**
Max. continuous operating voltage AC (MCOV)	230 Vac	385 Vac	510 Vac
Voltage protection rating (VPR)	700 V_{pk}	1200 V_{pk}	1500 V_{pk}

DEHNguard SU 1P ... R



DIN rail mount, pluggable surge arrester consisting of a base part and plug-in protection module for application in Single Phase electrical systems; has floating Form C (SPDT) remote status contacts

General technical data:	
SPD as per ANSI/UL 1449	Open-Type 1 SPD
SPD as per CSA-C22.2 no. 269.1	Type 4-1 Component Assembly
Nominal discharge current (8x 20 µs) (I_n)	20 kA
Max. mains-side overcurrent protection	Not needed
Approvals	UL, CSA
Remote status contact	Floating (dry), Form C (SPDT)
Extended technical data:	
Max. discharge current (8/20) (I_{max})	50 kA

Type DG ...	SU 1P 120 R	SU 1P 240 R	SU 1P 347 R
Part No.	908 090	908 094	908 096
Max. continuous operating voltage AC (MCOV)	230 Vac	385 Vac	510 Vac
Voltage protection rating (VPR)	700 V_{pk}	1200 V_{pk}	1500 V_{pk}

Protection module for DEHNguard M UL series

The DEHNguard SU/MU products are modular so that in the rare event that a module is damaged, it is easy to replace without rewiring the SPD. The modules and the terminal block base are keyed to prevent an errors during installation and are shock & vibration tolerant tested to the EN 60068 international standard.

Varistor-Based Protection Module



Varistor-based protection module for DEHNguard MU ... and DEHNguard SU ... surge arresters.

General technical data:	
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (I_{max})	50 kA

Type DG PLU ...	180	230	275
Part No.	908 011	908 012	908 010
Max. continuous operating voltage AC (MCOV)	180 Vac	230 Vac	275 Vac

Type DG PLU ...	385	510	550
Part No.	908 014	908 013	908 015
Max. continuous operating voltage AC (MCOV)	385 Vac	510 Vac	550 Vac

SPD+POP+MCB / POP+MCB / POP

Compact surge arrester for transient and power frequency overvoltages with integrated miniature circuit breaker
For installation in conformity with the lightning protection zone concept at the boundaries from 0_B – 1 and higher
Type 2 SPD according to EN 61643-11
Comprehensive protection against transients and power frequency overvoltages (SPD+POP 2/4 255 C..)

- Fulfils the requirements of EN 50550 "Power frequency overvoltage protective device"
- Prewired complete unit, individual devices do not have to be additionally wired
- Easy installation and retrofitting thanks to low space requirements
- High reliability due to "Thermo Dynamic Control" monitoring system integrated in the SPD
- Application-optimised discharge capacity of 5 kA (I_n) / 15 kA (I_{max}) (8/20 µs) per pole
- Energy coordination with other arresters of the Red/Line series
- Operating state / fault indication by green / red indicator flag in the inspection window of the SPD

Two-pole SPD+POP+MCB



General technical data:	
Number of poles	1P + N
Nominal a.c. voltage (U_N)	230 V

Type SPD+POP 2 255...	C25	C32	C40
Part No.	900 780	900 781	900 782
SPD			
Nominal discharge current (8/20 µs) [L-N] (I_n)	5 kA	5 kA	5 kA
MCB			
Tripping characteristic	C	C	C
Nominal alternating current (I_n)	25 A	32 A	40 A

Four-pole SPD+POP+MCB



General technical data:	
Number of poles	3P + N
Nominal a.c. voltage (U_N)	230 / 400 V

Type SPD+POP 4 255 ...	C25	C32	C40	C63
Part No.	900 785	900 786	900 787	900 788
SPD				
Nominal discharge current (8/20 µs) [L-N] (I_n)	5 kA	5 kA	5 kA	5 kA
MCB				
Tripping characteristic	C	C	C	C
Nominal alternating current (I_n)	25 A	32 A	40 A	63 A

Two-pole POP+MCB



General technical data:	
Number of poles	1P + N
Nominal a.c. voltage (U_N)	230 V

Type POP 2 255 ...	C25	C32	C40
Part No.	900 760	900 761	900 762
MCB			
Tripping characteristic	C	C	C
Nominal alternating current (I_n)	25 A	32 A	40 A

Four-pole POP+MCB



General technical data:	
Number of poles	3P + N
Nominal a.c. voltage (U_N)	230 / 400 V

Type POP 4 255 ...	C25	C32	C40	C63
Part No.	900 765	900 766	900 767	900 768
MCB				
Tripping characteristic	C	C	C	C
Nominal alternating current (I_n)	25 A	32 A	40 A	63 A

DEHNcord

Single-pole, two-pole or three-pole surge protective device with monitoring and disconnection device. For protecting low-voltage consumer installations against surges.

DEHNcord 3P TT 275 FM

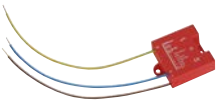
Compact three-phase arrester for TT and TN-S systems.



Type	DCOR 3P TT 275 FM
Part No.	**900 439**
SPD according to EN 61643-11 / IEC 61643-11	type 2 + type 3 / class II + class III
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	350 V
Nominal discharge current (8/20 µs) [L-N] (I_n)	10 kA
Max. discharge current (8/20 µs) [L-N] (I_{max})	20 kA
Nominal discharge current (8/20 µs) [N-PE] (I_n)	10 kA
Max. discharge current (8/20 µs) [N-PE] (I_{max})	40 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Voltage protection level [N-PE] (U_P)	≤ 1.5 kV
Approvals	KEMA

DEHNcord L 2P

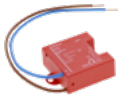
Two-pole surge arrester for all installation systems (1+1 configuration) and luminaires of protection class I; compact design.



Type	DCOR L 2P 275	DCOR L 2P 320
Part No.	**900 430**	**900 432**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)	320 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV	≤ 1.75 kV
Voltage protection level [N-PE] (U_P)	≤ 1.5 kV	≤ 1.5 kV
Max. mains-side overcurrent protection	25 A gG	25 A gG
Approvals	KEMA	KEMA

DEHNcord L 1P

Single-pole surge arrester for luminaires of protection class II; compact design.



Type	DCOR L 1P 275	DCOR L 1P 320
Part No.	**900 431**	**900 433**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)	320 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV	≤ 1.75 kV
Max. mains-side overcurrent protection	25 A gG	25 A gG
Approvals	KEMA	KEMA

DEHNcord L 2P SN1864

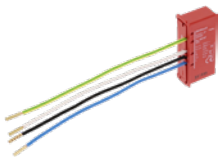
Surge arrester for luminaires of protection class II; compact design. With disconnection in the event of a fault.



Type	DCOR L 2P SN1864
Part No.	**999 906**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	B 16 A

DEHNcord L 2P SN1860

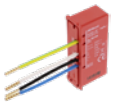
Surge arrester for all installation systems; compact design. With disconnection of the load circuit in the event of a fault.



Type	DCOR L 2P SN1860
Part No.	**999 937**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Voltage protection level [N-PE] (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	B 16 A

DEHNcord L 2P 275 SO LTG

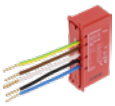
Surge arrester for all installation systems; compact design. With disconnection of the load circuit in the event of a fault.



Type	DCOR L 2P 275 SO LTG
Part No.	**900 446**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Voltage protection level [N-PE] (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	B 16 A
Approvals	KEMA

DEHNcord L 3P 275 SO LTG

Three-pole surge arrester for all installation systems; compact design. With disconnection of the load circuit in the event of a fault and protection of the control phase.



Type	DCOR L 3P 275 SO LTG
Part No.	**900 445**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Voltage protection level [N-PE] (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	B 16 A
Approvals	KEMA

SK EK480 G2S-2d LM DCOR

The EK480 fuse box is a high-quality product from Langmatz which stands out for its excellent workmanship and tried and tested features. The EK480 series meets all mechanical and electrical requirements and standards. This ensures the effective protection of luminaires with high-quality electronics against surges resulting from switching operations or nearby lightning strikes.



Type SK EK480 ...	G2S-2d LM DCOR
Part No.	**900 443**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating a.c. voltage [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Voltage protection level [N-PE] (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	B 16 A
For masts with an inside diameter from	89 mm
Dimensions	276 x 81 x 70 mm
Clamping technology	incoming: sliding clamp technology / outgoing: spring clamp technology
Max. cross-section of connectable cable	1 - 3 cables (4 or 5 x 16 mm²)
Outgoing terminals	max. 2.5 mm²

DEHNcord L 2P 275 SO LT

Two-pole surge arrester for TNC systems; compact design. With disconnection of the load circuit in the event of a fault and protection of the control phase.



Type	DCOR L 2P 275 SO LT
Part No.	**900 435**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-PEN] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-PEN] (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	B 16 A
Approvals	KEMA

DEHNcord L 3P 275 SO IP

Three-pole surge arrester for all installation systems; compact design. IP 65 degree of protection. With disconnection of the load circuit in the event of a fault and protection of the control phase.



Type	DCOR L 3P 275 SO IP
Part No.	**900 447**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Voltage protection level [N-PE] (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	B 16 A

DEHNcord L 2P 275 SO IP

Two-pole arrester for all installation systems; compact design. IP 65 degree of protection. With disconnection of the load circuit in the event of a fault.



Type	DCOR L 2P 275 SO IP
Part No.	**900 448**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Voltage protection level [N-PE] (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	B 16 A

DEHNcord R 3P

Surge arrester for electric Venetian blinds; compact design.



Type	DCOR R 3P 275
Part No.	**900 449**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	275 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	2.5 kA
Max. discharge current (8/20 µs) (I_{max})	5 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Connector	Hirschmann STAK 3 / STAS 3

DEHNgap C S

N-PE surge arrester with a functional design. For protecting low-voltage consumer´s installations against surges particularly in TT systems.

DEHNgap C S (FM)

N-PE surge arrester; FM version with floating remote signalling contact.



Type DGP C ...	S	S FM
Part No.	**952 030**	**952 035**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.5 kV
Approvals	KEMA, VDE, UL	KEMA, VDE, UL
Type of remote signalling contact	–	changeover contact

Accessories for DEHNgap C S

N-PE Spark-Gap-Based Protection Module for DEHNgap C S

N-PE spark-gap-based protection module for single-pole N-PE surge arresters of type DEHNgap DGP C S ... .



Type	DGP C MOD
Part No.	**952 060**
Max. continuous operating voltage (a.c.) (U_C)	255 V

DEHNguard ME/SE DC … (FM)

Modular combined arrester for protecting d.c. consumer installations.

DEHNguard ME DC … FM

Modular combined arrester for DC applications; with floating remote signalling contact.



Type DG …	ME DC Y 950 FM
Part No.	972 146
SPD analogous to EN 61643-11 / IEC 61643-11	type 1 + type 2 / class I + class II
Max. continuous operating voltage (d.c.) (U_C)	950 V
Lightning impulse current (10/350 µs) (I_{imp})	5 kA
Nominal discharge current (8/20 µs) (I_n)	12.5 kA
Voltage protection level [DC+ -> DC-] (U_P)	≤ 4 kV
Voltage protection level [(DC+/DC-) --> PE] (U_P)	≤ 3.2 kV
Max. short circuit withstand capability (I_{SCCR})	500 A / 170 ms
Approvals	UL
Type of remote signalling contact	changeover contact

DEHNguard SE DC …

Modular single-pole surge arrester for d.c. applications.



General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Nominal discharge current (8/20 µs) (I_n)	12.5 kA
Short-circuit withstand capability for max. mains-side overcurrent protection (d.c.) (I_{SCCR})	25 kA

Type DG …	SE DC 60	SE DC 242
Part No.	972 110	972 120
Max. continuous operating voltage (d.c.) (U_C)	60 V	242 V
Voltage protection level (U_P)	≤ 0.5 kV	≤ 1.25 kV
Short-circuit withstand capability without backup fuse (d.c.) (I_{SCCR})	300 A	300 A
Max. mains-side overcurrent protection	35 A gG	35 A gG

Type DG …	SE DC 550	SE DC 900
Part No.	972 130	972 140
Max. continuous operating voltage (d.c.) (U_C)	550 V	900 V
Voltage protection level (U_P)	≤ 2.0 kV	≤ 3.0 kV
Short-circuit withstand capability without backup fuse (d.c.) (I_{SCCR})	200 A	100 A
Max. mains-side overcurrent protection	35 A gG	80 A gPV

Accessories for DEHNguard ME/SE DC … (FM)

Earthing Clip for 1.5-module Enclosures, single-phase, two-pole

Earthing clip for connecting the earth terminal of e.g. two SPDs with 1.5-module enclosure to earth, with terminal.



Type	EB 1 2 1.5
Part No.	900 460
Dimensions	34 x 60 x 28 mm
Terminal	up to 25 mm²

DEHNguard SE DC … FM

Modular single-pole surge arrester for d.c. applications; with floating remote signalling contact.



General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Nominal discharge current (8/20 µs) (I_n)	12.5 kA
Short-circuit withstand capability for max. mains-side overcurrent protection (d.c.) (I_{SCCR})	25 kA
Type of remote signalling contact	changeover contact

Type DG …	SE DC 60 FM	SE DC 242 FM
Part No.	972 115	972 125
Max. continuous operating voltage (d.c.) (U_C)	60 V	242 V
Voltage protection level (U_P)	≤ 0.5 kV	≤ 1.25 kV
Short-circuit withstand capability without backup fuse (d.c.) (I_{SCCR})	300 A	300 A
Max. mains-side overcurrent protection	35 A gG	35 A gG

Type DG …	SE DC 550 FM	SE DC 900 FM
Part No.	972 135	972 145
Max. continuous operating voltage (d.c.) (U_C)	550 V	900 V
Voltage protection level (U_P)	≤ 2.0 kV	≤ 3.0 kV
Short-circuit withstand capability without backup fuse (d.c.) (I_{SCCR})	200 A	100 A
Max. mains-side overcurrent protection	35 A gG	80 A gPV

Accessories for DEHNguard ME/SE DC … (FM)

Varistor-Based Protection Module for DEHNguard ME DC



Type	DG MOD DC Y 500
Part No.	972 050
Max. continuous operating voltage (d.c.) (U_C)	950 V

Spark-Gap Based Protection Module for DEHNguard ME DC



Type	DGP MOD DC Y 500
Part No.	972 051
Max. continuous operating voltage DC (U_C)	950 V

Varistor-Based Protection Module for DEHNguard SE DC



Type	DG MOD E DC 60	DG MOD E DC 242
Part No.	972 010	972 020
Max. continuous operating voltage (d.c.) (U_C)	60 V	242 V

Type	DG MOD E DC 550	DG MOD E DC 900
Part No.	972 030	972 040
Max. continuous operating voltage (d.c.) (U_C)	550 V	900 V

DEHNguard PCB

Single-pole base for DEHNguard protection modules for easily integrating a type 2 arrester directly on the PCBs of devices to provide surge protection.

DEHNguard PCB PV SCI ...



Single-pole base for DEHNguard modules to be mounted on the PCBs of devices.

General technical data:	
For mounting on	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)

Type DG PCB ...	PV SCI 300	PV SCI 500
Part No.	952 653	952 651
Associated protection module	DG MOD PV SCI 300 (Part No. 952 053)	DG MOD PV SCI 500 (Part No. 952 051)
Max. continuous operating voltage (d.c.) (module)	300 V	500 V

Type DG PCB ...	PV SCI 600
Part No.	952 654
Associated protection module	DG MOD PV SCI 600 (Part No. 952 054)
Max. continuous operating voltage (d.c.) (module)	600 V

DEHNguard PCB PV SCI ... FM



Single-pole base for DEHNguard modules to be mounted on the PCBs of devices, with remote signalling contact for the monitoring system (floating changeover contact).

General technical data:	
For mounting on	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)
Type of remote signalling contact	changeover contact

Type DG PCB ...	PV SCI 300 FM	PV SCI 500 FM
Part No.	952 753	952 751
Associated protection module	DG MOD PV SCI 300 (Part No. 952 053)	DG MOD PV SCI 500 (Part No. 952 051)
Max. continuous operating voltage (d.c.) (module)	300 V	500 V

Type DG PCB ...	PV SCI 600 FM
Part No.	952 754
Associated protection module	DG MOD PV SCI 600 (Part No. 952 054)
Max. continuous operating voltage (d.c.) (module)	600 V

DEHNguard PCB PV ...



Single-pole base for DEHNguard modules to be mounted on the PCBs of devices.

General technical data:	
For mounting on	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)

Type DG PCB ...	PV 300	PV 500
Part No.	952 643	952 641
Associated protection module	DG MOD PV 300 (Part No. 952 043)	DG MOD PV 500 (Part No. 952 041)
Max. continuous operating voltage (d.c.) (module)	300 V	500 V

Type DG PCB ...	PV 600
Part No.	952 644
Associated protection module	DG MOD PV 600 (Part No. 952 044)
Max. continuous operating voltage (d.c.) (module)	600 V

DEHNguard PCB PV ... FM



Single-pole base for DEHNguard modules to be mounted on the PCBs of devices, with remote signalling contact for the monitoring system (floating changeover contact).

General technical data:	
For mounting on	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)
Type of remote signalling contact	changeover contact

Type DG PCB ...	PV 300 FM	PV 500 FM
Part No.	952 743	952 741
Associated protection module	DG MOD PV 300 (Part No. 952 043)	DG MOD PV 500 (Part No. 952 041)
Max. continuous operating voltage (d.c.) (module)	300 V	500 V

Type DG PCB ...	PV 600 FM
Part No.	952 744
Associated protection module	DG MOD PV 600 (Part No. 952 044)
Max. continuous operating voltage (d.c.) (module)	600 V

DEHNguard PCB ...



Single-pole base for DEHNguard modules to be mounted on the PCBs of devices.

Type DG PCB ...	275	385
Part No.	952 610	952 614
Associated protection module	DG MOD 275 (Part No. 952 010)	DG MOD 385 (Part No. 952 014)
Max. continuous operating voltage (a.c.) (module)	275 V	385 V
For mounting on	directly soldered into PCB	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)	IP 20 (protection module plugged in)

DEHNguard PCB ... FM



Single-pole base for DEHNguard modules to be mounted on the PCBs of devices, with remote signalling contact for the monitoring system (floating changeover contact).

Type DG PCB ...	275 FM	385 FM
Part No.	952 710	952 714
Associated protection module	DG MOD 275 (Part No. 952 010)	DG MOD 385 (Part No. 952 014)
Max. continuous operating voltage (a.c.) (module)	275 V	385 V
For mounting on	directly soldered into PCB	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)	IP 20 (protection module plugged in)
Type of remote signalling contact	changeover contact	changeover contact

DEHNguard PCB NPE (FM)



Single-pole base for DEHNguard modules to be mounted on the PCBs of devices, with remote signalling contact for the monitoring system (floating changeover contact).

Type DG PCB ...	NPE	NPE FM
Part No.	952 650	952 750
Associated protection module	DG MOD NPE (Part No. 952 050)	DG MOD NPE (Part No. 952 050)
Max. continuous operating voltage (a.c.) (module)	255 V	255 V
For mounting on	directly soldered into PCB	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)	IP 20 (protection module plugged in)
Type of remote signalling contact	–	changeover contact

DEHNguard PCB PV I ... FM



Single-pole base with increased clearance and creepage distance between the power contacts and the remote signalling contact. For installation on the PCBs of devices to accommodate DEHNguard modules, with remote signalling contact for the monitoring system (floating changeover contact).

General technical data:	
For mounting on	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)
Type of remote signalling contact	changeover contact

Type DG PCB ...	PV I 500 FM	PV I 600 FM
Part No.	952 941	952 948
Associated protection module	DG MOD PV 500 (Part No. 952 041)	DG MOD H PV 600 (Part No. 952 048)
Max. continuous operating voltage (d.c.) (module)	500 V	600 V

Type DG PCB ...	PV I 750 FM
Part No.	952 949
Associated protection module	DG MOD H PV 750 (Part No. 952 049)
Max. continuous operating voltage (d.c.) (module)	750 V

DEHNguard PCB PVSCI I ...FM



Single-pole base with increased clearance and creepage distance between the power contacts and the remote signalling contact. For installation on the PCBs of devices to accommodate DEHNguard modules, with remote signalling contact for the monitoring system (floating changeover contact).

Type DG PCB ...	PVSCI I 500FM
Part No.	952 951
Associated protection module	DG MOD PV SCI 500 (Part No. 952 051)
Max. continuous operating voltage (d.c.) (module)	500 V
For mounting on	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)
Type of remote signalling contact	changeover contact

DEHNguard PCB I ... FM



Single-pole base with increased clearance and creepage distance between the power contacts and the remote signalling contact. For installation on the PCBs of devices to accommodate DEHNguard modules, with remote signalling contact for the monitoring system (floating changeover contact).

Type DG PCB ...	I 275 FM
Part No.	952 910
Associated protection module	DG MOD 275 (Part No. 952 010)
Max. continuous operating voltage (a.c.) (module)	275 V
For mounting on	directly soldered into PCB
Degree of protection	IP 20 (protection module plugged in)
Type of remote signalling contact	changeover contact

Protection module for DEHNguard M, ... S and DEHNgap C S

DG MOD...: Replacement protection modules fitting for all devices of the modular DEHNguard series.

Switch-Spark Gap Protection Module for DEHNguard M ACI



Type	DG MOD ACI 275
Part No.	952 024
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. continuous operating voltage (a.c.) (U_C)	275 V

Spark-Gap-Based Protection Module for DEHNguard M ACI



Type	DG MOD A NPE
Part No.	952 022 NEW
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. continuous operating voltage (a.c.) (U_C)	255 V

Varistor-based Protection Module for DEHNguard SE CI ...



Type	DG MOD E CI 440	DG MOD E CI WE 440
Part No.	952 926	952 927
Nominal discharge current (8/20 µs) (I_n)	12.5 kA	12.5 kA
Max. continuous operating voltage (a.c.) (U_C)	440 V	440 V
Rated varistor voltage (U_{mov})	440 V	750 V

Varistor-based Protection Module for DEHNguard M and DEHNguard S



Type	DG MOD 48	DG MOD 75	DG MOD 150
Part No.	952 018	952 011	952 012
Nominal discharge current (8/20 µs) (I_n)	7.5 kA	10 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	25 kA	40 kA	40 kA
Max. continuous operating voltage (a.c.) (U_C)	48 V	75 V	150 V

Type	DG MOD 275	DG MOD 320	DG MOD 385
Part No.	952 010	952 013	952 014
Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA	40 kA
Max. continuous operating voltage (a.c.) (U_C)	275 V	320 V	385 V

Type	DG MOD 440	DG MOD 600
Part No.	952 015	952 016
Nominal discharge current (8/20 µs) (I_n)	20 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	30 kA
Max. continuous operating voltage (a.c.) (U_C)	440 V	600 V

Varistor-Based Protection Module for DEHNguard M (S) WE



Type	DG MOD 750
Part No.	952 017
Nominal discharge current (8/20 µs) (I_n)	15 kA
Max. discharge current (8/20 µs) (I_{max})	25 kA
Max. continuous operating voltage (a.c.) (U_C)	600 V
Rated varistor voltage (U_{mov})	750 V

N-PE Spark-Gap-Based Protection Module for DEHNguard M ACI

N-PE spark-gap-based protection module for two-pole and four-pole DEHNguard DG M TT (2P) ACI ... .



Type	DG MOD H A NPE
Part No.	952 083
Nominal discharge current (8/20 µs) (I_n)	80 kA
Max. discharge current (8/20 µs) (I_{max})	120 kA
Max. continuous operating voltage (a.c.) (U_C)	275 V

N-PE Spark-Gap-Based Protection Module for DEHNguard M H TT ...



Type	DG MOD H NPE
Part No.	952 081
Nominal discharge current (8/20 µs) (I_n)	80 kA
Max. discharge current (8/20 µs) (I_{max})	120 kA
Max. continuous operating voltage (a.c.) (U_C)	255 V

N-PE Spark-Gap-Based Protection Module for DEHNguard M TT ...



Type	DG MOD NPE
Part No.	952 050
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. continuous operating voltage (a.c.) (U_C)	255 V

N-PE Spark-Gap-Based Protection Module for DEHNgap C S



Type	DGP C MOD
Part No.	952 060
Nominal discharge current (8/20 µs) (I_n)	20 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA
Max. continuous operating voltage (a.c.) (U_C)	255 V

Varistor and Spark-Gap-Based Protection Module for DEHNguard S ... VA



General technical data:	
Nominal discharge current (8/20 µs) (I_n)	10 kA
Max. discharge current (8/20 µs) (I_{max})	20 kA

Type	DG MOD 75 VA	DG MOD 275 VA
Part No.	952 025	952 027
Max. continuous operating voltage (a.c.) (U_C)	75 V	275 V
Max. continuous operating voltage (d.c.) (U_C)	100 V	350 V

Type	DG MOD 385 VA
Part No.	952 029
Max. continuous operating voltage (a.c.) (U_C)	385 V
Max. continuous operating voltage (d.c.) (U_C)	500 V

Varistor-based Protection Module for DEHNguard M YPV



Type	DG MOD H PV 600	DG MOD H PV 750
Part No.	952 048	952 049
Nominal discharge current (8/20 µs) (I_n)	20 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Max. continuous operating voltage (d.c.) (U_C)	600 V	750 V

Varistor-Based Protection Module for DEHNguard M YPV SCI and DEHNguard S PV SCI



Type	DG MOD PV SCI 500	DG MOD PV SCI 600
Part No.	952 051	952 054
Nominal discharge current (8/20 µs) (I_n)	12.5 kA	12.5 kA
Max. discharge current (8/20 µs) (I_{max})	25 kA	25 kA
Max. continuous operating voltage (d.c.) (U_C)	500 V	600 V

Varistor-Based Protection Module for DEHNguard M YPV and DEHNguard S PV



Type	DG MOD PV 500	DG MOD PV 600
Part No.	952 041	952 044
Nominal discharge current (8/20 µs) (I_n)	20 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	30 kA
Max. continuous operating voltage (d.c.) (U_C)	500 V	600 V

Varistor-Based Protection Module for DEHNguard SE H ...



Type	DG MOD E H 1000	DG MOD E H 1000 VA
Part No.	952 908	952 918
Nominal discharge current (8/20 µs) (I_n)	20 kA	15 kA
Max. discharge current (8/20 µs) (I_{max})	40 kA	40 kA
Max. continuous operating voltage (a.c.) (U_C)	1000 V	1000 V

Varistor-based Protection Module for DEHNguard SE DC



General technical data:	
Nominal discharge current (8/20 µs) (I_n)	12.5 kA

Type	DG MOD E DC 60	DG MOD E DC 242
Part No.	972 010	972 020
Max. continuous operating voltage (d.c.) (U_C)	60 V	242 V

Type	DG MOD E DC 550	DG MOD E DC 900
Part No.	972 030	972 040
Max. continuous operating voltage (d.c.) (U_C)	550 V	900 V

DEHNguard 1000

Compact single-pole surge arrester for continuous operating voltages up to 1000 V AC. For protecting low-voltage consumer's installations against surges.

DEHNguard 1000 (FM)

Compact single-pole surge arrester; FM version with floating remote signalling contact.



Type DG ...	1000	1000 FM
Part No.	**950 102**	**950 112**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	1000 V (50 / 60 Hz)	1000 V (50 / 60 Hz)
Max. discharge current (8/20 µs) (I_{max})	30 kA	30 kA
Voltage protection level (U_p)	≤ 4.2 kV	≤ 4.2 kV
Max. overcurrent protection	100 A aM	100 A aM
Max. overcurrent protection at U ≤ 690 V a.c.	125 A gG	125 A gG
Approvals	UL	UL
Type of remote signalling contact	–	changeover contact

Accessories for DEHNguard 1000

Earthing Clip for two-module Enclosures, single-phase, two-pole



Earthing clip for connecting the earth terminal of e.g. two SPDs with two-module enclosure to earth, with terminal.

Type	EB 1 2 5
Part No.	**900 419**
Dimensions	34 x 77 x 28 mm
Terminal	up to 25 mm²

Earthing Clip for two-module Enclosures, single-phase, three-pole



Earthing clip for connecting the earth terminal of e.g. three SPDs with two-module enclosure to earth, with terminal.

Type	EB DG 1000 1 3
Part No.	**900 411**
Dimensions	34 x 112 x 28 mm
Terminal	up to 25 mm²

Earthing Clip for two-module Enclosures, single-phase, four-pole



Earthing clip for connecting the earth terminal of e.g. four SPDs with two-module enclosure to earth, with terminal.

Type	EB 1 4 9
Part No.	**900 417**
Dimensions	34 x 148 x 28 mm
Terminal	up to 25 mm²

V NH / VA NH

Surge arrester with NH design and integrated backup fuse. For protecting low-voltage consumer´s installations against surges.

V NH00 (FM)

Varistor-based surge arrester with integrated backup fuse for use in NH00 fuse holders, optionally available with special indicator for remote signalling.



Type	V NH00 280	V NH00 280 FM
Part No.	**900 261**	**900 263**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	280 V (50 / 60 Hz)	280 V (50 / 60 Hz)
Max. discharge current (8/20 µs) (I_{max})	30 kA	30 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.5 kV
Max. mains-side overcurrent protection	not required	not required
Indicator for remote signalling	–	tripping distance of 7 mm

V NH1

Varistor-based surge arrester with integrated backup fuse for use in NH1 fuse holders.



Type	V NH1 280
Part No.	**900 270**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	280 V (50 / 60 Hz)
Max. discharge current (8/20 µs) (I_{max})	30 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	not required

VA NH00 (FM)

Surge arrester based on a series-connected varistor and spark gap with integrated backup fuse; for use in NH00 fuse holders, optionally available with special indicator for remote signalling.



Type	VA NH00 280	VA NH00 280 FM
Part No.	**900 262**	**900 264**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	Type 2 / Class II
Max. continuous operating voltage (a.c.) (U_C)	280 V (50 / 60 Hz)	280 V (50 / 60 Hz)
Max. discharge current (8/20 µs) (I_{max})	20 kA	20 kA
Voltage protection level (U_P)	≤ 1.5 kV	≤ 1.5 kV
Max. mains-side overcurrent protection	not required	not required
Indicator for remote signalling	–	tripping distance of 7 mm

VA NH1

Surge arrester based on a series-connected varistor and spark gap with integrated backup fuse; for use in NH1 fuse holders.



Type	VA NH1 280
Part No.	**900 271**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Max. continuous operating voltage (a.c.) (U_C)	280 V (50 / 60 Hz)
Max. discharge current (8/20 µs) (I_{max})	20 kA
Voltage protection level (U_P)	≤ 1.5 kV
Max. mains-side overcurrent protection	not required

DEHNguard modular YPV ... FM

Modular multipole surge arrester with three-step d.c. switching device for PV systems up to 1500 V as pre-wired complete unit.

DEHNguard M YPV ... FM

Modular multipole surge arrester for PV systems with remote signalling contact for monitoring device (floating changeover contact).



Type DG M YPV ...	1200 FM	1500 FM
Part No.	**952 565**	**952 567**
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II	type 2 / class II
Max. PV voltage (U_{CPV})	1170 V	1500 V
Short-circuit current rating (I_{SCPV})	10 kA	10 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	20 kA	15 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	40 kA	40 kA
Voltage protection level (U_P)	≤ 4 kV	≤ 5 kV
Approvals	UL, KEMA	UL, KEMA
Type of remote signalling contact	changeover contact	changeover contact

Accessories for DEHNguard modular YPV ... FM

Varistor-Based Protection Module for DEHNguard M YPV



Type	DG MOD H PV 600	DG MOD H PV 750
Part No.	**952 048**	**952 049**
Max. continuous operating voltage (d.c.) (U_C)	600 V	750 V

DEHNguard modular (Y)PV SCI ...

Modular multipole surge arrester (prewired complete unit) with three-step d.c. switching device for use in PV systems up to 1200 V.

DEHNguard M YPV SCI ...

Modular multipole surge arrester with three-step d.c. switching device for use in PV systems



Type DG M ...	YPV SCI 1000	YPV SCI 1200
Part No.	**952 510**	**952 512**
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II	type 2 / class II
Max. PV voltage (U_{CPV})	1000 V	1200 V
Short-circuit current rating (I_{SCPV})	10 kA	10 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA	12.5 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	25 kA	25 kA
Voltage protection level (U_P)	≤ 4 kV	≤ 4.5 kV
Approvals	KEMA, UL, CSA	KEMA, CSA

DEHNguard M YPV SCI ... FM

Modular multipole surge arrester with three-step d.c. switching device for use in PV systems; with remote signalling contact for monitoring device (floating changeover contact).



Type DG M ...	YPV SCI 1000 FM	YPV SCI 1200 FM
Part No.	**952 515**	**952 517**
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II	type 2 / class II
Max. PV voltage (U_{CPV})	1000 V	1200 V
Short-circuit current rating (I_{SCPV})	10 kA	10 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA	12.5 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	25 kA	25 kA
Voltage protection level (U_P)	≤ 4 kV	≤ 4.5 kV
Approvals	KEMA, UL, CSA	KEMA, CSA
Type of remote signalling contact	changeover contact	changeover contact

DEHNguard M PV2 SCI ... (FM)

Modular multipole surge arrester with three-step d.c. switching device for protecting two MPP inputs; for use in PV systems up to 1000 V; FM version with floating remote signalling contact.



Type DG M ...	PV2 SCI 1000	PV2 SCI 1000 FM
Part No.	**952 514**	**952 519**
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II	type 2 / class II
Max. PV voltage (U_{CPV})	1000 V	1000 V
Short-circuit current rating (I_{SCPV})	10 kA	10 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA	12.5 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	25 kA	25 kA
Voltage protection level (U_P)	≤ 4 kV	≤ 4 kV
Approvals	UL, KEMA	UL, KEMA
Type of remote signalling contact	–	changeover contact

DEHNguard M SN1868

Modular multipole surge arrester with three-step d.c. switching device for protecting 3 MPP inputs; for PV systems with remote signalling contact for monitoring device (floating changeover contact).



Type DG M ...	PV2 SCI SN1868 FM
Part No.	**999 799**
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II
Max. PV voltage (U_{CPV})	1000 V
Short-circuit current rating (I_{SCPV})	10 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	25 kA
Voltage protection level (U_P)	≤ 4 kV
Approvals	UL, KEMA
Type of remote signalling contact	changeover contact

Accessories for DEHNguard modular (Y)PV SCI ...

Varistor-Based Protection Module for DEHNguard M (S) (Y)PV SCI



Protection module with integrated back-up fuse for DEHNguard M (Y)PV SCI ... arresters comprising a varistor connected in parallel with a short-circuiting device.

Type	DG MOD PV SCI 500	DG MOD PV SCI 600
Part No.	**952 051**	**952 054**
Max. continuous operating voltage (d.c.) (U_C)	500 V	600 V

Varistor-Based Protection Module for DEHNguard M (S) (Y)PV SCI



Type	DG MOD PV 500	DG MOD PV 600
Part No.	**952 041**	**952 044**
Max. continuous operating voltage (d.c.) (U_C)	500 V	600 V

DEHNguard modular E (Y)PV SCI 1500

Modular multipole surge arrester with three-step d.c. switching device for PV systems up to 1500 V.

DEHNguard ME YPV SCI 1500 (FM)



Modular multipole surge arrester with three-step d.c. switching device for PV systems.

Type DG ME YPV ...	SCI 1500	SCI1500 FM
Part No.	**952 520**	**952 525**
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II	type 2 / class II
Max. PV voltage (U_{CPV})	1500 V	1500 V
Short-circuit current rating (I_{SCPV})	10 kA	10 kA
Total discharge current (8/20 µs) (I_{total})	25 kA	25 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA	12.5 kA
Voltage protection level (U_P)	≤ 6 kV	≤ 6 kV
Approvals	KEMA, UL	KEMA, UL
Type of remote signalling contact	–	changeover contact

Accessories for DEHNguard modular E (Y)PV SCI 1500

Varistor-Based Protection Module for DEHNguard ME YPV SCI and DEHNguard SE PV SCI



Varistor-based protection module for DEHNguard ME YPV SCI 1500 (FM) and DEHNguard SE PV SCI 1500 (FM)

Type	DG MOD E PV SCI 750
Part No.	**952 056**
Max. continuous operating voltage (d.c.) (U_C)	750 V

DEHNguard YPV SCI ... – compact

Multipole surge arrester with three-step d.c. switching device for use in PV systems up to 1000 V.

DEHNguard compact YPV SCI ...



Multipole surge arrester with three-step d.c. switching device for use in PV systems

Type DG YPV SCI ...	600	1000
Part No.	**950 531**	**950 530**
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II	type 2 / class II
Max. PV voltage (U_{CPV})	600 V	1000 V
Short-circuit current rating (I_{SCPV})	1000 A	1000 A
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA	12.5 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	25 kA	25 kA
Voltage protection level (U_P)	≤ 2.5 kV	≤ 4 kV
Approvals	KEMA, UL	KEMA, UL

DEHNguard compact YPV SCI ... FM



Multipole surge arrester with three-step d.c. switching device for use in PV systems, with remote signalling contact for monitoring device (floating changeover contact).

Type DG YPV SCI ...	600 FM	1000 FM
Part No.	**950 536**	**950 535**
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II	type 2 / class II
Max. PV voltage (U_{CPV})	600 V	1000 V
Short-circuit current rating (I_{SCPV})	1000 A	1000 A
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA	12.5 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	25 kA	25 kA
Voltage protection level (U_P)	≤ 2.5 kV	≤ 4 kV
Approvals	KEMA, UL	KEMA, UL
Type of remote signalling contact	changeover contact	changeover contact

DEHNcube PV

Multipole surge arrester with three-step d.c. switching device and IP65 degree of protection for use in PV systems up to 1000 V.

DEHNcube YPV SCI 1000 1M

Two-pole surge arrester with IP 65 degree of protection and three-step d.c. switching device for PV inverters for protecting one MPP input.



Type DCU …	YPV SCI 1000 1M
Part No.	**900 910**
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II
Max. PV voltage (U_{CPV})	1000 V
Short-circuit current rating (I_{SCPV})	1 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	25 kA
Voltage protection level (U_P)	≤ 4 kV
Degree of protection	IP 65

DEHNcube YPV SCI 1000 2M

Four-pole surge arrester with IP 65 degree of protection and three-step d.c. switching device for PV inverters for protecting two MPP inputs.



Type DCU …	YPV SCI 1000 2M
Part No.	**900 920**
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II
Max. PV voltage (U_{CPV})	1000 V
Short-circuit current rating (I_{SCPV})	1 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	12.5 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	25 kA
Voltage protection level (U_P)	≤ 4 kV
Degree of protection	IP 65

DEHNcube 2 YPV 1100 1M 2S

Generator junction box for PV systems of up to 1100 V DC for protecting one MPP input and two strings.
With surge protection and push-in terminals for the input and output.



Type DCU …	2 YPV 1100 1M 2S
Part No.	**900 913** NEW
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II
Max. PV voltage (U_{CPV})	1100 V
Short-circuit current rating (I_{SCPV})	10 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	20 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	40 kA
Voltage protection level (U_P)	≤ 4 kV
Degree of protection	IP 65

DEHNcube 2 YPV 1100 2M 1S

Generator junction box for PV systems of up to 1100 V DC for protecting two MPP inputs and one string.
With surge protection and push-in terminals for the input and output.



Type DCU …	2 YPV 1100 2M 1S
Part No.	**900 921** NEW
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II
Max. PV voltage (U_{CPV})	1100 V
Short-circuit current rating (I_{SCPV})	10 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	20 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	40 kA
Voltage protection level (U_P)	≤ 4 kV
Degree of protection	IP 65

DEHNcube 2 YPV 1100 2M 2S

Generator junction box for PV systems of up to 1100 V DC for protecting two MPP inputs and two strings.
With surge protection and push-in terminals for the input and output.



Type DCU …	2 YPV 1100 2M 2S
Part No.	**900 923** NEW
SPD according to EN 61643-31 / IEC 61643-31	type 2 / class II
Max. PV voltage (U_{CPV})	1100 V
Short-circuit current rating (I_{SCPV})	10 kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_n)	20 kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE] (I_{max})	40 kA
Voltage protection level (U_P)	≤ 4 kV
Degree of protection	IP 65

Connecting Cable for DEHNcube

Preassambled connecting cables for easy and quick connection of DEHNcube DCU YPV SCI 1000 … surge arresters to the equipment of the photovoltaic generator they are supposed to protect.

Y Connecting Cable for DEHNcube

Allows to collect one PV string and connect it to DEHNcube and the inverter.



Type	AL DCU Y PV L3X1000
Part No.	**900 945**
For connecting	1 string cable
Cable cross-section	6 mm²
Cable material	Copper
Degree of protection	IP 65
Length	3x 1000 mm



DEHNrail modular

Modular two-pole surge protective device with a functional design.
For protecting the power supply circuit of industrial electronics equipment against transient surges in switchgear cabinets.

DEHNrail M 2P ...

Two-pole surge arrester consisting of a base part and a plug-in protection module.



General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. mains-side overcurrent protection	25 A gG or B 25 A
Approvals	KEMA, VDE, UL, CSA

Type DR M 2P ...	30	60
Part No.	953 201	953 202
Max. continuous operating voltage (a.c.) (U_C)	30 V (50 / 60 Hz)	60 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	30 V	60 V
Nominal discharge current (8/20 µs) (I_n)	1 kA	1 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	2 kA	2 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 180 / ≤ 630 V	≤ 350 / ≤ 730 V

Type DR M 2P ...	75	150
Part No.	953 203	953 204
Max. continuous operating voltage (a.c.) (U_C)	75 V (50 / 60 Hz)	150 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	75 V	150 V
Nominal discharge current (8/20 µs) (I_n)	2 kA	2 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	4 kA	4 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 400 / ≤ 730 V	≤ 640 / ≤ 800 V

Type DR M 2P ...	255
Part No.	953 200
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	255 V
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V

DEHNrail M 2P ... FM

Two-pole surge arrester consisting of a base part and a plug-in protection module; with floating remote signalling contact.



General technical data:	
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. mains-side overcurrent protection	25 A gG or B 25 A
Approvals	KEMA, VDE, UL, CSA
Type of remote signalling contact	changeover contact

Type DR M 2P ...	30 FM	60 FM
Part No.	953 206	953 207
Max. continuous operating voltage (a.c.) (U_C)	30 V (50 / 60 Hz)	60 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	30 V	60 V
Nominal discharge current (8/20 µs) (I_n)	1 kA	1 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	2 kA	2 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 180 / ≤ 630 V	≤ 350 / ≤ 730 V

Type DR M 2P ...	75 FM	150 FM
Part No.	953 208	953 209
Max. continuous operating voltage (a.c.) (U_C)	75 V (50 / 60 Hz)	150 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	75 V	150 V
Nominal discharge current (8/20 µs) (I_n)	2 kA	2 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	4 kA	4 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 400 / ≤ 730 V	≤ 640 / ≤ 800 V

Type DR M 2P ...	255 FM
Part No.	953 205
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	255 V
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V

DEHNrail M 2P SN1802

Two-pole surge arrester consisting of a base part and a plug-in protection module. Can be used for systems with a load current up to 32 A.



Type DR M 2P ...	255 SN1802
Part No.	953 228
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	255 V
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	32 A gG or B 32 A

Protection module upon request

DEHNrail M 2P SN1803FM

Two-pole surge arrester consisting of a base part and a plug-in protection module; with floating remote signalling contact. Can be used for systems with a load current up to 32 A.



Type DR M 2P ...	255 SN1803FM
Part No.	953 229
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Max. continuous operating voltage (d.c.) (U_C)	255 V
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	32 A gG or B 32 A
Type of remote signalling contact	changeover contact

Protection module upon request

DEHNrail modular, multipole

Modular four-pole surge protective device for protecting the power supply circuit of 230 / 400 V industrial electronics equipment against transient surges in switchgear cabinets.

DEHN rail M 4P ... (FM)

Four-pole surge arrester consisting of a base part and a plug-in protection module for 230 / 400 V systems; FM version with floating remote signalling contact.



Type DR M 4P ...	255	255 FM
Part No.	953 400	953 405
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 / 440 V (50 / 60 Hz)	255 / 440 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA	3 kA
Total discharge current (8/20 µs) [L1+L2+L3+N-PE] (I_{total})	8 kA	8 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1000 / ≤ 1500 V	≤ 1000 / ≤ 1500 V
Max. mains-side overcurrent protection	25 A gG or B 25 A	25 A gG or B 25 A
Approvals	KEMA, VDE	KEMA, VDE
Type of remote signalling contact	–	changeover contact

DEHNrail M 4P SN1872 FM

Four-pole surge arrester consisting of a base part and a plug-in protection module; with floating remote signalling contact. Can be used for systems with a fusing up to 32 A.



Type DR M 4P ...	255 SN1872 FM
Part No.	953 406
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 / 440 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L1+L2+L3+N-PE] (I_{total})	8 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1000 / ≤ 1500 V
Max. mains-side overcurrent protection	32 A gG oder B 32 A
Type of remote signalling contact	changeover contact

Protection module for DEHNrail modular

DR MOD…: Replacement protection modules for all devices of the modular DEHNrail series.

Protection Module for DEHNrail M 2P

Protection module with integrated Y protection circuit.



Type DR MOD ...	30	60
Part No.	953 011	953 012
Nominal discharge current (8/20 µs) (I_n)	1 kA	1 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	2 kA	2 kA
Max. continuous operating voltage (a.c.) (U_C)	30 V	60 V

Type DR MOD ...	75	150
Part No.	953 013	953 014
Nominal discharge current (8/20 µs) (I_n)	2 kA	2 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	4 kA	4 kA
Max. continuous operating voltage (a.c.) (U_C)	75 V	150 V

Type DR MOD ...	255
Part No.	953 010
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Max. continuous operating voltage (a.c.) (U_C)	255 V

Protection Module for DEHNrail M 4P

Four-pole protection module with integrated protective circuit.



Type DR MOD ...	4P 255	4P 255 SN1871
Part No.	953 020	953 021
Nominal discharge current (8/20 µs) (I_n)	3 kA	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	8 kA	8 kA
Max. continuous operating voltage (a.c.) (U_C)	255 V	255 V

SPS Protector

For protecting the power supply circuit of 230 V industrial electronics equipment (e.g. programmable logic controls (PLCs)) against transient surges and high-frequency interference voltages.

SPS Protector

Surge arrester with interference suppressor filter for single-phase 230 V TT and TN systems; with floating remote signalling contact.



Type	SPS PRO
Part No.	**912 253**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal load current (a.c.) (I_L)	3 A
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 800 / ≤ 1000 V
Type of remote signalling contact	break contact

Mains Filter

For protecting the power supply circuit of industrial electronics equipment (e.g. programmable logic controls (PLCs)) against high-frequency interference voltages.

NF 10

Mains filter for protection against balanced and unbalanced interferences.



Type	NF 10
Part No.	**912 254**
Nominal voltage (a.c.) (U_N)	230 V
Nominal load current (a.c.) (I_L)	10 A
Attenuation for f = 1 MHz, balanced	> 64 dB
Attenuation for f = 1 MHz, unbalanced	> 69 dB

DEHNsafe

For protecting terminal equipment against transient surges. For installation into electrical installation systems, e.g. cable ducts or flush-type boxes.

DEHNsafe

Surge protective device for use in cable ducts and flush-type boxes. For single-phase 230 V TT and TN systems.



Type	DSA 230 LA
Part No.	**924 370**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	B 16 A
Fault indication	red light + acoustic signal
Operating state indication	green light

Accessories for DEHNsafe

Central Covering Plate

Single unit, alpha exclusive.



Type	ZAP STW
Part No.	**924 329**
Colour	studio white

Cover Frame

Single unit, alpha exclusive.



Type	AR1 STW
Part No.	**924 328**
Colour	studio white

NSM Protector

Earthed socket outlet with integrated surge protection for protecting electronic equipment against surges. For installation into electrical installation systems. German utility patent.

NSM PRO

Socket outlet with integrated surge protection for single-phase 230 V TT and TN systems.



Type	NSM PRO TW
Part No.	**924 335**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	B 16 A
Fault indication	red light
Operating state indication	green light
DELTA Profil line	titanium white

Accessories for NSM Protector

AR1 Cover Frame

Single unit, suitable for NSM Protector.



Type	AR1 TW
Part No.	**924 336**
Type	DELTA profil, titanium white

STC Module

For protecting electronic devices against surges.
For use with standard earthed socket outlets.

STC 230

Two-pole surge arrester for single-phase 230 V TT and TN systems is snapped on earthed socket outlets.



Type	STC 230
Part No.	**924 350**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	B 16 A
Fault indication	acoustic signal on

VC 280 2

For protecting (electronic) terminal equipment against transient overvoltages. For installation into the enclosure or directly into the device to be protected. German utility patent.

VC 280 2

Mains module with integrated surge protection and floating break contact for installation into the terminal equipment to be protected.



Type	VC 280 2
Part No.	**900 471**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	280 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	B 16 A
Fault indication	remote signalling contact (break contact)

DEHNflex

For protecting terminal equipment against transient overvoltages. For installation into electrical installation systems, e.g. flush-mounted systems, cable ducts and flush-type boxes. German utility patent for DEHNflex A / ... D.

DEHNflex M

Surge arrester for single-phase 230 V TT and TN systems for use in all installation systems of terminal equipment; compact dimensions.



Type DFL ...	M 255
Part No.	**924 396**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	1.5 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	3 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	B 16 A
Fault indication	acoustic signal on
Dimensions	30 x 50 x 11 mm

DEHNflex A

Surge arrester for single-phase 230 V TT and TN systems for use in all installation systems of terminal equipment; with test function; compact dimensions.



Type DFL ...	A 255
Part No.	**924 389**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	B 16 A
Fault indication	acoustic signal on
Dimensions	36 x 46 x 19 mm

DEHNflex D

Surge arrester for single-phase 230 V TT and TN systems for use in all installation systems of terminal equipment; allows series connection; with test function; compact dimensions.



Type DFL ...	D 255
Part No.	**924 395**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1250 / ≤ 1500 V
Max. mains-side overcurrent protection	B 16 A
Fault indication	acoustic signal on
Dimensions	36 x 46 x 19 mm

DEHNprotector

Adapters for protecting the power supply circuit of electronic devices against transient overvoltages (DEHNpro 230 Protector).

DPRO 230 Protector

Adapter with integrated surge protection and child lock.



Type	DPRO 230
Part No.	**909 230**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] / [L/N-PE] (U_P)	≤ 1350 / ≤ 1500 V
Max. mains-side overcurrent protection	B 16 A
Fault indication	red light
Operating state indication	green light

SFL Protector

Multiple socket outlet (six-way) for protecting the power supply circuit of electronic devices against transient overvoltages as well as high-frequency interference voltages.

SFL PRO 6X

Surge protective multiple socket outlet with mains filter.



Type SFL PRO ...	6X
Part No.	**909 250**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level (U_P)	≤ 1.6 kV
Max. mains-side overcurrent protection	B 16 A
Number of socket outlets	6

SFL PRO 19"

Surge protective multiple socket outlet with mains filter for 482.6 mm (19 inches) data cabinets.



Type SFL PRO ...	6X 19"
Part No.	**909 251**
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Nominal discharge current (8/20 µs) (I_n)	3 kA
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level (U_P)	≤ 1.6 kV
Max. mains-side overcurrent protection	B 16 A
Number of socket outlets	6



DEHNrecord SD

Multi-functional power quality measuring device according to IEC 61000-4-30 class A for analysing and evaluating power quality as per EN 50160 deep inside the low-voltage system.

DRC SD 1 1

Multifunctional measurement and analysis device for monitoring voltage quality



Type DRC SD ...	1 1
Part No.	**910 920** NEW
PQ measuring method as per EN 61000-4-30:2015	Class A
Power supply (U_B)	230 V_{AC} (50 Hz) via L1 of the measuring voltage
Nominal input voltage range	230 / 400 V_{AC}
Input voltage range	185–265 V_{AC}

DRC SD 2 1

Multifunctional measurement and analysis device for monitoring voltage quality



Type DRC SD ...	2 1
Part No.	**910 921** NEW
PQ measuring method as per EN 61000-4-30:2015	Class A
Power supply (U_B)	24 V_{DC}
Nominal input voltage range	24 V_{DC} SELV (max. 3 W)
Input voltage range	18–30 V_{DC}

DRC SD ICS 100

With the DEHNrecord SD ICS, impulse currents of up to 100 kA can be detected on insulated cables.



Type DRC SD ...	ICS 100
Part No.	**910 935** NEW
Impulse current measuring range (8/20 µs to 10/350 µs)	up to 100 kA
Amplitude resolution	100 A
Sampling rate	1 µs
Recording time	Max. 5 sec.
Amplitude trigger threshold	Parametrizable via internal Web server
Frequency bandwidth (-3 dB) (BW)	3 kHz
Positioning error (ε_L)	< +/-1%
Connecting cable length	3 m

DRC SD SCS 100

Split-core current transformer for electronic measurement of alternating current (AC) with galvanic isolation between the primary circuit (power) and secondary circuit (measurement) up to 300 V CAT III.



Type DRC SD ...	SCS 100
Part No.	**910 936** NEW
Accuracy class	1 (IEC 61869-2)
Nominal primary current (I_{Pr})	100 A
Expanded primary current (I_{ePr})	120 A
Thermal rated short-time current (I_{th})	Max. 6 kA @ 50 Hz; 60 x IPr (1 s) kA
Dynamic nominal current (I_{dyn})	Max. 3 kA @ 50 Hz; 60 x IPr (1 s) kA
Nominal frequency (f_r)	50 Hz
Frequency bandwidth (-3 dB) (BW)	min. 1.5 kHz
Max. cable diameter	16 mm
Connecting cable length	1 m

DRC SD RCS 1000

Rogowski coil current transformer for electronic measurement of alternating current (AC) with galvanic isolation between the primary circuit (power) and secondary circuit (measurement) up to 1,000 V CAT III.



Type DRC SD ...	RCS 1000 3M	RCS 1000 1M
Part No.	**910 937** NEW	**910 938** NEW
Accuracy class	1 (IEC 61869-2)	1 (IEC 61869-2)
Nominal primary current (I_{Pr})	1000 A	1000 A
Expanded primary current (I_{ePr})	2000 A	2000 A
Nominal frequency (f_r)	50 Hz	50 Hz
Frequency bandwidth (-3 dB) (BW)	3 kHz	3 kHz
Positioning error (ε_L)	< +/-1%	< +/-1%
Max. cable diameter	95 mm	95 mm
Connecting cable length	3 m	1 m

Accessories for DEHNrecord SD

MVS three-phase, six-pole



Type	MVS 3 6 6
Part No.	**900 595**
Type	Three-phase
Number of contact studs	6
Max. installation length	6 Standard DIN module(s)
Nominal cross-section	16 mm²

MVS, four-phase, eight-pole



Type	MVS 4 8 8
Part No.	**900 850**
Type	Four-phase
Number of contact studs	8
Max. installation length	8 Standard DIN module(s)
Nominal cross-section	10 mm²

DIN Rail Mounted Power Supply Unit

Robust power supply in the DIN-rail-mounted enclosure with single-phase, wide-range input for operation in a wide variety of supply systems. The operating state indication on the front side signals the availability of the output voltage. Supply of stationary condition-monitoring devices from the DEHNrecord product range (DRC SCM XT / DRC MCM XT / DRC IRCM / DRC SD 2 1).



Type	PSU DC24 30W
Part No.	**910 499**
Input voltage range	AC 85-264 V; DC 120-373 V
Frequency	44-66 Hz; 0 Hz
Input current (I_e)	0.7 A at AC 110 V / 0.5 A at AC 230 V
Output nominal voltage (U_a)	DC 24 V (SELV)
Output current (I_a)	1.3 A at DC 24 V, max. 0.9 A at any installation position
Recommended backup fuse	circuit breaker 10 A, 16 A, characteristic B, C
Standards / regulations	EN 60950, EN 61204-3, UL 60950, UL 508, GL

DEHNdetect

- Prevention of subsequent damage
- Reduction of maintenance / repair costs
- Reduction of downtimes

Data logger DDT DL



Type DDT ...	DL
Part No.	**915 000**
Measuring range impulse current (I_{imp} 10/350µs)	500 A - 250 kA
Measuring range long stroke current (I_{cc})	60 A - 2.0 kA
Digital outputs	4 (30 V / 0.5 A DC; 30 V / 0.3 A AC)
Communication	via LTE, Ethernet, Modbus TCP
For mounting on	35 mm DIN rail according to EN 60715

Data logger DDT DL TCP



Type DDT ...	DL TCP
Part No.	**915 001**
Measuring range impulse current (I_{imp} 10/350µs)	500 A - 250 kA
Measuring range long stroke current (I_{cc})	60 A - 2.0 kA
Digital outputs	4 (30 V / 0.5 A DC; 30 V / 0.3 A AC)
Communication	via Ethernet, Modbus TCP
For mounting on	35 mm DIN rail according to EN 60715

Blade detection unit DDT BDU



Type DDT ...	BDU
Part No.	**915 051**
Voltage supply	battery (3.6 V AA), service life min. 5 years
Trigger level (I_{cc})	≤ 100 A
Trigger level (I_{imp} 10/350µs)	5 kA
Installation	via glueing, clamping
Communication with data logger	via ZigBee

Measuring coil DDT ICC



General technical data:	
Measuring coil	
Size	up to 20 m
Measuring range impulse current (I_{imp} 10/350µs)	500 A - 250 kA
Measuring range long stroke current (I_{cc})	60 A - 2.0 kA
For mounting on	the relevant wind turbine
Measuring integrator	
Connection to measuring coils	via BNC cable*)
Connection to data logger	via SUB-D cable*)
For mounting on	35 mm DIN rails acc. to EN 60715

Type DDT ...	ICC IMP 5M	ICC IMP 9M
Part No.	**915 105**	**915 109**
Coil length	5 m	9 m

Type DDT ...	ICC IMP 11M	ICC IMP 13M
Part No.	**915 111**	**915 113**
Coil length	11 m	13 m

Type DDT ...	ICC IMP 15M	ICC IMP 17M
Part No.	**915 115**	**915 117**
Coil length	15 m	17 m

Type DDT ...	ICC IMP 20M
Part No.	**915 120**
Coil length	20 m

*) accessory, must be ordered separately.

Impulse Counter

For registering the discharge processes of protective devices in DIN-rail-mounted enclosure (3 modules).

P 4 Impulse Counter



Type	IPC P4
Part No.	**910 513**
Lightning counter according to GB/T 33588.6 and EN/IEC 62561-6	type 1 + type 2
Max. impulse discharge current counted (I_{imp})	100 kA
Min. impulse discharge current counted (I_{imp})	5 kA
Max. discharge current counted (I_n)	100 kA
Min. discharge current counted (I_n)	1 kA
OLED display	electronic counter 0-999
Power supply	DC 9-36V, with 1 Lithium manganese dioxide battery inside for backup power
Resetting device	button on the device for resetting the counter to 0
Dimensions (sensor)	inner Ø: 14 mm
Accessories included in delivery	sensor, cable tie (for fixing the sensor)

*) Battery is not included in the scope of delivery. Battery type CR17335 is recommended.

SPD Test Device

For testing the sparkover voltage of surge arresters. The specimen is connected via the included test cables or special test adapters.

PM 20

Combined device for testing the sparkover voltage of surge arresters (with gas discharge tubes / varistors / Zener diodes). Storage bag and measuring accessories included.



Type	PM 20
Part No.	**910 511**
Nominal voltage (U_N)	8-12 V d.c.
Test parameter: Test voltage	max. 1200 V d.c.
Test parameter: Test current (reference voltage)	1 mA d.c., constant
Measured value indication	alphanumeric, eight-digit LCD
Accessories included in delivery	2 test leads (each 1 m long), 2 safety tapping test clips, 1 plug-in power supply unit (230 V a.c.), 1 storage bag

DEHNpanel

Remote visual indication for surge protective devices with a remote signalling contact for installation into switchgear cabinets.

DPAN L

Visual indicator for surge protective devices installed in switchgear cabinets.



Type	DPAN L
Part No.	**910 200**
Voltage supply	2x 1.5 V lithium batteries, size AA
Operating state / fault indication	green LED (flashing) / red LED (flashing)
Flashing frequency	0.1 s on / 1.3 s off
Degree of protection (front / rear side)	IP 40 / IP 20
Mounting dimensions	92 x 45 mm
Dimensions	96 x 48 x 75 mm

Wiring Accessories DK

- Allows changing of the wiring level
- For a lightning current suitable installation of arrester combinations

Feed-Through Terminal DK 25

Feed-through terminal for busbar wiring.



Type	DK 25
Part No.	**952 699**
Nominal voltage (a.c. / d.c.) (U_N)	500 V
Nominal load current (a.c.) (I_L)	100 A
Lightning impulse current (10/350 µs)	100 kA
Cross-sectional area (min.)	1.5 mm² solid / flexible
Cross-sectional area (max.)	25 mm² stranded / 16 mm² flexible

Wiring Accessories STAK

Allows EMC-optimised feed-through wiring according to DIN VDE 0100-534

STAK 25 Pin-shaped Terminal

Pin-shaped terminal for EMC-optimised through-wiring of lightning current and surge arresters according to IEC 60364-5-53.



Type STAK ...	25
Part No.	**952 589**
Nominal voltage (a.c. / d.c.) (U_N)	600 V
Max. PV voltage (U_{CPV}) when used in combination with DEHNguard M YPV ...	1200 V
Lightning impulse current (10/350 µs)	25 kA
Discharge current (8/20 µs)	50 kA
Cross-sectional area (min.)	1.5 mm² solid / flexible
Cross-sectional area (max.)	25 mm² stranded / 16 mm² flexible
Type of connection	front

STAK 3X16 Pin-shaped Terminal

Pin-shaped terminal for EMC-optimised through-wiring of lightning current and surge arresters according to IEC 60364-5-53.



Type STAK ...	3X16
Part No.	**900 588**
Nominal voltage (a.c. / d.c.) (U_N)	690 V / 1500 V
Load current at V-wiring	80 A
Lightning impulse current (10/350 µs)	25 kA
Cross-sectional area (min.)	1.5 mm² solid / flexible
Cross-sectional area (max.)	16 mm² stranded / 10 mm² flexible
Type of connection	front

STAK 2X16 Pin-shaped Terminal

Pin-shaped terminal for EMC-optimised through-wiring of lightning current and surge arresters according to IEC 60364-5-53.



Type STAK ...	2X16
Part No.	**900 589**
Lightning impulse current (10/350 µs)	25 kA
Cross-sectional area (min.)	2x 1.5 mm²
Cross-sectional area (max.)	2x max. 16 mm²
Type of connection	front (double terminal)

Insulating Enclosures

Insulating enclosure for the installation of surge protective devices.

- Degree of protection: IP 54 and IP 65
- With transparent cover
- Grey enclosure

IGA 10 V2 IP54

Lightning-current-tested insulating enclosure with a max. capacity of ten modules; with grommet flange for 11 EPDM cables (Ø5-30 mm) and three mounted M20 grommet openings with lock nut; ideally suited for series connection.



Type IGA ...	10 V2 IP54
Part No.	902 315
Degree of protection	IP 54
Type	lightning-current-tested
Number of cable entries	4x for cables Ø5-7mm; 3x for cables Ø7-10 mm; 2x for cables Ø10-14 mm or Ø15-30 mm each; 3x for cables Ø8-13 mm
Capacity	10 modules, DIN 43880
Dimensions (W x H x D)	200 x 300 x 132 mm
Cover	sealable

IGA 7 IP54

Lightning-current-tested insulating enclosure with a max. capacity of seven modules; with EPDM grommet flange for two cables (Ø1-25 mm) and three mounted M20 grommet openings with lock nut; ideally suited for series connection.



Type IGA ...	7 IP54
Part No.	902 314
Degree of protection	IP 54
Type	lightning-current-tested
Number of cable entries	2x for cables Ø1-25 mm; 3x for cables Ø8-13 mm
Capacity	7 modules, DIN 43880
Dimensions (W x H x D)	175 x 250 x 100 mm
Cover	sealable

IGA 6 IP54

Lightning-current-tested insulating enclosure for arresters with a capacity of six modules; with knockouts for cable entry and plug-in glands; ideally suited for feed-through wiring.



Type IGA ...	6 IP54
Part No.	902 485
Degree of protection	IP 54
Type	lightning-current-tested
Number of cable entries	2 plug-in glands for cables Ø8-23 mm (M32 knockout)
Capacity	6 modules, DIN 43880
Dimensions (W x H x D)	165 x 255 x 115 mm
Cover	sealable

IGA 12 IP54

Insulating enclosure for arresters with a capacity of 12 modules; with integrated, elastic seal membrane for cable entry; ideally suited for feed-through wiring.



Type IGA ...	12 IP54
Part No.	902 471
Degree of protection	IP 54
Number of cable entries	8x for cables Ø7-12 mm; 8x for cables Ø7-14 mm; 4x for cables Ø12-20 mm; 1x for cables Ø16.5-29 mm (top and bottom)
PE / N quantity x cross-section	3x 25 mm², 12x 4 mm², Cu
Capacity	12 modules, DIN 43880
Dimensions (W x H x D)	295 x 333 x 129 mm

IGA 12 IP65

Insulating enclosure for arresters with a capacity of 12 modules; with integrated, elastic seal membrane for cable entry; ideally suited for feed-through wiring.



Type IGA ...	12 IP65
Part No.	902 316
Degree of protection	IP 65
Type	lightning-current-tested
Number of cable entries	8x for cables Ø7-12 mm; 8x for cables Ø7-14 mm; 4x for cables Ø12-20 mm; 1x for cables Ø16.5-29 mm (top and bottom)
PE / N quantity x cross-section	3x 25 mm², 12x 4 mm², Cu
Capacity	12 modules, DIN 43880
Dimensions (W x H x D)	295 x 333 x 129 mm

IGA 24 IP54

Insulating enclosure for arresters with a capacity of 2x 12 modules; with integrated, elastic seal membrane for cable entry; ideally suited for feed-through wiring.



Type IGA ...	24 IP54
Part No.	902 472
Degree of protection	IP 54
Number of cable entries	8x for cables Ø7-12 mm; 8x for cables Ø7-14 mm; 4x for cables Ø12-20 mm; 1x for cables Ø16.5-29 mm (top and bottom)
PE / N quantity x cross-section	6x 25 mm², 24x 4 mm², Cu
Capacity	24 modules (2x 12 modules), DIN 43880
Dimensions (W x H x D)	295 x 458 x 129 mm

Accessories for Insulating Enclosures

Sealing Device

For sealing between the lower and upper part of IGA 12 and IGA 24 insulating enclosures (doors can be sealed without additional part).



Type	PLOV IGA 12 24
Part No.	902 317
Material	aluminium

Earthing clip / modular wiring system

Busbars for earth-side (single-phase) connection, connection between neutral conductor N and N' (two-phase) and phase-side connection (three-phase and four-phase).

MVS single-phase, two-pole

For connecting the earth terminal of e.g. 2 DEHNguard S surge arresters to earth.



Type	MVS 1 2
Part No.	900 617
Type	single-phase
Number of contact studs	2
Max. installation length	2 module(s)
Nominal cross-section	16 mm²

MVS single-phase, three-pole

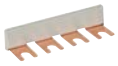
For connecting the earth terminal of e.g. 3 DEHNguard S surge arresters to earth.



Type	MVS 1 3
Part No.	900 615
Type	single-phase
Number of contact studs	3
Max. installation length	3 module(s)
Nominal cross-section	16 mm²

MVS single-phase, four-pole

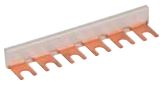
For connecting the earth terminal of e.g. 4 DEHNguard S surge arresters to earth.



Type	MVS 1 4
Part No.	900 610
Type	single-phase
Number of contact studs	4
Max. installation length	4 module(s)
Nominal cross-section	16 mm²

MVS single-phase, six-pole

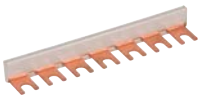
For connecting the earth terminal of e.g. 3 type 1 SPDs with two-module enclosure to earth.



Type	MVS 1 6
Part No.	900 815
Type	single-phase
Number of contact studs	6
Max. installation length	6 module(s)
Nominal cross-section	16 mm²

MVS single-phase, seven-pole

For connecting the earth terminal of e.g. 3 DEHNbloc Maxi and 1 DEHNgap Maxi in 3+1 configuration to earth.



Type	MVS 1 7
Part No.	900 848
Type	single-phase
Number of contact studs	7
Max. installation length	7 module(s)
Nominal cross-section	16 mm²

MVS single-phase, eight-pole

For connecting the earth terminal of e.g. 4 DEHNbloc Maxi lightning current arresters to earth.



Type	MVS 1 8
Part No.	900 611
Type	single-phase
Number of contact studs	8
Max. installation length	8 module(s)
Nominal cross-section	16 mm²

MVS three-phase, six-pole, 6 Modules

For phase-side connection of surge arresters.



Type	MVS 3 6 6
Part No.	900 595
Type	three-phase
Number of contact studs	6
Max. installation length	6 module(s)
Nominal cross-section	16 mm²

MVS three-phase, six-pole, 9 Modules

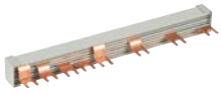
For phase-side connection of three-pole surge arresters to fuse holders (for 1.5-module enclosures).



Type	MVS 3 6 9
Part No.	900 839
Type	three-phase
Number of contact studs	6
Max. installation length	9 module(s)
Nominal cross-section	16 mm²

MVS four-phase, eight-pole

For phase-side connection of DIN rail mounted devices to DEHNventil M TNS and TT.



Type	MVS 4 8 8
Part No.	900 850 NEW
Type	four-phase
Number of contact studs	8
Max. installation length	8 module(s)
Nominal cross-section	10 mm²

MVS single-phase, four-pole, 8 Modules

Modular wiring clip for TT systems, insulated, single-phase, four-pole with connection clamp up to 50 mm².



Type	MVS 1 4 8 TT
Part No.	900 849 NEW
Type	Single-phase
Number of contact studs	4
Dimensions	166 x 38.1 x 22 mm
Max. lightning current (10/350 µs) based on DIN EN 61643-11 (I_{imp})	100 kA
Material of the electrical conductor	E-Cu-ETP
Insulation material	PC
Cross-sectional area of the feed terminal	10–50 mm (solid or stranded) / 6–35 mm² (flexible with wire end ferrule)
Max. tightening torque of the clamping screw	7 Nm
Insulated design	Yes

Earthing Clip for 1.5-module Enclosures, single-phase, two-pole



Earthing clip for connecting e.g. two SPDs with 1.5-module enclosure, with terminal.

Type	EB 1 2 1.5
Part No.	**900 460**
Type	single-phase
Number of contact studs	2
Dimensions	34 x 60 x 28 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm²

Earthing Clip for two-module Enclosures, single-phase, three-pole



Earthing clip for connecting e.g. three SPDs with two-module enclosure, with terminal.

Type	EB DG 1000 1 3
Part No.	**900 411**
Type	single-phase
Number of contact studs	3
Dimensions	34 x 112 x 28 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm²

Earthing Clip for 1.5-module Enclosures, single-phase, three-pole



Earthing clip for connecting e.g. three SPDs with 1.5-module enclosure, with terminal.

Type	EB 1 3 1.5
Part No.	**900 418**
Type	single-phase
Number of contact studs	3
Dimensions	34 x 85 x 28 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm²

Earthing Clip for two-module Enclosures, single-phase, four-pole



Earthing clip for connecting e.g. four SPDs in a two-module enclosure, with terminal.

Type	EB 1 4 9
Part No.	**900 417**
Type	single-phase
Number of contact studs	4
Dimensions	34 x 148 x 28 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm²

Earthing Clip for 1.5-module Enclosures, single-phase, four-pole



Earthing clip for connecting e.g. four SPDs with 1.5-module enclosure, with terminal.

Type	EB 1 4 1.5
Part No.	**900 429**
Type	single-phase
Number of contact studs	4
Dimensions	34 x 112 x 28 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm²

Earthing Clip for three-module Enclosures, single-phase, three-pole



Earthing clip for connecting e.g. three SPDs with three-module enclosure, with terminal.

Type	EB 1 3 10
Part No.	**900 461**
Type	single-phase
Number of contact studs	3
Dimensions	34 x 158 x 28 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm²

Earthing Clip for two-module Enclosures, single-phase, two-pole



Earthing clip for connecting e.g. two SPDs with two-module enclosure, with terminal.

Type	EB 1 2 5
Part No.	**900 419**
Type	single-phase
Number of contact studs	2
Dimensions	34 x 77 x 28 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm²

Earthing Clip for three-module Enclosures, single-phase, four-pole



Earthing clip for connecting e.g. four SPDs with three-module enclosure, with terminal.

Type	EB 1 4 13
Part No.	**900 462**
Type	single-phase
Number of contact studs	4
Dimensions	34 x 212 x 28 mm
Material	copper and tin-plated brass
Terminal	up to 25 mm²

Surge Protection for Information Technology Systems

Find the right product quickly and easily:
https://www.dehn-international.com/en/selection-guides-and-configurators

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SPDs for Information Technology Systems



Use of arresters

The application guide CLC TS 61643-22 / IEC 61643-22 describes principles for selecting and using arresters. It defines basic requirements on the loads with which arresters are tested for using arresters at the different zone transitions of the lightning protection zone concept according to IEC / EN 62305. The protection components at the different lightning protection zones must therefore cope with with defined pulse categories.

Lightning protection zone	LPZ 0 / 1	LPZ 1 / 2	LPZ 2 / 3
Entrance point into the building	D1		
Sub-distribution board		C2	
Terminal device			C1

Impulse category requirements for SPDs for information technology applications according to the lightning protection zone concept

Selection of arresters for information technology systems

The following must be observed when selecting arresters:

- Protective effect
  [Yellow/Line SPD class (discharge capacity and voltage protection level)]
- System parameters
  (system voltage, nominal current and transmission parameters)
- Installation environment
  (design, connection conditions and approvals)

The selection guide according to interface / signal on **dehn-international.com/en/selection-guides-and-configurators** facilitates the selection of the right arrester.

To make the selection of arresters easier for the user, the SPD class (TYPE classification) for Yellow/Line arresters is based on that of arresters (Red/Line) for power supply systems. However, so-called combined arresters can also be used universally at the different lightning protection zones. Consequently, the different impulse categories (D1, C2, C1) for the arresters are specified according to their possible point of use.

LPZ	EN / IEC 61643-21	EN / IEC 61643-11
0/1	D1 | 0.5 … 2,5 kA (10/350 µs)	Type 1 / I
1/2	C2 | 1 … 5 kA (8/20 µs)	Type 2 / II
2/3	C1 | 0.25 … 1 kA (8/20 µs)	Type 3 / III

Impulse categories and arrester classification for arresters in information technology and power supply systems

Relevant product standard for arresters:

IEC / DIN EN 61643-21
Low-voltage surge protective devices – Part 21: Surge protective devices connected to telecommunications and signalling networks – Performance requirements and testing methods.

Discharge capacity

According to IEC / EN 61643-21 arresters must be tested with at least one impulse voltage and impulse current from the table below with the specified quantity of impulses. Further tests may be performed – even with different impulse values or quantities. The max. voltage level measured during the test(s) at the output of the device is specified as voltage protection level U_P. Category C above all represents interference impulses with a steep rate of rise and low energy, while interference impulses of category D are supposed to simulate high energy loads caused by injected partial lightning currents. The relevant category is specified in the technical data of the arresters [see discharge capacity (I_n, I_{imp}) and voltage protection level (U_P)].

Category	Type of test	Impulse voltage	Impulse current	Minimum quantity of impulses	Test for
C1	fast rate of rise	0.5 to 2 kV, 1.2/50 µs	0.25 to 1 kA, 8/20 µs	300	Surge C2 arrester
C2		2 to 10 kV, 1.2/50 µs	1 to 5 kA, 8/20 µs	10	
C3		≥ 1 kV, 1 kV/µs	10 to 100 A, 10/1000 µs	300	
D1	high energy	≥ 1 kV	0.5 to 2.5 kA, 10/350 µs	2	Lightning current arrester / Combined lightning current and surge arrester

Impulse voltages and currents (preferred values) for determining the voltage-limiting characteristics (excerpt from Table 3 of IEC / EN 61643-21)

Immunity of terminal equipment to be protected

During electromagnetic compatibility (EMC) tests, electrical and electronic equipment (devices) must have a certain immunity to conducted interferences (surges). The requirements on the immunity and the test set-up are described in IEC / EN 61000-4-5.

Since the devices are used in different electromagnetic environments, they must have different immunities. The immunity of a device depends on the test level. To classify the different immunities of terminal equipment, test levels are subdivided into four different levels (1 to 4). Test level 1 places the lowest requirement on the immunity of terminal equipment. The test level is specified in the arrester documentation or can be requested from the manufacturer of the arrester.

Test levels 1 – 4 according to EN 61000-4-5	Corresponds to the charging voltage of the test generator
1	0.5 kV
2	1 kV
3	2 kV
4	4 kV

Protective effect of arresters

Yellow/Line arresters for use in information technology systems are capable of limiting conducted interference to a safe level so that the immunity of the terminal equipment is not exceeded. For example, an arrester with a let-through value below the EMC test values of the terminal device must be selected for a terminal device tested with test level 2: Impulse voltage < 1 kV in combination with an impulse current of some amperes (depending on the coupling network).

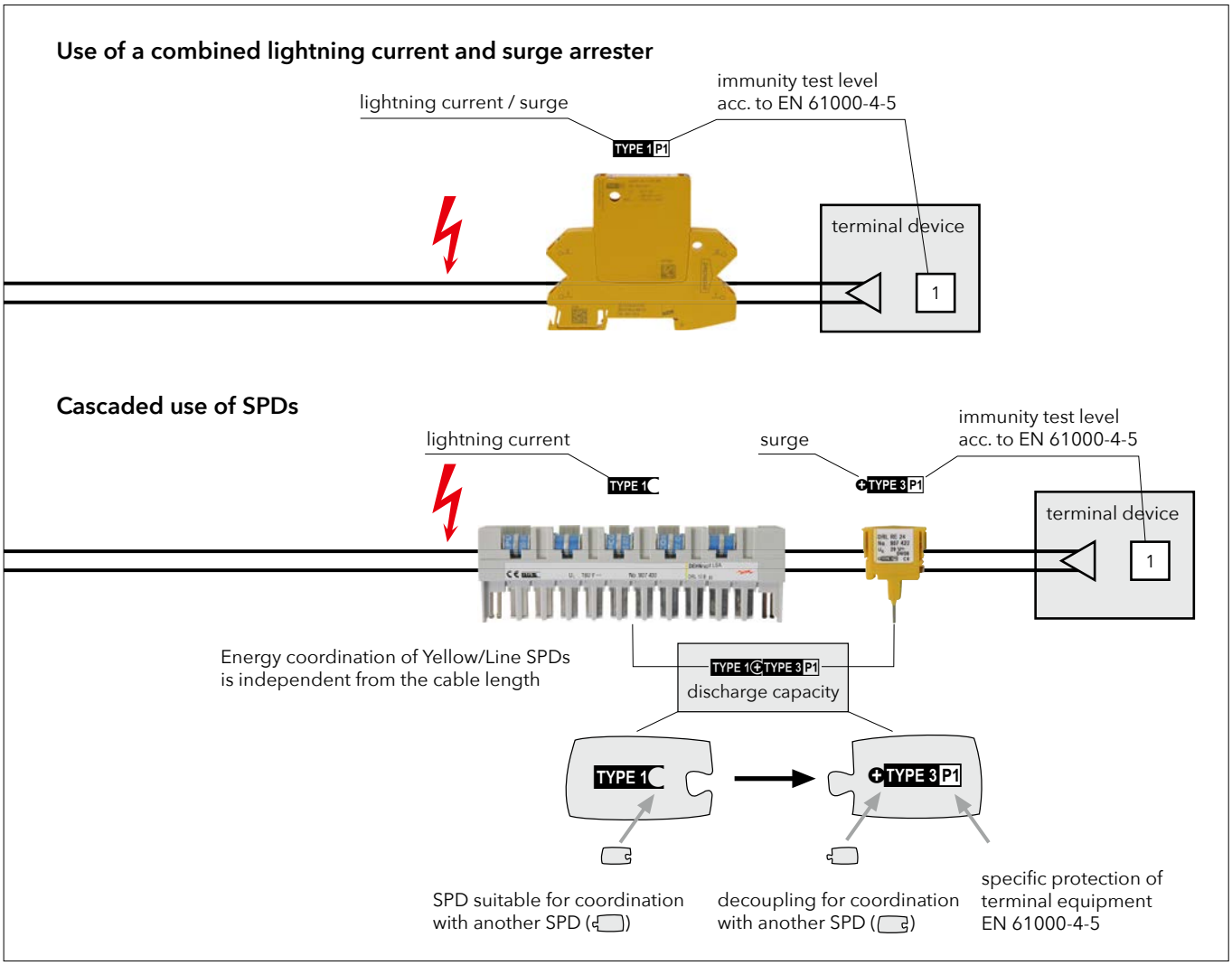
Yellow/Line SPD Classes – Symbols

All SPDs of the Yellow/Line family for use in information technology systems are assigned to a Yellow/Line SPD class and marked with a symbol in the technical data sheet and on their rating plates.

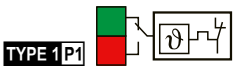
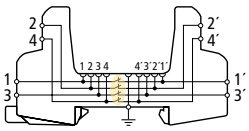
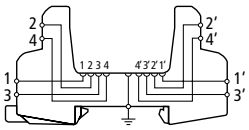
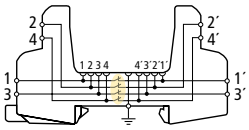
The symbol for the Yellow/Line SPD class graphically combines three important characteristics of the SPD and can be a single symbol or a combination of individual symbols:

Characteristics	Single symbol	Definition
Discharge capacity of an SPD (according to the categories from IEC / EN 61643-21)	TYPE 1	Impulse D1 (10/350), lightning impulse current 0.5 to 2.5 kA/line ⇨ exceeds the discharge capacity of TYPE 2 – TYPE 4
	TYPE 2	Impulse C2 (8/20), increased impulse load 1 to 5 kA/line ⇨ exceeds the discharge capacity of TYPE 3 – TYPE 4
	TYPE 3	Impulse C1 (8/20), impulse load 0.25 to 1 kA/line ⇨ exceeds the discharge capacity of TYPE 4
	TYPE 4	Load < TYPE 3
Protective effect of an SPD (limitation below the test levels according to EN 61000-4-5)	P1	Required test level of the terminal device: 1 or higher
	P2	Required test level of the terminal device: 2 or higher
	P3	Required test level of the terminal device: 3 or higher
	P4	Required test level of the terminal device: 4 or higher
Energy coordination (with another Yellow/Line SPD)	⊕	SPD with decoupling impedance, suitable for coordination with an SPD marked with ↄ.
	ↄ	SPD is suitable for coordination with an SPD with decoupling impedance ⊕.

Examples of energy-coordinated SPDs according to the Yellow/Line SPD class:



Pluggable SPDs – DIN Rail Mounted

Type	Basic circuit diagram / Symbol	Product	Part No.	Page
BLITZDUCTORconnect – Modular				
BCO ML2 ... ▪ Combined lightning current and surge arrester with a modular design ▪ With push-in connection technology and signal disconnection ▪ With vibration-proof secR module locking mechanism ▪ Integrated LifeCheck and visual status indication			**927 2XX**	311
BCO ML2 BD EX 24 ▪ Surge arrester with a modular design for hazardous areas ▪ With push-in connection technology and signal disconnection ▪ With vibration-proof secR module locking mechanism ▪ Integrated LifeCheck and visual status indication			**927 284**	312
Base Parts BXT BAS / BSP BAS 4				
BXT BAS ▪ Universal base part for protection modules of the BLITZDUCTOR XT / XTU and BLITZDUCTOR SP series ▪ No signal disconnection if the protection module is removed ▪ Connection of up to four lines			**920 300**	315
BSP BAS 4 ▪ Universal base part for protection modules of the BLITZDUCTOR XT / XTU and BLITZDUCTOR SP series ▪ Signal disconnection if the protection module is removed ▪ Connection of up to four lines			**926 304**	315
BLITZDUCTOR XT				
BXT ML ... ▪ Combined lightning current and surge arrester modules ▪ With integrated LifeCheck ▪ Two-pole and four-pole versions			**920 XXX**	316
BXT M2 BD HC5A 24 ▪ Combined lightning current and surge arrester module for protecting 1 pair of unearthed signal circuits ▪ Optimal for protecting DC signal circuits up to a nominal current of 5 A ▪ For controlling motor-driven actuators with high starting and operating currents			**920 296**	319
BLITZDUCTOR XTU				
BXTU ML ... ▪ Universal lightning current and surge arrester modules ▪ With integrated LifeCheck ▪ With integrated actiVsense technology ▪ Two-pole and four-pole versions			**920 349** **920 249**	320 320
BXT BAS EX ▪ Universal base part for protection modules of the BLITZDUCTOR XT Ex (i) series ▪ No signal disconnection if the protection module is removed ▪ Connection of up to four lines			**920 301**	320
BXT ML ... ▪ Surge arrester modules for hazardous areas ▪ With integrated LifeCheck ▪ Two-pole and four-pole versions			**920 XXX**	321

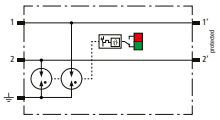
BLITZDUCTORconnect – Modular

- Combined lightning current and surge arrester with a modular design and integrated visual status indication
- Push-in connection technology and signal disconnection
- With vibration-proof secR module locking mechanism
- Intrinsically safe version for hazardous areas

BCO ML2 B 180

Space-saving, modular lightning current arrester with a width of 6 mm and push-in connection technology with status indication for protecting two single lines for lightning equipotential bonding as well as indirect earthing of shielded cables. With signal disconnection for maintenance purposes.



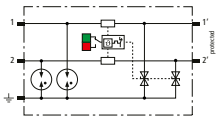


Type BCO ...	ML2 B 180
Part No.	**927 210**
SPD class	TYPE 1
Nominal voltage (U_N)	180 V
Max. continuous operating voltage (d.c.) (U_C)	180 V
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	0 ohm(s)
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL

BCO ML2 BE

Space-saving, modular combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting two single lines sharing a common reference potential as well as unbalanced interfaces. With signal disconnection for maintenance purposes.





General technical data:	
SPD class	TYPE 1P1
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA

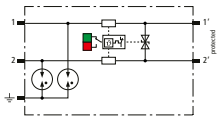
Type BCO ...	ML2 BE 12	ML2 BE 24
Part No.	**927 222**	**927 224**
Nominal voltage (U_N)	12 V	24 V
Max. continuous operating voltage (d.c.) (U_C)	15 V	33 V
Nominal current at 70 °C (I_L)	0.75 A	0.75 A
Series resistance per line	1 ohm(s)	1 ohm(s)
Cut-off frequency line-line (f_G)	1.4 MHz	3.4 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL, CSA, ATEX, IECEx, CCC, SIL

Type BCO ...	ML2 BE 48	ML2 BE 180
Part No.	**927 225**	**927 227** NEW
Nominal voltage (U_N)	48 V	180 V
Max. continuous operating voltage (d.c.) (U_C)	54 V	180 V
Nominal current at 70 °C (I_L)	0.75 A	0.5 A
Series resistance per line	1 ohm(s)	1.8 ohm(s)
Cut-off frequency line-line (f_G)	5 MHz	10 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL

BCO ML2 BD

Space-saving, modular combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting one pair of unearthed balanced interfaces. With signal disconnection for maintenance purposes.





General technical data:	
SPD class	TYPE 1P2
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA

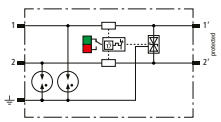
Type BCO ...	ML2 BD 12	ML2 BD 24
Part No.	**927 242**	**927 244**
Nominal voltage (U_N)	12 V	24 V
Max. continuous operating voltage (d.c.) (U_C)	15 V	36 V
Nominal current at 70 °C (I_L)	0.75 A	0.75 A
Series resistance per line	1 ohm(s)	1 ohm(s)
Cut-off frequency line-line (f_G)	2.6 MHz	5.8 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL, CSA, ATEX, IECEx, CCC, SIL

Type BCO ...	ML2 BD 48	ML2 BD 180
Part No.	**927 245**	**927 247** NEW
Nominal voltage (U_N)	48 V	180 V
Max. continuous operating voltage (d.c.) (U_C)	56 V	180 V
Nominal current at 70 °C (I_L)	0.75 A	0.5 A
Series resistance per line	1 ohm(s)	1.8 ohm(s)
Cut-off frequency line-line (f_G)	3.6 MHz	10 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL

BCO ML2 BE HF

Space-saving, modular combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting two single lines of high-frequency transmissions sharing a common reference potential as well as unbalanced interfaces. With signal disconnection for maintenance purposes.



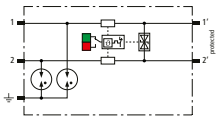


Type BCO ...	ML2 BE HF 5	ML2 BE HF 24
Part No.	**927 270**	**927 274** NEW
SPD class	TYPE 1P1	TYPE 1P1
Nominal voltage (U_N)	5 V	24 V
Max. continuous operating voltage (d.c.) (U_C)	8.5 V	36 V
Nominal current at 70 °C (I_L)	0.75 A	0.75 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
Series resistance per line	1 ohm(s)	1 ohm(s)
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL

BCO ML2 BD HF

Space-saving, modular combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting one pair of unearthed high-frequency bus systems as well as balanced interfaces. With signal disconnection for maintenance purposes.



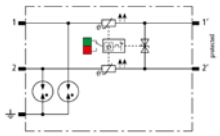


Type BCO ...	ML2 BD HF 5	ML2 BD HF 24
Part No.	**927 271**	**927 275** NEW
SPD class	TYPE 1 P2	TYPE 1 P2
Nominal voltage (U_N)	5 V	24 V
Max. continuous operating voltage (d.c.) (U_C)	8.5 V	36 V
Nominal current at 70 °C (I_L)	0.75 A	0.75 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
Series resistance per line	1 ohm(s)	1 ohm(s)
Cut-off frequency line-line (f_G)	100 MHz	100 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL

BCO ML2 BPD 24

Space-saving, modular combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting one pair in 24 V DC systems. Also suitable for use with earthed negative pole; integrated PTC resistors allow for secure resetting of the arrester after interference in the system circuit with short-circuit currents of up to 40 A. With signal disconnection for maintenance purposes.



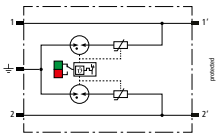


Type BCO ...	ML2 BPD 24
Part No.	**927 214** NEW
SPD class	TYPE 1 P2
Nominal voltage (U_N)	24 V
Max. continuous operating voltage (d.c.) (U_C)	33 V
Nominal current at 70 °C (I_L)	0.1 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	10 ohm(s)
Cut-off frequency line-line (f_G)	4.5 MHz
Approvals	UL

BCO ML2 MVG 230

Space-saving, modular surge arrester with a width of 6 mm and push-in connection technology with status indication for protecting 2 lines of stranded unearthed signal interfaces with a nominal voltage of 230 V. With signal disconnection for maintenance purposes.
Meets, amongst other things, the requirements for signalling systems in the railway industry (e.g. DB RIL 819.0808 railway directive).

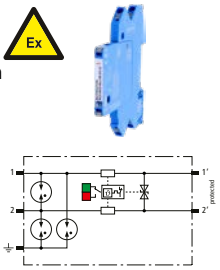




Type BCO ...	ML2 MVG 230
Part No.	**927 290** NEW
SPD class	TYPE 2 P3
Nominal voltage (U_N)	230 V
Nominal current at 80 °C (I_L)	3 A
C2 Total nominal discharge current (8/20 µs) (I_n)	6 kA
Series resistance per line	0 ohm(s)
Approvals	SIL

BCO ML2 BD EX 24

Space-saving, modular combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting one pair of intrinsically safe measuring circuits and bus systems, meets FISCO requirements. Insulation strength > 500 V line-ground. With signal disconnection for maintenance purposes.

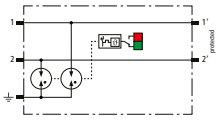


Type BCO ...	ML2 BD EX 24
Part No.	**927 284**
SPD class	TYPE 1 P2
Nominal voltage (U_N)	24 V
Max. continuous operating voltage (d.c.) (U_C)	36 V
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	1 ohm(s)
Cut-off frequency line-line (f_G)	3.5 MHz
Approvals	ATEX, IECEx, CCC

BCO MOD ML2 B

Protection module with a width of 6 mm for BLITZDUCTORconnect lightning current arrester with status inidication for protecting two single lines for lightning equipotential bonding as well as indirect earthing of shielded cables.

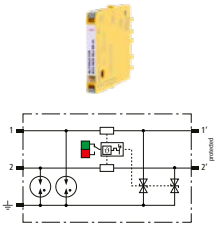




Type BCO ...	MOD ML2 B 180
Part No.	**927 010**
SPD class	TYPE 1
Nominal voltage (U_N)	180 V
Max. continuous operating voltage (d.c.) (U_C)	180 V
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	0 ohm(s)
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL

BCO MOD ML2 BE

Protection module with a width of 6 mm for BLITZDUCTORconnect combined arrester with status inidication for protecting two single lines sharing a common reference potential as well as unbalanced interfaces.



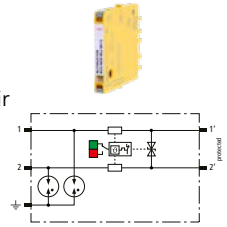
General technical data:	
SPD class	TYPE 1 P1
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA

Type BCO ...	MOD ML2 BE 12	MOD ML2 BE 24
Part No.	927 022	927 024
Nominal voltage (U_N)	12 V	24 V
Max. continuous operating voltage (d.c.) (U_C)	15 V	33 V
Nominal current at 70 °C (I_L)	0.75 A	0.75 A
Series resistance per line	1 ohm(s)	1 ohm(s)
Cut-off frequency line-line (f_G)	1.4 MHz	3.4 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL, CSA, ATEX, IECEx, CCC, SIL

Type BCO ...	MOD ML2 BE 48	MOD ML2 BE 180
Part No.	927 025	927 027 NEW
Nominal voltage (U_N)	48 V	180 V
Max. continuous operating voltage (d.c.) (U_C)	54 V	180 V
Nominal current at 70 °C (I_L)	0.75 A	0.5 A
Series resistance per line	1 ohm(s)	1.8 ohm(s)
Cut-off frequency line-line (f_G)	5 MHz	10 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL, SIL

BCO MOD ML2 BD

Protection module with a width of 6 mm for BLITZDUCTORconnect combined arrester with status inidication for protecting one pair of unearthed balanced interfaces.



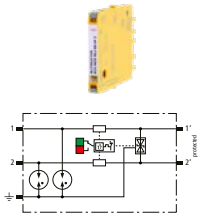
General technical data:	
SPD class	TYPE 1 P2
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA

Type BCO ...	MOD ML2 BD 12	MOD ML2 BD 24
Part No.	927 042	927 044
Nominal voltage (U_N)	12 V	24 V
Max. continuous operating voltage (d.c.) (U_C)	15 V	36 V
Nominal current at 70 °C (I_L)	0.75 A	0.75 A
Series resistance per line	1 ohm(s)	1 ohm(s)
Cut-off frequency line-line (f_G)	2.6 MHz	5.8 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL, CSA, ATEX, IECEx, CCC, SIL

Type BCO ...	MOD ML2 BD 48	MOD ML2 BD 180
Part No.	927 045	927 047 NEW
Nominal voltage (U_N)	48 V	180 V
Max. continuous operating voltage (d.c.) (U_C)	56 V	180 V
Nominal current at 70 °C (I_L)	0.75 A	0.5 A
Series resistance per line	1 ohm(s)	1.8 ohm(s)
Cut-off frequency line-line (f_G)	3.6 MHz	10 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL, SIL

BCO MOD ML2 BE HF

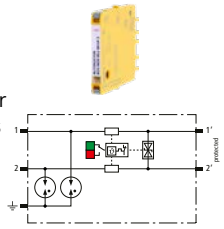
Protection module with a width of 6 mm for BLITZDUCTORconnect combined arrester with status inidication for protecting two single lines of high-frequency transmissions sharing a common reference potential as well as unbalanced interfaces.



Type BCO ...	MOD ML2 BE HF 5	MOD ML2 BE HF 24
Part No.	927 070	927 074 NEW
SPD class	TYPE 1 P1	TYPE 1 P1
Nominal voltage (U_N)	5 V	24 V
Max. continuous operating voltage (d.c.) (U_C)	8.5 V	36 V
Nominal current at 70 °C (I_L)	0.75 A	0.75 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
Series resistance per line	1 ohm(s)	1 ohm(s)
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL, SIL

BCO MOD ML2 BD HF

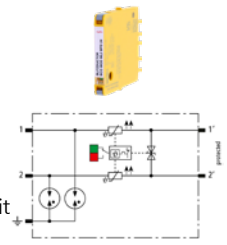
Protection module with a width of 6 mm for BLITZDUCTORconnect combined arrester with status inidication for protecting one pair of unearthed high-frequency bus systems as well as balanced interfaces.



Type BCO ...	MOD ML2 BD HF 5	MOD ML2 BD HF 24
Part No.	927 071	927 075 NEW
SPD class	TYPE 1 P2	TYPE 1 P2
Nominal voltage (U_N)	5 V	24 V
Max. continuous operating voltage (d.c.) (U_C)	8.5 V	36 V
Nominal current at 70 °C (I_L)	0.75 A	0.75 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
Series resistance per line	1 ohm(s)	1 ohm(s)
Cut-off frequency line-line (f_G)	100 MHz	100 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL	UL, SIL

BCO MOD ML2 BPD

Combined arrester protection module with a width of 6 mm for BLITZDUCTORconnect with status indication for protecting one pair in 24 V DC systems. Also suitable for use with an earthed negative pole. Integrated PTC resistors allow for secure resetting of the arrester after interference in the system circuit with short-circuit currents of up to 40 A.

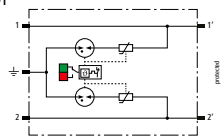


Type BCO ...	MOD ML2 BPD 24
Part No.	927 014 NEW
SPD class	TYPE 1 P2
Nominal voltage (U_N)	24 V
Max. continuous operating voltage (d.c.) (U_C)	33 V
Nominal current at 70 °C (I_L)	0.1 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	10 ohm(s)
Cut-off frequency line-line (f_G)	4.5 MHz
Approvals	UL, SIL

BCO MOD ML2 MVG 230



Surge arrester protection module with a width of 6 mm for BLITZDUCTORconnect with status indication for protecting 2 lines of stranded unearthed signal interfaces with a nominal voltage of 230 V.
Meets, amongst other things, the requirements for signalling systems in the railway industry (e.g. DB RIL 819.0808 railway directive).

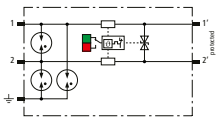


Type BCO ...	MOD ML2 MVG 230
Part No.	**927 090** NEW
SPD class	TYPE 2 P3
Nominal voltage (U_N)	230 V
C2 Total nominal discharge current (8/20 µs) (I_n)	6 kA
Series resistance per line	0 ohm(s)
Approvals	SIL

BCO MOD ML2 BD EX 24



Protection module with a width of 6 mm for BLITZDUCTORconnect combined arresters with status indication for protecting one pair of intrinsically safe measuring circuits and bus systems, meets FISCO requirements. Insulation strength > 500 V line-ground.



Type BCO ...	MOD ML2 BD EX 24
Part No.	**927 084**
SPD class	TYPE 1 P2
Nominal voltage (U_N)	24 V
Max. continuous operating voltage (d.c.) (U_C)	36 V
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	1 ohm(s)
Cut-off frequency line-line (f_G)	3.5 MHz
Approvals	ATEX, IECEx, CCC, SIL

Accessories for BLITZDUCTORconnect – Modular

Earthing Module



Space-saving earthing module with base part in a width of 6 mm and push-in connection technology for defined equipotential bonding of all wires connected to the base part. For direct earthing of 2 cable cores that are not being used actively. With signal disconnection for maintenance purposes.

Type	BCO M2 E
Part No.	**927 318** NEW
D1 total lightning impulse current (10/350 µs) (I_{imp})	3 kA
Operating temperature range (T_U)	-40°C to +80°C
Degree of protection (plugged in)	IP 20

PARTITION EXI



Special installation conditions have to be taken into account when using the BLITZDUCTORconnect surge protective devices in intrinsically safe electric circuits. According to EN 60079-11; 2007 (VDE 0170-7), a minimum clearance must be maintained between intrinsically safe and non-intrinsically safe signal circuits (connecting parts, e.g. connection clamps) of ≥ 50 mm! When using the Ex i partition of type PARTITION EXI, this clearance is also maintained if the surge protective devices are arranged directly next to one other. Ideally suited for use in conjunction with DRC IRCM for condition monitoring of BCO modules.
(1 pack = 2 pieces)

Type	PARTITION EXI
Part No.	**910 797**
Colour	blue
For mounting on	35 mm DIN rails acc. to EN 60715

DRC IRCM



Condition monitoring unit DEHNrecord, set for DIN rail mounted devices with integrated visual transmitter/receiver and visual reverse unit for monitoring the condition of BCO/DPA arresters with LifeCheck. Visual arrester status indication via LED group display in combination with remote signalling contact (break contact).

Type	DRC IRCM
Part No.	**910 710**
Input voltage range (d.c.) (U_{IN})	6-35 V DC
Max. rated current consumption (I_{IN})	≤ 10 mA
Operating temperature range (T_U)	-30 °C ... +70 °C
Approvals	UL

Accessories for BLITZDUCTORconnect – Modular

DIN Rail Mounted Power Supply Unit



Robust power supply in the DIN-rail-mounted enclosure with single-phase, wide-range input for operation in a wide variety of supply systems. The operating state indication on the front side signals the availability of the output voltage. Supply of stationary condition-monitoring devices from the DEHNrecord product range (DRC SCM XT / DRC MCM XT / DRC IRCM / DRC SD 2 1).

Type	PSU DC24 30W
Part No.	**910 499**
Input voltage range	AC 85-264 V; DC 120-373 V
Frequency	44-66 Hz; 0 Hz
Input current (I_e)	0.7 A at AC 110 V / 0.5 A at AC 230 V
Output nominal voltage (U_a)	DC 24 V (SELV)
Output current (I_a)	1.3 A at DC 24 V, max. 0.9 A at any installation position
Recommended backup fuse	circuit breaker 10 A, 16 A, characteristic B, C
Standards / regulations	EN 60950, EN 61204-3, UL 60950, UL 508, GL

BLITZDUCTORconnect base part

Two-pole arrester base for installation on printed circuit boards by means of soldering process for BLITZDUCTORconnect modules. With integrated remote signalling contact (floating changeover contact) for the condition monitoring of the protection modules.

BCO BAS PCB FM



Two-pole arrester base for installation on printed circuit boards by means of soldering process for BLITZDUCTORconnect modules. With integrated remote signalling contact (floating changeover contact) for the condition monitoring of the protection modules.

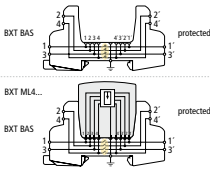
Type	BCO BAS PCB FM
Part No.	**927 305** NEW
Associated protection module	BCO MOD ...
Installation on	Directly soldered onto the printed circuit board
Degree of protection	IP 20 (with plug-in protection module)
Remote signalling contacts / type of contact	Changeover contact

BLITZDUCTOR – Base Parts

- Universal base parts for protection modules of the BLITZDUCTOR XT/XTU/SP series
- Two base parts with or without signal disconnection if the protection module is removed
- Connection of up to four lines

BXT BAS





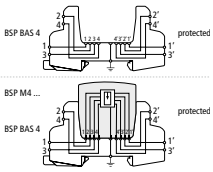
The BLITZDUCTOR XT base part is an extremely space-saving and universal four-pole **feed-through terminal** for the insertion of a protection module **without** signal disconnection if the protection module is removed. The snap-in mechanism at the supporting foot of the base part allows the protection module to be safely earthed via the DIN rail. Since no components of the protective circuit are situated in the base part, maintenance is only required for the protection modules.

Type	BXT BAS
Part No.	**920 300**
For mounting on	35 mm DIN rails acc. to EN 60715
Cross-sectional area, solid	0.08-4 mm²
Cross-sectional area, flexible	0.08-2.5 mm²
Tightening torque (terminals)	0.4 Nm
Earthing via	35 mm DIN rails acc. to EN 60715
Approvals	CSA, UL, ATEX, IECEx *)

*) only in connection with an approved protection module

BSP BAS 4





The BLITZDUCTOR SP base part is an extremely space-saving and universal four-pole **terminal** for the insertion of a protection module **with** signal disconnection if the protection module is removed. The snap-in mechanism at the supporting foot of the base part allows the protection module to be safely earthed via the DIN rail. Since no components of the protective circuit are situated in the base part, maintenance operation is only required for the protection modules.

Type	BSP BAS 4
Part No.	**926 304**
For mounting on	35 mm DIN rails acc. to EN 60715
Cross-sectional area, solid	0.08-4 mm²
Cross-sectional area, flexible	0.08-2.5 mm²
Tightening torque (terminals)	0.4 Nm
Earthing via	35 mm DIN rails acc. to EN 60715
Approvals	UL, CSA

*) only in connection with an approved protection module

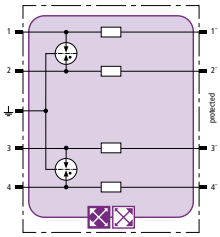
BLITZDUCTOR XT – Protection Modules

- Combined lightning current and surge arrester modules
- With integrated RFID LifeCheck
- Two-pole and four-pole versions available

BXT ML4 B 180

Space-savings four-pole lightning current arrester module with RFID LifeCheck feature for almost all applications. For use in connection with downstream TYPE 2 P1 surge arresters or combined lightning current and surge arresters with a lower or equal voltage level. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



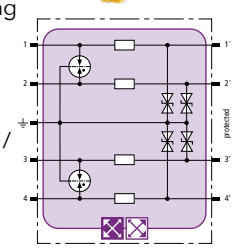


Type BXT …	ML4 B 180
Part No.	920 310
SPD class	TYPE 1
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current at 45 °C (I_L)	1.2 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	0.4 ohm(s)
Approvals	CSA, ATEX, IECEx, CSA & USA Hazloc, SIL

BXT ML4 BE 5 – BE 180

Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting four single lines sharing a common reference potential as well as unbalanced interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.





General technical data:	
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA

Type BXT …	ML4 BE 5	ML4 BE 12
Part No.	920 320	920 322
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	6 V	15 V
Nominal current at 45 °C (I_L)	1.0 A	0.75 A
Series resistance per line	1.0 ohm(s)	1.8 ohm(s)
Cut-off frequency line-PG (f_G)	1.0 MHz	2.7 MHz
Approvals	CSA, UL 497B, ATEX, IECEx, CSA & USA Hazloc, SIL	CSA, UL 497B, ATEX, IECEx, CSA & USA Hazloc, SIL

Type BXT …	ML4 BE 24	ML4 BE 36
Part No.	920 324	920 336
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	33 V	45 V
Nominal current at 45 °C (I_L)	0.75 A	1.8 A
Series resistance per line	1.8 ohm(s)	0.43 ohm(s)
Cut-off frequency line-PG (f_G)	6.8 MHz	3.8 MHz
Approvals	CSA, UL 497B, ATEX, IECEx, CCC, CSA & USA Hazloc, SIL	UL 497B, ATEX, IECEx, CSA & USA Hazloc, SIL

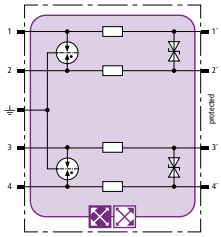
Type BXT …	ML4 BE 48	ML4 BE 60
Part No.	920 325	920 326
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	54 V	70 V
Nominal current at 45 °C (I_L)	0.75 A	1.0 A
Series resistance per line	1.8 ohm(s)	1.0 ohm(s)
Cut-off frequency line-PG (f_G)	8.7 MHz	9.0 MHz
Approvals	CSA, UL 497B, ATEX, IECEx, CSA & USA Hazloc, SIL	CSA, UL 497B, ATEX, IECEx, CSA & USA Hazloc, SIL

Type BXT …	ML4 BE 180
Part No.	920 327
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current at 45 °C (I_L)	1.0 A
Series resistance per line	1.0 ohm(s)
Cut-off frequency line-PG (f_G)	25.0 MHz
Approvals	CSA, UL 497B, ATEX, IECEx, CSA & USA Hazloc, SIL

BXT ML4 BD 5 – BD 180

Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting two pairs of unearthed balanced interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.





General technical data:	
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA

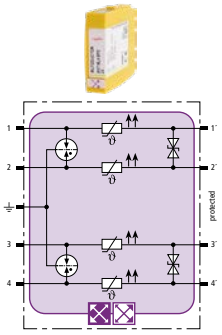
Type BXT …	ML4 BD 5	ML4 BD 12
Part No.	920 340	920 342
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	6.0 V	15 V
Nominal current at 45 °C (I_L)	1.0 A	1.0 A
Series resistance per line	1.0 ohm(s)	1.0 ohm(s)
Cut-off frequency line-line (f_G)	1.0 MHz	2.8 MHz
Approvals	CSA, UL 497B, ATEX, IECEx, CSA & USA Hazloc, SIL	CSA, UL 497B, ATEX, IECEx, CSA & USA Hazloc, SIL

Type BXT …	ML4 BD 24	ML4 BD 48
Part No.	920 344	920 345
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	33 V	54 V
Nominal current at 45 °C (I_L)	1.0 A	1.0 A
Series resistance per line	1.0 ohm(s)	1.0 ohm(s)
Cut-off frequency line-line (f_G)	7.8 MHz	8.7 MHz
Approvals	CSA, UL 497B, ATEX, IECEx, CCC, CSA & USA Hazloc, SIL	CSA, UL 497B, ATEX, IECEx, CSA & USA Hazloc, SIL

Type BXT …	ML4 BD 60	ML4 BD 180
Part No.	920 346	920 347
SPD class	TYPE 1 P1	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	70 V	180 V
Nominal current at 45 °C (I_L)	1.0 A	0.75 A
Series resistance per line	1.0 ohm(s)	1.8 ohm(s)
Cut-off frequency line-line (f_G)	11.0 MHz	25.0 MHz
Approvals	CSA, UL 497B, ATEX, IECEx, CSA & USA Hazloc, SIL	CSA, UL 497B, ATEX, IECEx, CSA & USA Hazloc, SIL

BXT ML4 BPD 24

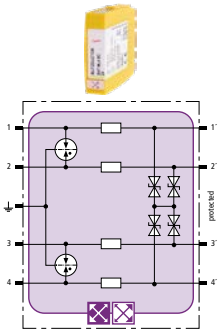
Space-saving combined arrester module with RFID LifeCheck for protecting two pairs in 24 V d.c. systems. Can also be used for systems with earthed negative poles. Integrated PTC resistors allow to reliably reset the arrester after the system circuit has been affected by short-circuit currents up to 40 A.



Type BXT ...	ML4 BPD 24
Part No.	920 314
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	33 V
Nominal current at 70 °C (I_L)	0.1 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	typ. 10 ohm(s)
Cut-off frequency line-line (f_G)	4 MHz
Approvals	SIL

BXT ML4 BC 5 / 24

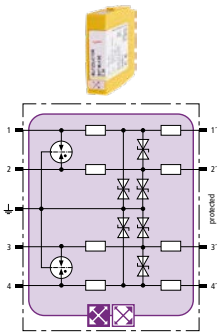
Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting up to four unearthed single lines sharing a common reference potential. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT ...	ML4 BC 5	ML4 BC 24
Part No.	920 350	920 354
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	6.0 V	33 V
Nominal current at 45 °C (I_L)	1.0 A	0.75 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Series resistance per line	1.0 ohm(s)	1.8 ohm(s)
Approvals	CSA, ATEX, IECEx, CSA & USA Hazloc, SIL	CSA, ATEX, IECEx, CSA & USA Hazloc, SIL

BXT ML4 BE C 12 / 24

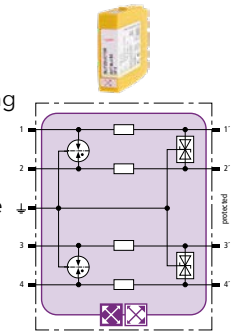
Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting two pairs of balanced interfaces with diode protective circuit at the input, current loops (TTY) and optocoupler inputs. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT ...	ML4 BE C 12	ML4 BE C 24
Part No.	920 362	920 364
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	15 V	33 V
Nominal current at 80 °C (I_L)	0.1 A	0.1 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Series resistance per line	13.8 ohm(s)	28.8 ohm(s)
Cut-off frequency line-PG (f_G)	0.85 MHz	1.7 MHz
Approvals	ATEX, IECEx, CSA & USA Hazloc, SIL	CSA, ATEX, IECEx, CSA & USA Hazloc, SIL

BXT ML4 BE HF 5

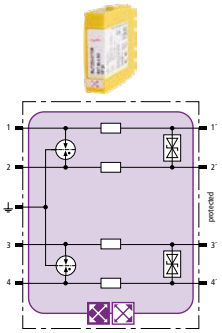
Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting four single lines sharing a common reference potential as well as high-frequency transmissions without galvanic isolation. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT ...	ML4 BE HF 5
Part No.	920 370
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	6.0 V
Nominal current at 45 °C (I_L)	1.0 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	1.0 ohm(s)
Cut-off frequency line-PG (f_G)	100.0 MHz
Approvals	CSA, UL 497B, ATEX, IECEx, CCC, CSA & USA Hazloc, SIL

BXT ML4 BD HF 5 / 24

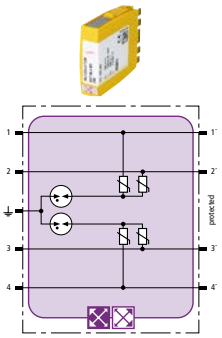
Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting two pairs of unearthed high-frequency bus systems or two-wire video transmission systems. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT ...	ML4 BD HF 5	ML4 BD HF 24
Part No.	920 371	920 375
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	6.0 V	33 V
Nominal current at 45 °C (I_L)	1.0 A	1.0 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Series resistance per line	1.0 ohm(s)	1.0 ohm(s)
Cut-off frequency line-line (f_G)	100.0 MHz	100.0 MHz
Approvals	CSA, UL 497B, ATEX, IECEx, CCC, CSA & USA Hazloc, SIL	CSA, UL 497B, ATEX, IECEx, CSA & USA Hazloc, SIL

BXT ML4 MY 110 / 250

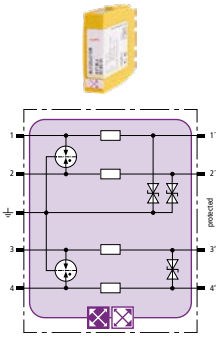
Space-saving surge arrester module with RFID LifeCheck for protecting four lines of stranded signal interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT ...	ML4 MY 110	ML4 MY 250
Part No.	920 388	920 389
SPD class	TYPE 2 P2	TYPE 2 P3
Max. continuous operating voltage (d.c.) line-line (U_C)	170 V	620 V
Max. continuous operating voltage (d.c.) line-PG (U_C)	85 V	320 V
Nominal current at 80 °C (I_L)	3.0 A	3.0 A
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
Cut-off frequency line-line (f_G)	4.5 MHz	20.0 MHz
Approvals	SIL	SIL

BXT ML4 BE BD 24

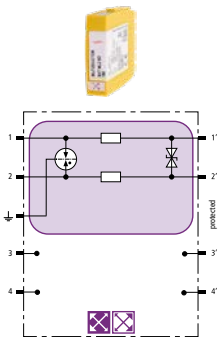
Space-saving surge arrester module with RFID LifeCheck for protecting two single lines with common reference potential as well as unbalanced interfaces and one pair of unearthed balanced interfaces. LifeCheck detects thermal or electrical overload after which the arrester has to be replaced. The status is indicated contactlessly by DEHNrecord LC / MCM.



Type BXT …	ML4 BE BD 24
Part No.	920 334
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	33 V
Nominal current at 45 °C (I_L)	0.75 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA

BXT ML2 BD 180

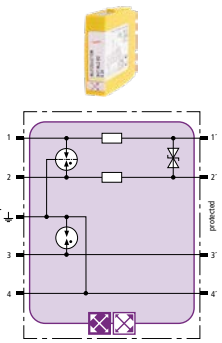
Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting one pair of unearthed balanced interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT …	ML2 BD 180
Part No.	920 247
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current at 45 °C (I_L)	0.75 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	1.8 ohm(s)
Cut-off frequency line-line (f_G)	25.0 MHz
Approvals	CSA, ATEX, IECEx, CSA & USA Hazloc, SIL

BXT ML2 BD S 5 – BD S 48

Space-saving combined arrester module with RFID LifeCheck for protecting 1 pair of unearthed symmetrical interfaces, either direct or indirect shield earthing If LifeCheck detects thermal and electrical overloads after which the arrester has to be replaced. This status is indicated contactlessly by DEHNrecord LC / SCM / MCM.



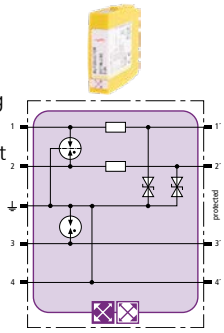
General technical data:	
SPD class	TYPE 1 P1
Nominal current at 45 °C (I_L)	1.0 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	9 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	1.0 ohm(s)

Type BXT …	ML2 BD S 5	ML2 BD S 12
Part No.	920 240	920 242
Max. continuous operating voltage (d.c.) (U_C)	6.0 V	15 V
Cut-off frequency line-line (f_G)	1.0 MHz	2.8 MHz
Approvals	CSA, ATEX, IECEx, CSA & USA Hazloc, SIL	CSA, ATEX, IECEx, CSA & USA Hazloc, SIL

Type BXT …	ML2 BD S 24	ML2 BD S 48
Part No.	920 244	920 245
Max. continuous operating voltage (d.c.) (U_C)	33 V	54 V
Cut-off frequency line-line (f_G)	7.8 MHz	8.7 MHz
Approvals	CSA, ATEX, IECEx, CCC, CSA & USA Hazloc, SIL	CSA, ATEX, IECEx, CSA & USA Hazloc, SIL

BXT ML2 BE S 5 – BE S 48

Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting two single lines sharing a common reference potential as well as unbalanced interfaces, with direct or indirect shield earthing. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



General technical data:	
SPD class	TYPE 1 P1
D1 Total lightning impulse current (10/350 µs) (I_{imp})	9 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA

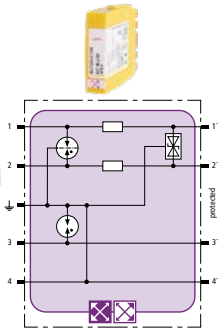
Type BXT …	ML2 BE S 5	ML2 BE S 12
Part No.	920 220	920 222
Max. continuous operating voltage (d.c.) (U_C)	6.0 V	15 V
Nominal current at 45 °C (I_L)	1.0 A	0.75 A
Series resistance per line	1.0 ohm(s)	1.8 ohm(s)
Cut-off frequency line-PG (f_G)	1.0 MHz	2.7 MHz
Approvals	CSA, ATEX, IECEx, CSA & USA Hazloc, SIL	CSA, ATEX, IECEx, CCC, CSA & USA Hazloc, SIL

Type BXT …	ML2 BE S 24	ML2 BE S 36
Part No.	920 224	920 226
Max. continuous operating voltage (d.c.) (U_C)	33 V	45 V
Nominal current at 45 °C (I_L)	0.75 A	1.8 A
Series resistance per line	1.8 ohm(s)	0.43 ohm(s)
Cut-off frequency line-PG (f_G)	6.8 MHz	3.8 MHz
Approvals	CSA, ATEX, IECEx, CCC, CSA & USA Hazloc, SIL	UL 497B, SIL

Type BXT …	ML2 BE S 48
Part No.	920 225
Max. continuous operating voltage (d.c.) (U_C)	54 V
Nominal current at 45 °C (I_L)	0.75 A
Series resistance per line	1.8 ohm(s)
Cut-off frequency line-PG (f_G)	8.7 MHz
Approvals	CSA, UL 497B, ATEX, IECEx, CSA & USA Hazloc, SIL

BXT ML2 BE HFS 5

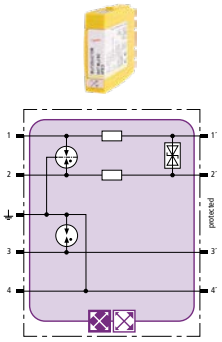
Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting one pair of high-frequency transmissions without galvanic isolation, with direct or indirect shield earthing. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT …	ML2 BE HFS 5
Part No.	920 270
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	6.0 V
Nominal current at 45 °C (I_L)	1.0 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	9 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	1.0 ohm(s)
Cut-off frequency line-PG (f_G)	100.0 MHz
Approvals	CSA, UL 497B, ATEX, IECEx, CCC, CSA & USA Hazloc, SIL

BXT ML2 BD HFS 5

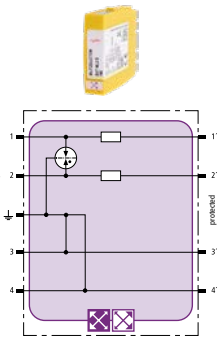
Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting one pair of unearthed high-frequency bus systems or video transmission systems, with direct or indirect shield earthing. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT ...	ML2 BD HFS 5
Part No.	920 271
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	6.0 V
Nominal current at 45 °C (I_L)	1.0 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	9 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	1.0 ohm(s)
Cut-off frequency line-line (f_G)	100.0 MHz
Approvals	CSA, UL 497B, ATEX, IECEx, CCC, CSA & USA Hazloc, SIL

BXT ML2 B 180

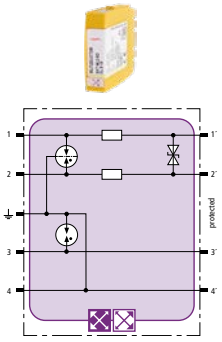
Space-saving two-pole lightning current arrester module with RFID LifeCheck and shield earthing for almost all applications. For use in conjunction with downstream TYPE 2 P1 surge arresters or combined lightning current and surge arresters with a lower or equal voltage level. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT ...	ML2 B 180
Part No.	920 211
SPD class	TYPE 1
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current at 45 °C (I_L)	1.2 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	0.4 ohm(s)
Approvals	CSA, ATEX, IECEx, CSA & USA Hazloc, SIL

BXT ML2 BD DL S 15

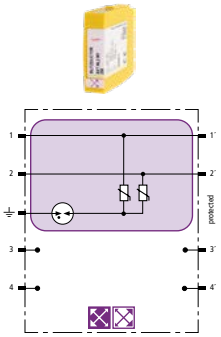
Space-saving combined lightning current and surge arrester module with RFID LifeCheck for protecting one pair of unearthed balanced interfaces, which specifically fulfils the requirements of Dupline buses, direct or indirect shield earthing. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT ...	ML2 BD DL S 15
Part No.	920 243
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	17 V
Nominal current at 70 °C (I_L)	0.4 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	9 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	2.2 ohm(s)
Cut-off frequency line-line (f_G)	2.7 MHz
Approvals	ATEX, IECEx, CSA & USA Hazloc, SIL

BXT ML2 MY 250

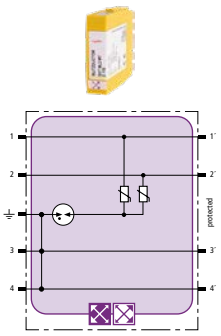
Space-saving surge arrester module with RFID LifeCheck for protecting two lines of stranded signal interfaces up to 250 V a.c. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT ...	ML2 MY 250
Part No.	920 289
SPD class	TYPE 2 P3
Max. continuous operating voltage (d.c.) line-line (U_C)	620 V
Max. continuous operating voltage (d.c.) line-PG (U_C)	320 V
Nominal current at 80 °C (I_L)	3.0 A
C2 Total nominal discharge current (8/20 µs) (I_n)	5 kA
Cut-off frequency line-line (f_G)	20.0 MHz
Approvals	SIL

BXT ML2 MY E 110

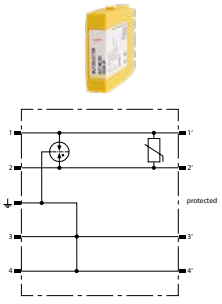
Space-saving surge arrester module with RFID LifeCheck for protecting two pairs of stranded signal interfaces. If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by the DEHNrecord LC / SCM / MCM reader.



Type BXT ...	ML2 MY E 110
Part No.	920 288
SPD class	TYPE 2 P2
Max. continuous operating voltage (d.c.) line-line (U_C)	170 V
Max. continuous operating voltage (d.c.) line-PG (U_C)	85 V
Nominal current at 80 °C (I_L)	3.0 A
C2 Total nominal discharge current (8/20 µs) (I_n)	5 kA
Series resistance per line	0 ohm(s)
Cut-off frequency line-line (f_G)	4.5 MHz
Approvals	SIL

BXT M2 BD HC5A 24

Space-saving combined arrester module for protecting one pair of unearthed balanced interfaces. Module is adapted to interfaces with direct currents up to 5 A, e.g. for the controller of motor-driven actuators with high starting and operating currents.



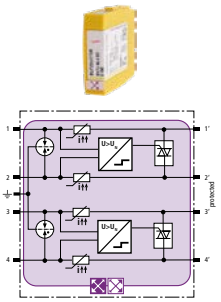
Type BXT ...	M2 BD HC5A 24
Part No.	920 296
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	36 V
Nominal current (I_L)	5 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	0 ohm(s)
Approvals	SIL

BLITZDUCTOR XTU – Protection modules with RFID LifeCheck

- Universal lightning current and surge arrester modules
- With integrated RFID LifeCheck
- With integrated actiVsense technology
- Two-pole and four-pole versions available

BXTU ML4 BD 0-180

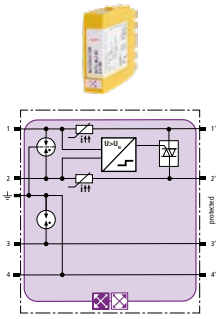
Space-saving combined lightning current and surge arrester module with actiVsense technology and RFID LifeCheck for protecting two pairs (same or different operating voltage) of balanced interfaces with galvanic isolation. Automatically detects the operating voltage of the useful signal and optimally adapts the voltage protection level to it.



Type BXTU ...	ML4 BD 0-180
Part No.	**920 349**
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	180 V
Permissible superimposed signal voltage (U_{signal})	≤ +/- 5 V
Cut-off frequency line-line (U_{signal}, balanced 100 ohms) (f_G)	50 MHz
Nominal current at 80 °C (equal to max. short-circuit current) (I_L)	100 mA
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	≤ 10 ohms; typically 7.5 ohms
Approvals	CSA, UL, SIL

BXTU ML2 BD S 0-180

Space-saving combined lightning current and surge arrester module with actiVsense technology and RFID LifeCheck for protecting one pair, direct or indirect shield earthing. Automatically detects the operating voltage of the useful signal and optimally adapts the voltage protection level to it.



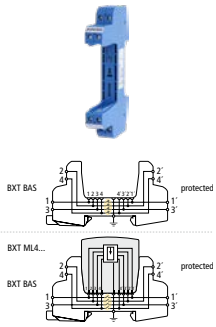
Type BXTU ...	ML2 BD S 0-180
Part No.	**920 249**
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	180 V
Permissible superimposed signal voltage (U_{signal})	≤ +/- 5 V
Cut-off frequency line-line (U_{signal}, balanced 100 ohms) (f_G)	50 MHz
Nominal current at 80 °C (equal to max. short-circuit current) (I_L)	100 mA
D1 Total lightning impulse current (10/350 µs) (I_{imp})	9 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	≤ 10 ohms; typically 7.5 ohms
Approvals	CSA, UL, SIL

BLITZDUCTOR XT Ex (i) – Base Part

- Universal base part for protection modules of the BLITZDUCTOR XT Ex (i) series
- No signal disconnection if the protection module is removed
- Connection of up to four lines

BXT BAS EX

BLITZDUCTOR XT base part for use as an extremely space-saving and universal four-pole feed-through terminal for intrinsically safe circuits for the insertion of the protection module, no signal disconnection if the protection module is removed. The snap-in mechanism at the supporting foot of the base part allows the device to be safely earthed via the DIN rail. Since no components of the protective circuit are situated in the base part, only the protection modules need to be serviced.



Type	BXT BAS EX
Part No.	**920 301**
For mounting on	35 mm DINs rails acc. to EN 60715
Cross-sectional area, solid	0.08-4 mm²
Cross-sectional area, flexible	0.08-2.5 mm²
Tightening torque (terminals)	0.4 Nm
Earthing via	35 mm DIN rails acc. to EN 60715
Approvals	UL 497B, CSA, ATEX, IECEx, CCC, Inmetro *)

*) only in connection with an approved protection module

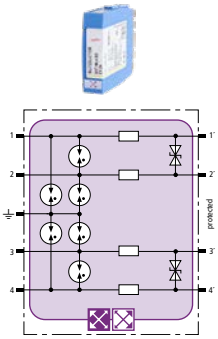
BLITZDUCTOR XT Ex (i) – Protection Modules

- Surge arrester for use in hazardous areas
- Versions with and without integrated LifeCheck
- Two-pole and four-pole versions available



BXT ML4 BD EX 24

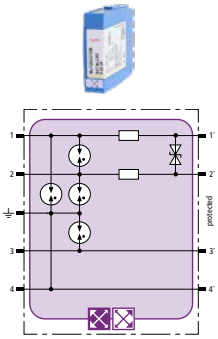
Space-saving surge arrester module with RFID LifeCheck for protecting two pairs in intrinsically safe measuring circuits and bus systems, meets FISCO requirements. ATEX. Insulation strength > 500 V line-earth.
If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by DEHNrecord LC / SCM / MCM.



Type BXT ...	ML4 BD EX 24
Part No.	**920 381**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_c)	33 V
Max. input current acc. to EN 60079-11 (I_i)	0.5 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	4 kA
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Cut-off frequency line-line (f_G)	7.7 MHz
Approvals *)	CSA, ATEX, IECEx, CCC, CSA & USA Hazloc, SIL, Inmetro, UKCA

BXT ML2 BD S EX 24

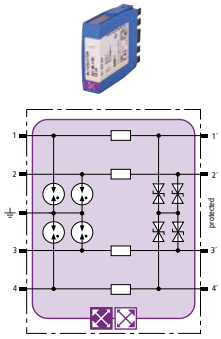
Space-saving surge arrester module with RFID LifeCheck for protecting one pair in intrinsically safe measuring circuits and bus systems, direct or indirect shield earthing. Insulation strength > 500 V line-earth.
If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by DEHNrecord LC / SCM / MCM.



Type BXT ...	ML2 BD S EX 24
Part No.	**920 280**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_c)	33 V
Max. input current acc. to EN 60079-11 (I_i)	0.5 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	4 kA
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency line-line (f_G)	6 MHz
Approvals *)	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL, Inmetro, UKCA

BXT ML4 BC EX 24

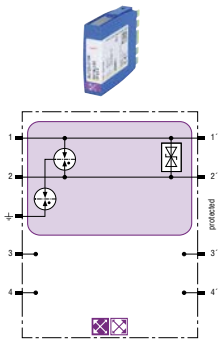
Space-saving surge arrester module with RFID LifeCheck for protecting up to four unearthed single lines sharing a common reference potential in intrinsically safe measuring circuits, meets FISCO requirements. ATEX. Insulation strength > 500 V line-earth.
If LifeCheck detects thermal or electrical overload, the arrester has to be replaced. This status is indicated contactlessly by DEHNrecord LC / SCM / MCM.



Type BXT ...	ML4 BC EX 24
Part No.	**920 384**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_c)	33 V
Max. input current acc. to EN 60079-11 (I_i)	0.5 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	4 kA
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Cut-off frequency line-line (f_G)	6.4 MHz
Approvals *)	CSA, ATEX, IECEx, CCC, CSA & USA Hazloc, SIL, Inmetro, UKCA

BXT ML2 BD HF EX 6

Space-saving surge arrester module with RFID LifeCheck for protecting one pair in intrinsically safe measuring circuits and RS485 bus systems. Insulation strength > 500 V line-earth.
If LifeCheck detects thermal and electrical overload, the arrester has to be replaced. This status is indicated contactlessly by DEHNrecord LC / SCM / MCM.



Type BXT ...	ML2 BD HF EX 6
Part No.	**920 538**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_c)	6 V
Max. input current acc. to EN 60079-11 (I_i)	4.8 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency line-line (f_G)	100 MHz
Approvals *)	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL, Inmetro, UKCA

ITAK Ex (i)

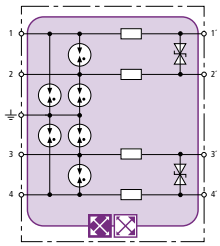
Prewired surge arrester unit mounted in the connection box for protecting intrinsically safe measuring circuits.



ITAK EXI BXT

Prewired BXT ML4 BD EX 24 and BXT BAS EX surge arrester unit completely mounted in a junction box for intrinsically safe measuring circuits, meets FISCO requirements.





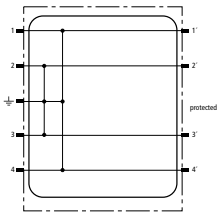
Type	ITAK EXI BXT 24
Part No.	**989 408**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	33 V
Max. input current acc. EN 60079-11 (I_i)	0.5 A
Total nominal discharge current (8/20 µs) (I_n)	20 kA
Cut-off frequency line-line (f_G)	7.7 MHz
Degree of protection	IP 65
Approvals for installed BXT	CSA, ATEX, IECEx, CSA & USA Hazloc, SIL

Accessories for XT / XTU / XT Ex (i)

Earthing Module

The plugged-in earthing module connects all lines connected to the BLITZDUCTOR SP / XT / XTU base part to the equipotential bonding. It directly earths unused cable cores that are already connected to the base part.

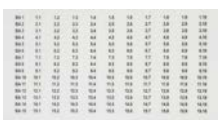




Type	BXT M4 E
Part No.	**920 308**
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
Plugs into	base part

Labelling System BA1-BA15

2x 165 adhesive labels for labelling DRC MCM XT monitoring devices with the bus address (BA1 to BA15) and BXT modules with consecutive numbers (1.1-1.10 to 15.1-15.10).

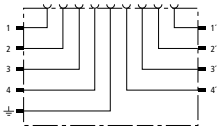


Type	BS BA1 BA15 BXT
Part No.	**920 398**
Dimensions (W x H)	13 x 7 mm

Test / Disconnection Module

The plugged-in test / disconnection module interrupts the cable run of the lines connected to the BLITZDUCTOR SP / XT / XTU base part and leads them to a test socket at the front of the module. This allows to carry out measurements in the installation without removing the lines from the base part.





Type	BXT M4 T
Part No.	**920 309**
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current at 80 °C (I_L)	1.0 A
Volume resistance	0.1 ohms
Plugs into	base part
Test sockets	gold-plated, 1 mm
Accessories	2 measuring lines (1 m), protective bag

EMC Spring Terminals

Two spring terminals for the protected and unprotected side of a BLITZDUCTOR SP / XT / XTU arrester for permanent low-impedance shield contact with a shielded signal line. Insulating cap for indirect shield earthing (BXT only), cable ties and insulating strips included. Can be used for the types BXT(U) ML2 ...S ... / BSP M2 ... (only direct shield earthing).



Type	SAK BXT LR
Part No.	**920 395**
D1 Lightning impulse current (10/350 µs)	5 kA
Plugs into	terminal BXT BAS / BSP BAS 4
Accessories	insulating caps, cable ties, insulating strips

Partition

Special installation instructions have to be observed when using BLITZDUCTOR XT Ex (i) surge protective devices in intrinsically safe circuits.
In accordance with EN 60079-11; 2007 (VDE 0170-7), a minimum distance (clearance) of ≥ 50 mm must be maintained between intrinsically and non-intrinsically safe circuits (connecting parts, e.g. terminals)!
When using the Ex i partition of type TW DRC MCM EX, this clearance is also maintained if the surge protective devices are arranged directly next to one other.
Ideally suited for use in conjunction with the DRC MCM XT for the condition monitoring of BXT modules. (1 pack = 2 pieces)



Type	TW DRC MCM EX
Part No.	**910 697**
For mounting on	35 mm DIN rails according to EN 60715

Accessories for BLITZDUCTOR SP / XT / XTU

DRC MCM XT

DIN rail mounted device with integrated RFID LifeCheck sensor for condition monitoring of max. 10 BXT / BXTU arresters with RFID LifeCheck. An RS485 interface allows to interconnect up to 15 DRC MCM XT.



Type	DRC MCM XT
Part No.	**910 695**
Colour	grey

DRC SCM XT

DIN rail mounted device with integrated RFID LifeCheck sensor for condition monitoring of max. 10 BXT / BXTU arresters with RFID LifeCheck.



Type	DRC SCM XT
Part No.	**910 696**
Colour	grey

DRC LC M3+

Portable device with RFID LifeCheck sensor for flexible use. Fast and easy testing of arresters with RFID LifeCheck. Documentation via PC database.



Type	DRC LC M3+
Part No.	**910 653**
Dimensions of storage case	340 x 275 x 83 mm

DRC LC M1+

Portable device with RFID LifeCheck sensor for flexible use. Fast and easy testing of arresters with RFID LifeCheck.



Type	DRC LC M1+
Part No.	**910 655**
Dimensions of storage case	275 x 230 x 83 mm

RFID LifeCheck Sensor for DRC BXT

Snap-on RFID LifeCheck sensor and test module for use as spare part / extension for portable RFID LifeCheck test devices.



Type	LCS DRC BXT
Part No.	**910 652**
For testing	BLITZDUCTOR XT ML

DIN Rail Mounted Power Supply Unit

Robust power supply in the DIN-rail-mounted enclosure with single-phase, wide-range input for operation in a wide variety of supply systems. The operating state indication on the front side signals the availability of the output voltage. Supply of stationary condition-monitoring devices from the DEHNrecord product range (DRC SCM XT / DRC MCM XT / DRC IRCM / DRC SD 2 1).



Type	PSU DC24 30W
Part No.	**910 499**
Input voltage range	AC 85-264 V; DC 120-373 V
Frequency	44-66 Hz; 0 Hz
Input current (I_e)	0.7 A at AC 110 V / 0.5 A at AC 230 V
Output nominal voltage (U_a)	DC 24 V (SELV)
Output current (I_a)	1.3 A at DC 24 V, max. 0.9 A at any installation position
Recommended backup fuse	circuit breaker 10 A, 16 A, characteristic B, C
Standards / regulations	EN 60950, EN 61204-3, UL 60950, UL 508, GL

USB Interface Converter of Type USB NANO 485

USB NANO 485 converts between USB and RS485 signals and is specifically designed for two-wire RS485 buses. LEDs indicate the operating state (yellow), Rx (green) and Tx (red). Due to its compact dimensions, USB NANO 485 is ideally suited for use with notebooks, however, stationary use is also possible.



Type	USB NANO 485
Part No.	**910 486**
Version	with LED indication

Compact SPDs – DIN Rail Mounted

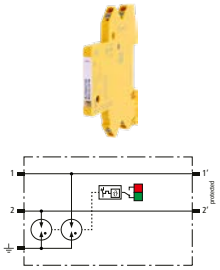
Type	Basic circuit diagram / Symbol	Product	Part No.	Page
BLITZDUCTORconnect – Compact				
BCO CL2 ... ▪ Combined lightning current and surge arrester in a compact enclosure ▪ With push-in connection technology ▪ Integrated LifeCheck and visual status indication	TYPE 1 P1		**927 9XX**	325
BCO CL2 BD EX 24 ▪ Surge arrester in a compact enclosure for hazardous areas ▪ With push-in connection technology ▪ Integrated LifeCheck and visual status indication	TYPE 1 P2 Ex		**927 984**	326
DEHNvario				
DVR 2 BY S 150 FM ▪ Combined lightning current and surge arrester in a compact enclosure ▪ For voice alarm and loudspeaker applications ▪ With remote signalling contact	TYPE 1 P2		**928 430**	328
DVR BNC RS485 230 ▪ 3-in-1 surge arrester in a compact enclosure ▪ Protects 230V / RS485 / coaxial signal interfaces ▪ With push-in connection technology	TYPE 2 P2		**928 440**	328
BLITZDUCTOR VT				
BVT ... ▪ Lightning current and surge arrester in a compact enclosure ▪ Wide range of solutions for d.c. supply systems and ▪ data interfaces ▪ With screw terminals	TYPE 1 P1		**918 401** **918 422** **918 409** **918 411**	328 329 329 329
BVT KKS ... ▪ Combined lightning current and surge arrester in a compact enclosure ▪ Solutions for cathodic protection applications ▪ With screw terminals	TYPE 1 P1		**918 420** **918 421**	329 329

BLITZDUCTORconnect – Compact

- Combined lightning current and surge arrester with a compact design and integrated visual status indication
- Push-in connection technology
- Intrinsically safe version for use in hazardous areas

BCO CL2 B 180

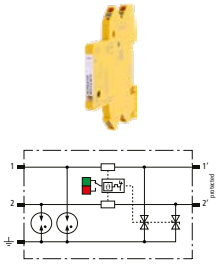
Space-saving, compact lightning current arrester with a width of 6 mm and push-in connection technology with status indication for protecting two single lines for lightning equipotential bonding as well as indirect earthing of shielded cables.



Type BCO ...	CL2 B 180
Part No.	927 910
SPD class	TYPE 1
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current (I_L)	1.2 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	0 ohms
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL

BCO CL2 BE

Space-saving, compact combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting two single lines sharing a common reference potential as well as unbalanced interfaces.



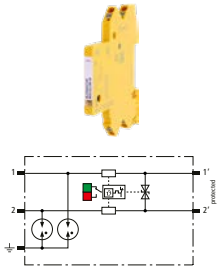
General technical data:		
SPD class		TYPE 1 P1
Nominal current at 70 °C (I_L)		0.75 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})		1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)		10 kA
Series resistance per line		1 ohms
Approvals		UL, CSA, ATEX, IECEx, CCC, SIL

Type BCO ...	CL2 BE 12	CL2 BE 24
Part No.	927 922	927 924
Max. continuous operating voltage (d.c.) (U_C)	15 V	33 V
Cut-off frequency line-line (f_G)	1.4 MHz	3.4 MHz

Type BCO ...	CL2 BE 48
Part No.	927 925
Max. continuous operating voltage (d.c.) (U_C)	54 V
Cut-off frequency line-line (f_G)	5 MHz

BCO CL2 BD

Space-saving, compact combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting one pair of unearthed balanced interfaces.



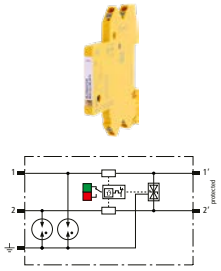
General technical data:	
SPD class	TYPE 1 P2
Nominal current at 70 °C (I_L)	0.75 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	1 ohms
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL

Type BCO ...	CL2 BD 12	CL2 BD 24
Part No.	927 942	927 944
Max. continuous operating voltage (d.c.) (U_C)	15 V	36 V
Cut-off frequency line-line (f_G)	2.6 MHz	5.8 MHz

Type BCO ...	CL2 BD 48
Part No.	927 945
Max. continuous operating voltage (d.c.) (U_C)	56 V
Cut-off frequency line-line (f_G)	7.2 MHz

BCO CL2 BE HF

Space-saving, compact combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting two single lines of high-frequency transmissions sharing a common reference potential as well as unbalanced interfaces.

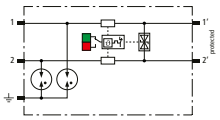


Type BCO ...	CL2 BE HF 5
Part No.	927 970
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	8.5 V
Nominal current at 70 °C (I_L)	0.75 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	1 ohms
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL

BCO CL2 BD HF

Space-saving, compact combined arrester with a width of 6 mm and push-in connection technology with status indication for protecting one pair of unearthed high-frequency bus systems as well as balanced interfaces.



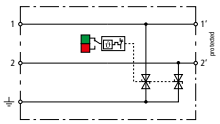


Type BCO ...	CL2 BD HF 5
Part No.	927 971
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	8.5 V
Nominal current at 70 °C (I_L)	0.75 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	1 ohms
Cut-off frequency line-line (f_G)	100 MHz
Approvals	UL, CSA, ATEX, IECEx, CCC, SIL

BCO CL2 E

Space-saving, compact surge arrester with a width of 6 mm and push-in connection technology with status indication. Finely limiting, single-stage surge protection with powerful diodes for protecting two single cores sharing a common reference potential as well as unbalanced interfaces.





General technical data:		
SPD class		TYPE 3 P1
Nominal current at 60 °C (I_L)		10 A
Series resistance per line		0 ohms
Approvals		UL

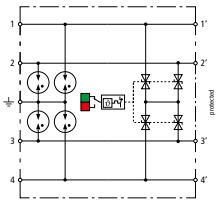
Type BCO ...	CL2 E 12	CL2 E 24
Part No.	927 987 NEW	927 988 NEW
Max. continuous operating voltage (d.c.) (U_C)	15 V	33 V
C1 Total nominal discharge current (8/20 µs) (I_n)	3 kA	1.2 kA

Type BCO ...	CL2 E 48
Part No.	927 989 NEW
Max. continuous operating voltage (d.c.) (U_C)	58 V
C1 Total nominal discharge current (8/20 µs) (I_n)	0.8 kA

BCO CL4 BC

Space-saving, compact combined arrester with a width of 12 mm and push-in connection technology with status indication for protecting unearthed 4-conductor measuring circuits for IT systems and measuring and control systems.



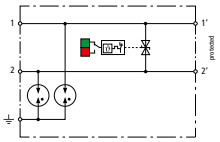


Type BCO ...	CL4 BC 24
Part No.	927 954 NEW
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	36 V
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	2.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	0 ohms
Approvals	UL

BCO CL2 BD HC10A 24

Space-saving, compact combined arrester with a width of 12 mm and push-in connection technology with status indication for protecting one pair in unearthed DC supplies for IT systems and measuring and control circuits.

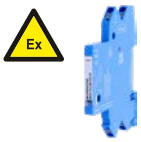


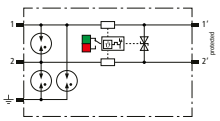


Type BCO ...	CL2 BD HC10A 24
Part No.	927 408 NEW
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	45 V
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	2.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	0 ohms
Approvals	UL, SIL

BCO CL2 BD EX 24

Space-saving, compact surge arrester with a width of 6 mm and push-in connection technology with status indication for protecting one pair of intrinsically safe measuring circuits and bus systems, meets FISCO requirements. Insulation strength > 500 V line-ground.





Type BCO ...	CL2 BD EX 24
Part No.	927 984
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	36 V
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	1 ohms
Cut-off frequency line-line (f_G)	3.5 MHz
Approvals	ATEX, IECEx, CCC, SIL

Accessories for BLITZDUCTORconnect – Compact

Earthing Module



Space-saving earthing module with base part in a width of 6 mm and push-in connection technology for defined equipotential bonding of all wires connected to the base part. For direct earthing of 2 cable cores that are not being used actively. With signal disconnection for maintenance purposes.

Type	BCO M2 E
Part No.	**927 318** NEW
D1 total lightning impulse current (10/350 µs) (I_{imp})	3 kA
Operating temperature range (T_U)	-40°C to +80°C
Degree of protection (plugged in)	IP 20

DIN Rail Mounted Power Supply Unit



Robust power supply in the DIN-rail-mounted enclosure with single-phase, wide-range input for operation in a wide variety of supply systems. The operating state indication on the front side signals the availability of the output voltage. Supply of stationary condition-monitoring devices from the DEHNrecord product range (DRC SCM XT / DRC MCM XT / DRC IRCM / DRC SD 2 1).

Type	PSU DC24 30W
Part No.	**910 499**
Input voltage range	AC 85-264 V; DC 120-373 V
Frequency	44-66 Hz; 0 Hz
Input current (I_e)	0.7 A at AC 110 V / 0.5 A at AC 230 V
Output nominal voltage (U_a)	DC 24 V (SELV)
Output current (I_a)	1.3 A at DC 24 V, max. 0.9 A at any installation position
Recommended backup fuse	circuit breaker 10 A, 16 A, characteristic B, C
Standards / regulations	EN 60950, EN 61204-3, UL 60950, UL 508, GL

PARTITION EXI



Special installation conditions have to be taken into account when using the BLITZDUCTORconnect surge protective devices in intrinsically safe electric circuits. According to EN 60079-11; 2007 (VDE 0170-7), a minimum clearance must be maintained between intrinsically safe and non-intrinsically safe signal circuits (connecting parts, e.g. connection clamps) of ≥ 50 mm! When using the Ex i partition of type PARTITION EXI, this clearance is also maintained if the surge protective devices are arranged directly next to one other. Ideally suited for use in conjunction with DRC IRCM for condition monitoring of BCO modules.
(1 pack = 2 pieces)

Type	PARTITION EXI
Part No.	**910 797**
Colour	blue
For mounting on	35 mm DIN rails acc. to EN 60715

DRC IRCM



Condition monitoring unit DEHNrecord, set for DIN rail mounted devices with integrated visual transmitter/receiver and visual reverse unit for monitoring the condition of BCO/DPA arresters with LifeCheck. Visual arrester status indication via LED group display in combination with remote signalling contact (break contact).

Type	DRC IRCM
Part No.	**910 710**
Input voltage range (d.c.) (U_{IN})	6-35 V DC
Max. rated current consumption (I_{IN})	≤ 10 mA
Operating temperature range (T_U)	-30 °C ... +70 °C
Approvals	UL, CSA, ATEX, IECEx, CCC

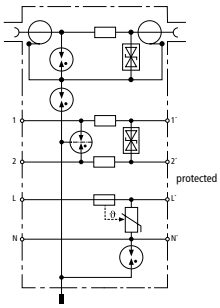
DEHNvario

Compact combined arrester for protecting electroacoustic systems (e.g. voice alarm systems, loudspeaker systems).

DVR BNC RS485 230

Compact 3-in-1 surge arrester for protecting analogue camera systems. Protection of the video signal (BNC connection), a data signal (RS485) and a voltage supply (230 V a.c.). Direct plug-in technology allows fast conductor connection without tools. Easy replacement of the arrester is ensured by the integrated terminal units which can be released and then removed from the enclosure. Integrated overload indication (230 V).



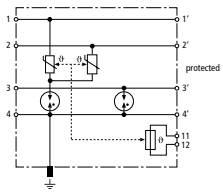


Type DVR ...	BNC RS485 230
Part No.	**928 440**
Video (BNC)	
SPD class	TYPE 2 P2
Max. continuous operating voltage (d.c.) (U_C)	6.4 V
Nominal current (I_L)	0.1 A
C2 Nominal discharge current (8/20 µs) shield-PG (I_n)	10 kA
Insertion loss at 300 MHz (75 ohms)	≤ 3.0 dB
Connection (input / output)	BNC socket / BNC socket
Dates (RS485)	
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	8 V
Nominal current (I_L)	0.5 A
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency line-line (f_G)	100 MHz
Voltage supply (230 V)	
SPD class	type 2 / class II
Max. continuous operating voltage (a.c.) [L-N] (U_C)	255 V (50 / 60 Hz)
Max. continuous operating voltage (a.c.) [N-PE] (U_C)	255 V (50 / 60 Hz)
Nominal current (I_L)	10 A
Nominal discharge current (8/20 µs) (I_n)	5 kA
Max. discharge current (8/20 µs) (I_{max})	10 kA
Voltage protection level [L-N] (U_P)	≤ 1.5 kV
Voltage protection level [N-PE] (U_p)	≤ 1.5 kV

DVR 2 BY S 150 FM

Compact combined arrester for protecting electroacoustic systems (e.g. voice alarm systems, loudspeaker systems). Protection of one galvanically isolated pair; direct or indirect shield earthing. Direct plug-in technology allows fast conductor connection without tools. Easy replacement of the arrester is ensured by the integrated terminal units which can be released and then removed from the enclosure. Integrated remote signalling contact (break contact).





Type DVR ...	2 BY S 150 FM
Part No.	**928 430**
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	150 V
Nominal current at 70 °C (I_L)	10 A
Nominal current at 80 °C (I_L)	7 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	2.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	22.5 kA
Cut-off frequency line-line (f_G)	1.4 MHz

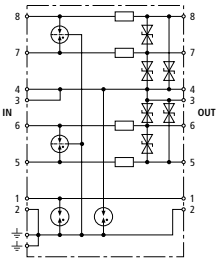
BLITZDUCTOR VT

Compact DIN rail mounted protection for devices with screw terminals for stranded conductors

BVT RS485

Surge arrester for a wide range of applications, e.g. for balanced four-wire RS485/422 interfaces or temperature sensors. Direct or indirect shield earthing, connection of a signal ground (SG).



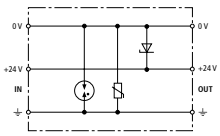


Type BVT ...	RS485 5
Part No.	**918 401**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	6 V
Nominal current (I_L)	0.5 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	0.8 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	1.8 ohms
Cut-off frequency line-line (f_G)	1.7 MHz
Approvals	CSA

BVT AVD

Surge arresters with improved voltage protection levels for EMC protection of electronic components with d.c. voltage supply. Ideally suited for Siemens PLCs. Since a unipolar diode is used, the polarity of the operating voltage must be observed.



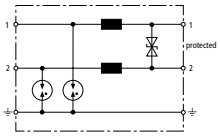


Type BVT ...	AVD 24
Part No.	**918 422**
SPD class	TYPE 3 P1
Max. continuous operating voltage (d.c.) (U_C)	35 V
Nominal current at 80 °C (I_L)	10 A
C2 Total nominal discharge current (8/20 µs) (I_n)	2 kA

BVT ALD

Energy-coordinated, DIN rail mounted combined lightning current and surge arrester for protecting unearthed d.c. power supply systems.



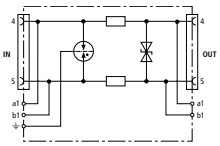


Type BVT ...	ALD 60
Part No.	**918 409**
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	65 V
Nominal current at 80 °C (I_L)	4 A
Nominal current at 45 °C (I_L)	7 A
Backup fuse if	$U_N \geq 45$ V and $I_L \geq 1$ A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	2.5 kA
D1 Total lightning impulse current (10/350 µs) (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	22 µH
Approvals	UL

BVT TC

Energy-coordinated and leakage-current-free surge arrester for a/b lines, ISDN U_{k0} or ADSL with RJ45 connections and additional screw terminals. Pinning of the RJ45 sockets is compatible with RJ11/12. The parallel screw terminals are more robust than the RJ45 sockets and increase the total nominal discharge current to 10 kA.



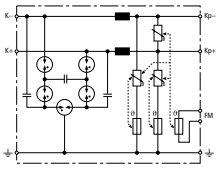


Type BVT ...	TC 1
Part No.	**918 411**
SPD class	TYPE 2 P2
Max. continuous operating voltage (d.c.) (U_C)	170 V
Nominal current (I_L)	0.2 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	5 kA
Series resistance per line	4.7 ohms
Cut-off frequency line-line (f_G)	17 MHz

BVT KKS ALD

Energy coordinated combined arrester for protecting the rectifier in the protective circuit (red colour). Pluggable remote signalling contact (break contact) for overload indication (temperature monitoring of the varistors). Installation in sheet metal housing recommended. Low impulse sparkover voltage due to capacitive control.



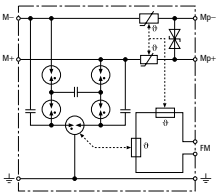


Type BVT ...	KKS ALD 75
Part No.	**918 420**
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	75 V
Nominal current (I_L)	12 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	3.5 kA
D1 Total lightning impulse current (10/350 µs) (I_{imp})	7 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	40 kA
Series resistance per line	5 µH
Cut-off frequency line-line (f_G)	1 MHz
Type of remote signalling contact	break contact

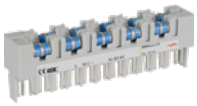
BVT KKS APD

Energy coordinated combined arrester for protecting the voltage measuring circuit (yellow colour). Pluggable remote signalling contact (break contact) for overload indication (temperature monitoring of the discharge paths). Installation in sheet metal housing recommended. Low impulse sparkover voltage due to capacitive control.





Type BVT ...	KKS APD 36
Part No.	**918 421**
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	36.8 V
Nominal current (I_L)	0.05 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	3.5 kA
D1 Total lightning impulse current (10/350 µs) (I_{imp})	7 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	40 kA
Series resistance per line	55 ohms
Type of remote signalling contact	break contact

Description	Type	Product	Part No.	Page
Lightning current / surge arresters				
▪ Lightning current carrying DRL plug-in SPD block can be easily plugged into LSA disconnection blocks of 2/10 type ▪ Versions with / without fail-safe function / visual indication ▪ Modularly expandable with a DRL protective plug to a combined lightning current and surge arrester ▪ With integrated disconnection block contacts	**DRL 10 B 180** **DRL 10 B 180 FSD**		**907 400** **907 401**	331 331
▪ Protective plug for one pair inserted through the earthing frame into the DRL plug-in SPD block ▪ Energy-coordinated with DRL plug-in SPD block ▪ Low voltage protection level for application-specific protection of terminal equipment	**DRL ...**		**907 421** – **907 470**	331 – 332
▪ Earthing module inserted through the earthing frame into the LSA disconnection block ▪ Fast replacement when retrofitting a DEHNrapid LSA protection module	**EM 2 DRL**		**907 496**	333
▪ Snap-on earthing frame for earthing and mounting DRL protective plugs on a 10-pair disconnection block or the lightning current carrying DRL plug-in SPD block	**EF 10 DRL**		**907 498**	333
Surge arresters				
▪ Powerful SPD block can be easily plugged into LSA disconnection blocks of 2/10 type ▪ Versions with / without fail-safe function / visual indication	**DPL 10 G3 110** **DPL 10 G3 110 FSD**		**907 214** **907 216**	333 333
DEHN enclosure for equipotential bonding				
▪ Lightning current carrying earthing system for arresters and shield connection ▪ Pre-mounted mounting frame ▪ Lockable enclosure	**DPG LSA ... P**		**906 100** – **906 103**	334
Routing module for disconnection blocks with LSA spring-loaded terminal				
▪ DIN rail mounted routing module for disconnection blocks ▪ Equipped with LSA disconnection block and spring-loaded terminals for variable wire connection ▪ Routing of different wire diameters	**TL2 10DA CC**		**907 991**	335

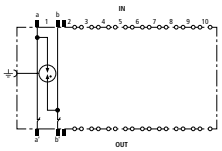
DEHNrapid LSA – Lightning Current / Surge Arrester

Lightning current arrester, surge arrester or combined lightning current and surge arrester that can be plugged into LSA disconnection blocks of series 2. The integrated disconnection block contacts in the 10-pair plug-in SPD block allow for protected testing, disconnecting or patching in systems or the attachment of one-pair surge arresters.

DRL 10 B



Lightning current carrying DRL plug-in SPD block (10 pairs) with three-pole gas discharge tubes for almost all applications. Expandable to a combined lightning current and surge arrester by means of a DRL protective plug. The integrated disconnection block contacts allow testing, measuring and patching with plugged-in protection.

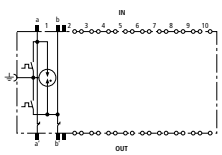


Type DRL ...	10 B 180
Part No.	**907 400**
SPD class	TYPE 1 C
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current (I_L)	0.4 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	≤ 0.005 ohms
Plugs into	LSA disconnection block 2/10

DRL 10 B FSD



Lightning current carrying DRL plug-in SPD block (10 pairs) for almost all applications. Expandable to a combined lightning current and surge arrester by means of a DRL protective plug. The integrated disconnection block contacts allow testing, measuring and patching with plugged-in protection. The three-pole gas discharge tubes have a fail-safe function with visual fault indication.

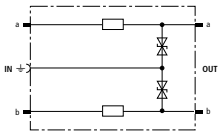


Type DRL ...	10 B 180 FSD
Part No.	**907 401**
SPD class	TYPE 1 C
Fault indication	visual, colour change
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current (I_L)	0.4 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Series resistance per line	≤ 0.005 ohms
Plugs into	LSA disconnection block 2/10

DRL RE



Protective plug (one pair), energy-coordinated with DRL plug-in SPD block, for use as single-stage protective device for terminal equipment with decoupling impedances. Ideally suited for signal circuits sharing a common reference potential. Earthing via EF 10 DRL. For disconnection blocks or DRL plug-in SPD blocks only.



General technical data:	
SPD class	TYPE 3 P1
D1 Total lightning impulse current (10/350 µs) in combination with DRL 10 B... (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) in combination with DRL 10 B... (I_n)	10 kA
Plugs into	LSA disconnection block 2/10 or DRL 10 B ... plug-in SPD block

Type DRL ...	RE 12	RE 24
Part No.	**907 421**	**907 422**
Max. continuous operating voltage (d.c.) (U_C)	14 V	28 V
Nominal current (I_L)	0.4 A	0.4 A
Series resistance per line	4.7 ohms	4.7 ohms
Cut-off frequency line-PG (f_G)	2.7 MHz	4.5 MHz

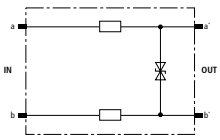
Type DRL ...	RE 48	RE 60
Part No.	**907 423**	**907 424**
Max. continuous operating voltage (d.c.) (U_C)	54 V	70 V
Nominal current (I_L)	0.4 A	0.4 A
Series resistance per line	6.8 ohms	6.8 ohms
Cut-off frequency line-PG (f_G)	7.35 MHz	10.5 MHz

Type DRL ...	RE 180
Part No.	**907 425**
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current (I_L)	0.1 A
Series resistance per line	4.7 ohms
Cut-off frequency line-PG (f_G)	42 MHz

DRL RD

Protective plug (one pair), energy-coordinated with DRL plug-in SPD block, for use as single-stage protective device for terminal equipment. Low voltage protection level line-line for unearthed interfaces. To be mounted into EF 10 DRL. Installation recommended only in combination with DRL plug-in SPD block.





General technical data:	
SPD class	TYPE 3 P1
Nominal current (I_L)	0.4 A
D1 Total lightning impulse current (10/350 µs) in combination with DRL 10 B... (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) in combination with DRL 10 B... (I_n)	10 kA
Plugs into	LSA disconnection block 2/10 or DRL 10 B ... plug-in SPD block

Type DRL ...	RD 12	RD 24
Part No.	**907 441**	**907 442**
Max. continuous operating voltage (d.c.) (U_C)	14 V	28 V
Series resistance per line	2.2 ohms	2.2 ohms
Cut-off frequency line-line (f_G)	2.7 MHz	5.4 MHz

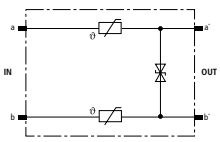
Type DRL ...	RD 48	RD 60
Part No.	**907 443**	**907 444**
Max. continuous operating voltage (d.c.) (U_C)	54 V	70 V
Series resistance per line	4.7 ohms	4.7 ohms
Cut-off frequency line-line (f_G)	7.8 MHz	11 MHz

Type DRL ...	RD 110
Part No.	**907 445**
Max. continuous operating voltage (d.c.) (U_C)	180 V
Series resistance per line	4.7 ohms
Cut-off frequency line-line (f_G)	20 MHz

DRL PD

Protective plug (one pair), energy-coordinated with DRL plug-in SPD block, for use as single-stage protective device for terminal equipment. Low voltage protection level line-line and integrated overcurrent protection for ADSL, ISDN U_{k0} or a/b lines. To be mounted into EF 10 DRL. Installation recommended only in combination with DRL plug-in SPD block.



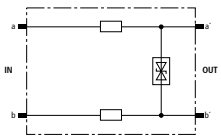


Type DRL ...	PD 180
Part No.	**907 430**
SPD class	TYPE 3 P1
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current (I_L)	0.1 A
D1 Total lightning impulse current (10/350 µs) in combination with DRL 10 B... (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) in combination with DRL 10 B... (I_n)	10 kA
Series resistance per line	10 ohms +/- 15%
Cut-off frequency line-line (f_G)	61 MHz
Plugs into	LSA disconnection block 2/10 or DRL 10 B... plug-in SPD block

DRL HD

Protective plug (one pair), energy-coordinated with DRL plug-in SPD block, for use as single-stage protective device for terminal equipment for high-frequency transmissions such as G.703 or ISDN U_{2m}, S_{2m} and S_0. To be mounted into EF 10 DRL. Installation recommended only in combination with DRL plug-in SPD block.





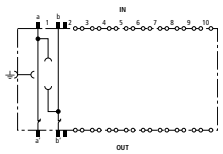
Type DRL ...	HD 24
Part No.	**907 470**
SPD class	TYPE 3 P1
Max. continuous operating voltage (d.c.) (U_C)	28 V
Nominal current (I_L)	0.4 A
D1 Total lightning impulse current (10/350 µs) in combination with DRL 10 B... (I_{imp})	5 kA
C2 Total nominal discharge current (8/20 µs) in combination with DRL 10 B... (I_n)	10 kA
Series resistance per line	4.7 ohms
Plugs into	LSA disconnection block 2/10 or DRL 10 B... plug-in SPD block

Accessories for DEHNrapid LSA

Plug-in SPD Block (without SPDs)

Plug-in SPD block (without SPDs) for 1 to max. 10 three-pole GDT 230 B3 ... gas discharge tubes. Also suitable for DRL protective plugs with earthing frame.





Type	BM 10 DRL
Part No.	**907 499**
Plugs into	LSA disconnection blocks
Earthing via	mounting frame

Gas Discharge Tube

High-capacity replacement gas discharge tube for DRL 10 or BM 10 DRL. Three-pole version with common arcing chamber for a constant voltage protection level line-line and line-ground.



Type	GDT 230 B3 FSD
Part No.	**907 219**
Integrated into Part No.	907 401
Visual fault indication	yes
Fail-safe spring	yes
D1 Total lightning impulse current (10/350 µs)	5 kA

Gas Discharge Tube



High-capacity replacement gas discharge tubes for DRL 10 or BM 10 DRL. Three-pole version with common arcing chamber for a constant voltage protection level line-line and line-ground.

Type	GDT 230 B3
Part No.	**907 218**
Integrated into Part No.	907 400
D1 Total lightning impulse current (10/350 µs)	5 kA

Earthing Frame



Snap-on earthing frame for earthing and installation of max. 10 DRL protection modules. Plugs into a 10-pair disconnection block or DRL plug-in SPD block.

Type	EF 10 DRL
Part No.	**907 498**
Plugs into	LSA disconnection blocks or DRL plug-in SPD block
Earthing via	mounting frame or DRL plug-in SPD block

Label Holder



Universal label holder made of stainless steel for clear identification of LSA connections. Can be snapped onto DEHNrapid LSA plug-in SPD blocks, earthing frames with protective plugs or mounting frames with LSA blocks of the 2/10 series.

Type	SR DRL
Part No.	**907 497**
Plugs into	DRL B, EF DRL, LSA blocks 2/10 (profile, with earth connecting clip)

Earthing Module



Plugged into the EF 10 DRL earthing frame, the earthing module connects a pair placed on an LSA disconnection block to the equipotential bonding. Its function is to directly earth unused cable cores that are placed on the LSA disconnection block. The earthing module must not be used in combination with the DRL 10 B... plug-in SPD block.

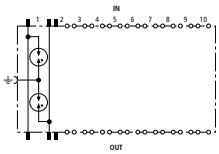
Type	EM 2 DRL
Part No.	**907 496**
D1 Total lightning impulse current (10/350 µs)	5 kA
Plugs into	TL2 10DA ...
Earthing via	EF 10 DRL
Material	**zinc die-casting**

DPL 10 G3

- Pluggable arresters for LSA systems of the 2/10 series.
- Proctection block version for 10 pairs with individually replaceable protection elements.

DPL 10 G3





Plug-in SPD block for ten pairs with three-pole gas discharge tubes for almost all applications. FSD arresters feature a fail-safe function and an additional visual indication when the fail-safe function has been activated. Thus, it can be immediately identified whether an arrester has to be replaced.

Type DPL 10 G3 ...	110	110 FSD
Part No.	**907 214**	**907 216**
SPD class	TYPE 2	TYPE 2
Fault indication	–	visual, colour change
Max. continuous operating voltage (d.c.) (U_c)	180 V	180 V
Nominal current (I_L)	0.4 A	0.4 A
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA

Accessories for DPL 10 G3

Gas Discharge Tube



High-capacity replacement gas discharge tubes for DPL 10 G3. Three-pole version with common arcing chamber for a constant voltage protection level line-line and line-ground.

Type	GDT 230 G3	GDT 230 G3 FSD
Part No.	**907 208**	**907 217**
Integrated into Part No.	907 214	907 216
Visual fault indication	–	yes
Fail-safe spring	–	yes

DEHN Enclosure for Equipotential Bonding

DPG are lockable metal enclosures for installing wiring and protection components. Available in four different sizes, the lightning current carrying enclosures additionally feature terminals for integrating surge arresters and shields into the equipotential bonding system.

DPG LSA

DPG LSA is a completely premounted enclosure system with LSA mounting frame and allows optimised use of arresters and shield connection systems (constant force spring).



General technical data:		
Degree of protection		IP 40

Type DPG LSA ...	30 P	60 P
Part No.	906 100	906 101
Carrying capacity of connection elements D1 Total lightning impulse current (10/350 µs) (I_{imp})	15 kA	30 kA
LSA mounting frame for	1x 3 blocks 2/10	1x 6 blocks 2/10
Wire guides	1 pc(s).	2 pc(s).
Dimensions W x H x D	240 x 260 x 130 mm	240 x 350 x 130 mm

Type DPG LSA ...	120 P	220 P
Part No.	906 102	906 103
Carrying capacity of connection elements D1 Total lightning impulse current (10/350 µs) (I_{imp})	50 kA	50 kA
LSA mounting frame for	2x 6 blocks 2/10	2x 11 blocks 2/10
Wire guides	2 pc(s).	3 pc(s).
Dimensions W x H x D	330 x 350 x 130 mm	330 x 500 x 130 mm

Accessories for DEHN Enclosure for Equipotential Bonding

Self-bonding Rubber Tape

Roll with 9 m self-bonding rubber tape to be wrapped around constant force springs for permanent corrosion protection.



Type	SKB 19 9M SW
Part No.	919 030
Colour	Black ●

Constant Force Spring



Constant force springs allow solderless shield connections for equipotential bonding or lightning equipotential bonding. They can be installed subsequently without interrupting the cable shield or requiring tools for installation. Approved for nuclear installations according to TÜV Certificate No. T12-04-ETL003 (TÜV = German Technical Inspectorate).

General technical data:	
Material	StSt

Type	SA KRF 10 V2A	SA KRF 15 V2A
Part No.	919 031	919 032
Clamping range	4-10 mm	9-15 mm

Type	SA KRF 22 V2A	SA KRF 29 V2A
Part No.	919 033	919 034
Clamping range	14-22 mm	18.5-29 mm

Type	SA KRF 37 V2A
Part No.	919 035
Clamping range	23.5-37 mm

Accessories for LSA Technology

- Proven insulation displacement method
- 45° angled blades in the disconnection block ensure a minimum change in cross-section
- Enhanced stability of the conductor
- Enhanced corrosion resistance
- Further accessories available on request

Mounting Frame

Mounting frame for 10 LSA blocks of the 2/10 series, total width: 104.5 mm



Type	MB2 10 LSA
Part No.	**907 995**
Dimensions	223 x 105 x 42 mm

Insertion Tool

Insertion tool with sensor for LSA technology for connecting the wires and simultaneously cutting them to the required length. With fold-out extraction hook and blade.



Type	AW2 LSA
Part No.	**907 994**
Colour	White O

Terminal Block

Series 2 for LSA technology for inseparably connecting 10 pairs each on the cable and routing side. Accommodates DPL 10 G3 arresters. Parallel protective circuit only.



Type	AL2 10DA LSA
Part No.	**907 997**
Test standards	DIN 47608-1, -2
Diameter of solid conductors	0.40-0.80 mm
Conductor diameter with insulation	0.70-1.50 mm

Disconnection Block

Series 2 for LSA technology for connecting 10 pairs each on the cable and routing side. Protection is provided between the disconnection contacts as soon as DRL components are plugged in. DPL 10 G3 arresters can also be plugged into the disconnection block.



Type	TL2 10DA LSA
Part No.	**907 996**
Test standards	DIN 47608-1, -2
Approvals	compliance with DTAG TS 0272/96
Diameter of solid conductors	0.40-0.80 mm
Conductor diameter with insulation	0.70-1.50 mm

Earthing Plug

Series 2 for LSA technology for connecting up to 38 earth drain wires or unused signal cores. With earth wire and M4 ring cable lug.



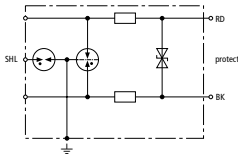
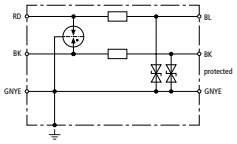
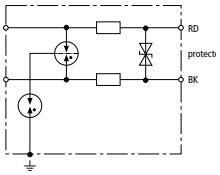
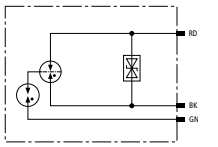
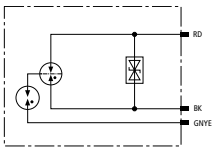
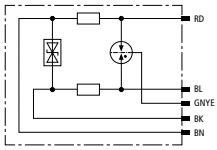
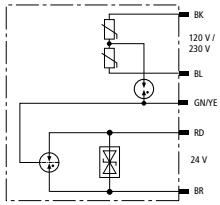
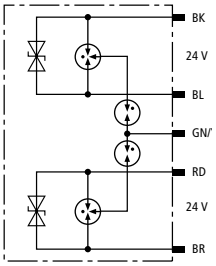
Type	EL2 38EA LSA
Part No.	**907 993**
Earthing via	earthing conductor with M4 ring cable lug
Diameter of solid conductors	0.40 - 0.80 mm
Conductor diameter with insulation	0.70 - 1.50 mm
Colour	red ●

Routing Module for Disconnection Blocks with LSA Spring-Loaded Terminal

DIN rail mounted routing module with LSA disconnection block of the 2/10 series as well as spring-loaded terminals for variable wire connection. DPL and DEHNrapid LSA surge arresters can be plugged into the routing module.



Type	TL2 10DA CC
Part No.	**907 991**
Carrying capacity of connection components D1 Total lightning impulse current (10/350 µs) (I_{imp})	5 kA
For mounting on	35 mm DIN rails acc. to EN 60715
Connection (input / output)	spring or LSA / spring or LSA
Earthing via	DIN rail / flat connector 6.3 mm
Diameter of solid conductors	0.40-0.80 mm
Conductor diameter with insulation	0.70-1.60 mm

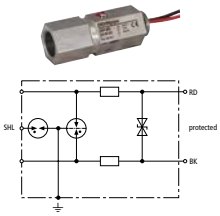
Description / Type	Basic circuit diagram	Product	Part No.	Page
DEHNpipe MD / ME				
DPI MD ▪ For one balanced interface ▪ Direct or indirect shield earthing ▪ Nominal voltage: 24 V ▪ For series connection ▪ With M20 x 1.5 thread (female/male)			**929 941**	337
DPI ME ▪ For one unbalanced interface ▪ Nominal voltage: 24 V ▪ For series connection ▪ With 1/2-14 NPT thread (male/male)			**929 921**	337
DEHNpipe MD Ex (i)				
DPI MD EX ▪ For one balanced interface ▪ Nominal voltage: 24 V ▪ For series connection ▪ With M20 x 1.5 or 1/2-14 NPT thread			**929 960** **929 965**	337 337
DEHNpipe CD Ex (i)				
DPI CD EXI ▪ For one balanced interface ▪ Nominal voltage: 24 V ▪ For parallel connection ▪ With M20 x 1.5 or 1/2-14 NPT thread			**929 961** **929 963**	337 337
DEHNpipe CD Ex (d)				
DPI CD EXD 24 ▪ For one balanced interface ▪ Nominal voltage: 24 V ▪ For parallel connection ▪ With M20 x 1.5 or 1/2-14 NPT thread			**929 962** **929 964**	337 337
DPI CD HF EXD 5 ▪ For one balanced interface ▪ Nominal voltage: 5 V ▪ For series connection ▪ With M20 x 1.5 thread			**929 971**	337
DPI CD EXD 230 24 ▪ For one balanced interface and one 120/230 V power supply system ▪ Nominal voltage: 24 V and 120/230 V ▪ For parallel connection ▪ With M20 x 1.5 or 1/2-14 NPT thread			**929 969** **929 970**	338 338
DEHNpipe CD Ex (i) + Ex (d)				
DPI CD EXI+D 2x24 ▪ For two balanced interfaces ▪ Nominal voltage: 24 V ▪ For parallel connection ▪ With M20 x 1.5 or1/2-14 NPT thread			**929 950** **929 951**	338 338

DEHNpipe

Surge arrester for outdoor use to be screwed onto two-wire field devices. Stainless steel. Installation up to a degree of protection of IP 67.

DPI MD

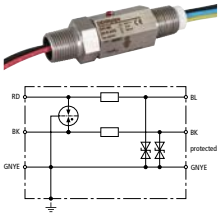
Energy-coordinated two-stage arrester, no leakage currents to earth, for 4-20 mA interfaces with M20 x 1.5 thread (female/male). Direct, indirect or no shield earthing. Cable gland available as an accessory.



Type DPI ...	MD 24 M 2S
Part No.	**929 941**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	34.8 V
Nominal current (I_L)	0.5 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency line-line (f_G)	14 MHz
For mounting on (field / device side)	M20 x 1.5 female thread / M20 x 1.5 male thread
Approvals	SIL

DPI ME

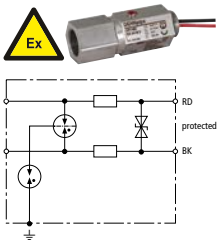
Energy-coordinated two-stage arrester with gas discharge tube and diodes to earth. For unbalanced interfaces with 1/2 -14 NPT thread (male/male). The earthing conductor is led through the surge arrester.



Type DPI ...	ME 24 N A2G
Part No.	**929 921**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	34.8 V
Nominal current (I_L)	0.5 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
For mounting on (field / device side)	1/2-14 NPT male thread / 1/2-14 NPT male thread
Approvals	UL, SIL

DPI MD EX

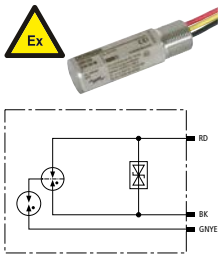
Energy-coordinated two-stage surge arrester with low-capacitance protective circuit for protecting intrinsically safe measuring circuits and bus systems, meets FISCO requirements. Insulation strength > 500 V to earth. Cable glands must be ordered separately.



Type DPI ...	MD EX 24 M 2	MD EX 24 N 2
Part No.	**929 960**	**929 965**
SPD class	TYPE 2 P1	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	34.8 V	34.8 V
Nominal current (I_L)	0.5 A	0.5 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
Cut-off frequency line-line (f_G)	7 MHz	7 MHz
For mounting on (field / device side)	M20 x 1.5 female thread / M20 x 1.5 male thread	1/2-14 NPT female thread / 1/2-14 NPT male thread
Approvals	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL	ATEX, IECEx, CCC, SIL

DPI CD EXI

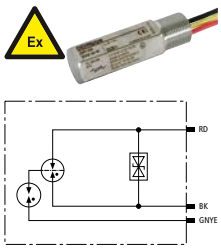
Surge arrester with a low-capacitance protective circuit for protecting intrinsically safe measuring circuits and bus systems, meets FISCO requirements. Insulation strength > 500 V to earth.



Type DPI ...	CD EXI 24 M	CD EXI 24 N
Part No.	**929 961**	**929 963**
SPD class	TYPE 2 P1	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	32 V	32 V
Nominal current (I_L)	0.55 A	0.55 A
D1 Lightning impulse current (10/350 µs) line-PG (I_{imp})	1 kA	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
Cut-off frequency line-line (f_G)	67 MHz	67 MHz
For mounting on (field / device side)	M20 x 1.5 male thread	1/2-14 NPT male thread
Approvals	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL

DPI CD EXD

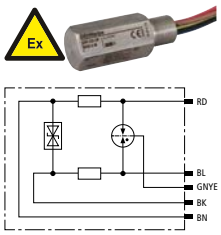
Flameproof surge arrester with a low-capacitance protective circuit for protecting measuring circuits and bus systems in potentially explosive atmospheres. Insulation strength > 500 V to earth. Certified to CSA and USA Hazloc standards.



Type DPI ...	CD EXD 24 M	CD EXD 24 N
Part No.	**929 962**	**929 964**
SPD class	TYPE 2 P1	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	32 V	32 V
Nominal current (I_L)	0.55 A	0.55 A
D1 Lightning impulse current (10/350 µs) line-PG (I_{imp})	1 kA	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
Cut-off frequency line-line (f_G)	67 MHz	67 MHz
For mounting on (field / device side)	M20 x 1.5 male thread	1/2-14 NPT male thread
Approvals	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL

DPI CD HF EXD

Flameproof surge arrester with an energy-coordinated low-capacitance protective circuit for protecting measuring circuits and bus systems in potentially explosive atmospheres.

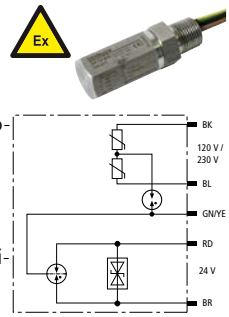


Type DPI ...	CD HF EXD 5 M
Part No.	**929 971**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	6 V
Nominal current at 80 °C (I_L)	0.1 A
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Cut-off frequency line-line (f_G)	100 MHz
For mounting on (field / device side)	M20 x 1.5 male thread
Approvals	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL

DPI CD EXD 230 24

Flameproof surge arrester for the data and power side for protecting one 120 / 230 V power supply system and one 24 V data interface of field devices in potentially explosive areas (zones 1 and 2).
Additional safety due to fault-proof Y circuit for 120 / 230 V power supply systems.

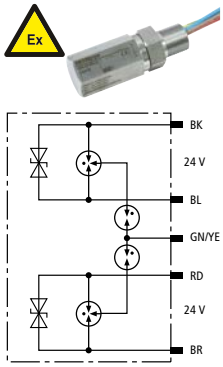
II 2 G Ex d IIC T5/T6 version universally applicable in hazardous zones 1 and 2. Certified to CSA and USA Hazloc standards.



Type DPI ...	CD EXD 230 24 M	CD EXD 230 24 N
Part No.	**929 969**	**929 970**
SPD class	TYPE 2 P2	TYPE 2 P2
Max. continuous operating voltage (d.c.) (U_C)	32 V	32 V
Nominal current at 80 °C (I_L)	0.55 A	0.55 A
D1 Lightning impulse current (10/350 µs) line-PG (I_{imp})	1 kA	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA	10 kA
For mounting on (field / device side)	M20 x 1.5 male thread	1/2-14 npt male thread
Approvals	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL

DPI CD EXI+D 2X24

Flameproof surge arrester for protecting two 24 V interfaces in potentially explosive atmospheres.



Type DPI ...	CD EXI+D 2X24 M	CD EXI+D 2X24 N
Part No.	**929 950**	**929 951**
SPD class	TYPE 2 P1	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	36 V	36 V
Nominal current (I_L)	0.55 A	0.55 A
D1 Lightning impulse current (10/350 µs) line-PG (I_{imp})	1.5 kA	1.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
For mounting on (field / device side)	M20 x 1.5 male thread	1/2-14 NPT male thread
Approvals	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL	ATEX, IECEx, CCC, CSA & USA Hazloc, SIL

Accessories for DEHNpipe

EMC Cable Gland

Brass gland with shield connection



Type	KV S M20 MS 9.5
Part No.	**929 982**
Sealing range (Rd)	6.5-9.5 mm
Shield diameter	3.2-6.5 mm
For mounting on	M20 x 1.5
Degree of protection	IP 68

Cable Gland

Brass gland without shield connection



Type	KV M20 MS 10.5
Part No.	**929 984**
Sealing range (Rd)	7.0-10.5 mm
For mounting on	M20 x 1.5
Degree of protection	IP 68

Brass Earthing Ring

Earthing ring made of nickel-plated brass, for externally earthing DPI devices.



Type	ER DPI M20
Part No.	**929 996**
For mounting on	DPI M20 x 1.5

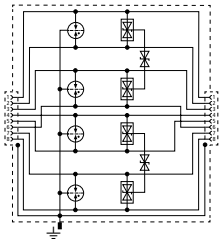
DEHNpatch – Arrester for Data Networks and Ethernet Applications

DEHNpatch devices fulfil various requirements and can be used universally for Ethernet, Industrial Ethernet, Power over Ethernet (IEEE 802.3 compliant up to PoE++ / 4PPoE) as well as general applications in structured cabling of up to 10 Gbit.

DPA CLE IP66



Universal surge arrester for GBit Ethernet applications, Power over Ethernet (IEEE 802.3 compliant up to PoE++ / 4PPoE) and similar applications in structured cabling systems up to class E in indoor and outdoor areas in an IP66 rated enclosure impervious to dust and water. Protection of all pairs with gas discharge tubes and one adapted filter matrix for each pair. Fully shielded surge protective solution with RJ 45 sockets. Universal mounting bracket for pole and wall mounting.
External accessories: Tensioning straps for pole mounting

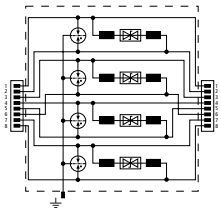


Type DPA …	CLE IP66
Part No.	929 221
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) pair-pair (PoE) (U_c)	60 V
Nominal current (I_L)	1 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	0.8 kA
D1 Total lightning impulse current (10/350 µs) (I_{imp})	4 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency (f_G)	250 MHz
Degree of protection (with installed cables)	IP 66
Connection (input / output)	RJ45 socket / RJ45 socket
Approvals	UL, CSA

DPA M CAT6

Universal arrester for Industrial Ethernet, Power over Ethernet (IEEE 802.3 compliant up to PoE++ / 4PPoE) and similar applications in structured cabling systems according to Cat. 6 and class E_A up to 500 MHz. Fully shielded type with patch cable for DIN rail mounting (up to 10 Gbit Ethernet).



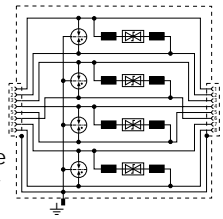


Type DPA …	M CAT6 RJ45S 48
Part No.	929 100
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_c)	48 V
Max. continuous operating voltage (d.c.) pair-pair (PoE) (U_c)	57 V
Nominal current (I_L)	1 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	1 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency (f_G)	250 MHz
Connection (input / output)	RJ45 connecting line / RJ45 connecting line

DEHNpatch class EA NEW



Universal, space-saving combined arrester of 19 mm in width and RJ45 connection system with status indication for simple maintenance. Protection of applications in structured cabling according to class E_A to 500 MHz; e.g. industrial Ethernet, data distributors, digital camera systems, Power over Ethernet (IEEE 802.3 compliant to 4PPoE) and Ethernet-based interfaces in general. Protection of all pairs through powerful gas discharge tubes and protective diodes between signal cores and pairs. Fully shielded adapter design with RJ45 sockets for DIN rail mounting. With additional screw connection on the enclosure for an optional earth connection.

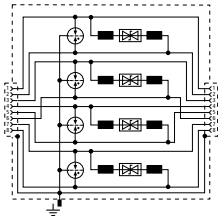


Type DPA …	CL8 EA 4PPOE
Part No.	929 161 NEW
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_c)	3.3 V
Max. continuous operating voltage (d.c.) pair-pair (PoE) (U_c)	58 V
Nominal current (I_L)	1.5 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	0.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency (f_G)	500 MHz
Connection (input / output)	RJ45 socket / RJ45 socket
Approvals	GHMT

DEHNpatch Class E



Universal arrester for Industrial Ethernet, Power over Ethernet (IEEE 802.3 compliant up to PoE++ / 4PPoE) and similar applications in structured cabling systems according to class E up to 250 MHz. Protection of all pairs by means of powerful gas discharge tubes and one adapted filter matrix per pair. Fully shielded type with sockets for DIN rail mounting (up to 1 Gbit Ethernet).

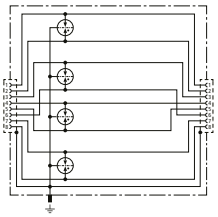


Type DPA …	M CLE RJ45B 48
Part No.	929 121
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_c)	48 V
Max. continuous operating voltage (d.c.) pair-pair (PoE) (U_c)	57 V
Nominal current (I_L)	1 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	0.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency (f_G)	250 MHz
Connection (input / output)	RJ45 socket / RJ45 socket
Approvals	CSA, UL

DEHNpatch Class D NEW

Universal, space-saving lightning current arrester of 19 mm in width and RJ45 connection system for lightning equipotential bonding. Protection of applications in structured cabling according to class S to 100 MHz; e.g. industrial Ethernet, data distributors, digital camera systems, Power over Ethernet (IEEE 802.3 compliant to 4PPoE) and Ethernet-based interfaces in general. Protection of all pairs through powerful gas discharge tubes. Fully shielded adapter design with RJ45 sockets for DIN rail mounting. With additional screw connection on the enclosure for an optional earth connection.



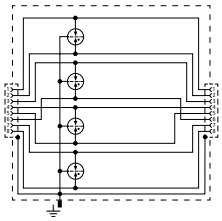


Type DPA ...	C8 D 4PPOE
Part No.	**929 166** NEW
SPD class	TYPE 1
Max. continuous operating voltage (d.c.) (U_c)	3.3 V
Max. continuous operating voltage (d.c.) pair-pair (PoE) (U_c)	58 V
Nominal current (I_L)	1.5 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	0.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency (f_G)	100 MHz
Connection (input / output)	RJ45 socket / RJ45 socket

DEHNpatch Class D

Universal arrester for Industrial Ethernet, Power over Ethernet (IEEE 802.3 compliant up to PoE++ / 4PPoE) and similar applications in structured cabling systems according to class D up to 100 MHz. Protection of all pairs by powerful gas discharge tubes. DIN rail mounted adapter type with sockets.





Type DPA ...	M CLD RJ45B 48
Part No.	**929 126**
SPD class	TYPE 2 P2
Max. continuous operating voltage (d.c.) (U_c)	48 V
Max. continuous operating voltage (d.c.) pair-pair (PoE) (U_c)	57 V
Nominal current (I_L)	1 A
D1 Lightning impulse current (10/350 µs) per line (I_{imp})	0.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency (f_G)	100 MHz
Connection (input / output)	RJ45 socket / RJ45 socket
Approvals	UL

Suitable test devices can be found on page 351.



Accessories for DEHNpatch – Arrester for Data Networks and Ethernet Applications

DPA MOD IRCM

Installation accessories for using the DEHNpatch CL8 EA 4PPOE arrester with the DRC IRCM remote signalling unit for the monitoring and remote signalling of the arrester state.



Type	DPA MOD IRCM
Part No.	**929 309** NEW
Suitable for	DPA CL8 EA 4PPOE

Lightning Protection Pipe Clamp with Tines

Fixing on elements of any cross-section with clamping screw (M8).



Type	BRS 27.168 Z AK1X10 2X6.8 V2A
Part No.	**540 200**
Clamping range Ø pipe	27-168 mm (3/4-6'')
Material (conductor holder)	StSt
Connection Rd	1-2 x 6-8 mm / 1 x 10 mm
Connection (solid / stranded)	4-50 mm²

Tensioning Strap for Pole Mounting

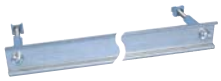
Fixing on elements of any cross-section with clamping screw (M8).



Type	LH 6.8 SB50.150 SPSM8 V2A
Part No.	**200 039**
Clamping range Ø pipe	50-150 mm
Material (conductor holder)	StSt

Mounting Set for DEHNpatch

The set comprises a DIN rail for up to 24 DEHNpatch devices and different distance bolts with sliding nuts for installation into data distributors. To save space, the DIN rail can be mounted at the distributor panel or even upstream of the mounting sections in a 19" grid dimension.



Type	MS DPA
Part No.	**929 199**
Mounting in	19" cabinets

482.6 mm (19 inch) Universal DIN Rail Carrier

For 19" technology (3 rack units) or wall mounting.
DIN rail can be mounted vertically or horizontally.



Type	MF DR 3RU 19"
Part No.	**929 335**
Dimensions	3 vertical modules
Enclosure material	aluminium/zinc sheet / StSt

Mounting Set DEHNpatch and DEHNgate

DIN rail mounting set for DEHNpatch and DEHNgate. For individual installation of the arresters.



Type	MS EB DPA DGA
Part No.	**929 200**
Material (earthing clip)	St/gal Zn
Material (flat receptable)	CuZn / Sn
Connection cross-section	0.5-1.5 mm²

SPDs for Building Systems

Description	Type	Product	Part No.	Page
DEHNprotector				
▪ Combined adapter for protecting the power and data side of a terminal device ▪ Different versions for protecting different interfaces ▪ With visual operating state / fault indication	**DPRO 230 TV** **DPRO 230 NT** **DPRO 230 LAN100**		**909 300** **909 310** **909 321**	342 342 342
BUStector				
▪ Surge arrester for protecting KNX / EIB systems ▪ Optimally adapted to KNX / EIB systems ▪ EIBA-approved	**BT 24**		**925 001**	342
DEHNbox				
▪ Compact surge arrester in a surface-mounted plastic enclosure ▪ Powerful protection for telecommunication interfaces at the boundaries from LPZ 0_A to 2 ▪ Suitable for wall mounting IP20	**DBX TC B 180**		**922 220**	343
DEHNbox actiVsense				
▪ Wall-mounted universal lightning current and surge arrester ▪ Integrated actiVsense technology ▪ Easy installation and retrofitting	**DBX U4 KT BD S 0-180**		**922 400**	343

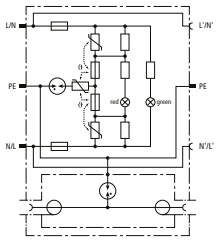
DEHNprotector – Combined Adapter

Combined surge protective adapter for plugging into earthed socket outlets, with visual operating state and fault indication.

DPRO 230 TV

Combined surge protection for the power and antenna side of TV, radio or satellite receivers. With visual operating state and fault indication and integrated child safety mechanism





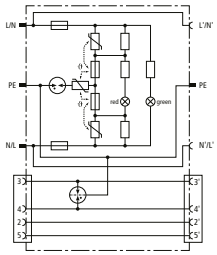
Type DPRO 230 ...	TV
Part No.	**909 300**
Protection of the data side	
SPD class	TYPE 2
Max. continuous operating voltage (d.c.) (U_C)	60 V
C2 Nominal discharge current (8/20 µs) line-shield (PE) (I_n)	5 kA
Insertion loss 0-2400 MHz	≤ 1.5 dB
Connection (input / output)	F socket / F socket

Type DPRO 230 ...	TV
Part No.	**909 300**
Protection of the power side	
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] (U_p)	≤ 1.35 kV
Max. mains-side overcurrent protection	16 A gL/gG or B 16 A

DPRO 230 NT

Combined surge protection for the power and data side of a digital network termination (NT) (IP telephony), especially telecommunication interfaces up to VVDSL and G.fast (up 1 Gbit/s). With visual operating state and fault indication and an integrated child lock on the power side.





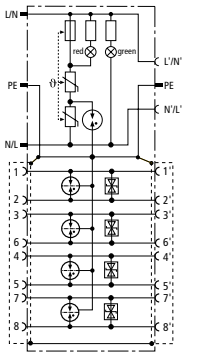
Type DPRO 230 ...	NT
Part No.	**909 310**
Protection of the data side	
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	180 V
Lightning impulse current (10/350 µs) per line D1 (I_{imp})	1 kA
C2 Nominal discharge current (8/20 µs) per line (I_n)	2.5 kA
Cut-off frequency (f_G)	220 MHz
Connection (input / output)	RJ12 socket / RJ12 socket

Type DPRO 230 ...	NT
Part No.	**909 310**
Protection of the power side	
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] (U_p)	≤ 1.35 kV
Max. mains-side overcurrent protection	B 16 A

DPRO 230 LAN100

Combined surge protection for the power side and data input for protecting LAN components. Protection of all pairs for Ethernet pin assignment.
It meets the requirements for channel class D in accordance with EN 50173 and is thus suitable for 1000 Base-T (Gigabit Ethernet). With visual operating state and fault indication and integrated child safety mechanism.





Type DPRO 230 ...	LAN100
Part No.	**909 321**
Protection of the data side	
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	3.3 V
Lightning impulse current (10/350 µs) per line D1 (I_{imp})	0.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Cut-off frequency (f_G)	180 MHz
Connection (input / output)	shielded RJ45 socket / shielded RJ45 socket

Type DPRO 230 ...	LAN100
Part No.	**909 321**
Protection of the power side	
SPD according to EN 61643-11 / IEC 61643-11	type 3 / class III
Max. continuous operating voltage (a.c.) (U_C)	255 V (50 / 60 Hz)
Total discharge current (8/20 µs) [L+N-PE] (I_{total})	5 kA
Voltage protection level [L-N] (U_p)	≤ 1.25 kV
Max. mains-side overcurrent protection	B 16 A

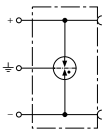
BUStector

Surge arrester for KNX / EIB buses with connecting leads

BT

Surge arrester with KNX bus terminal design, adapted to the immunity of KNX / EIB systems. EIBA-certified.





Type	BT 24
Part No.	**925 001**
SPD class	TYPE 2
Max. continuous operating voltage (d.c.) (U_C)	45 V
Nominal current (I_L)	6 A
D1 Lightning impulse current (10/350 µs) per line	1 kA
C2 Nominal discharge current per line (I_n)	5 kA
Cut-off frequency line-line (f_G)	70 MHz
Approvals	EIBA-Zertifizierung Nr. Z 32/1399/95

SPDs for Building Systems

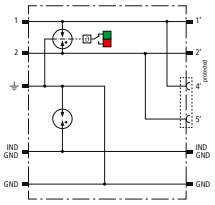
DEHNbox

Compact combined arrester with status display and quick connection technology in a surface-mounted plastic enclosure for protecting telecommunication (VDSL, VVDSL, SVVDSL and G.Fast) and information technology interfaces.

DBX TC B 180



Space-saving, compact surge arrester in a surface-mounted plastic enclosure with push-in connection technology and status indication for protecting one pair of unearthed balanced interfaces, particularly telecommunication interfaces up to VVDSL and G.fast (up to 1 Gbit/s). Direct / indirect shield earthing possible. Connection of a pair or a patch cable with RJ45 plug at the output.
Tests by Deutsche Telekom Technik GmbH confirm compatibility with vectoring VDSL (VVDSL), super vectoring VDSL (SVVDSL) and G.Fast.

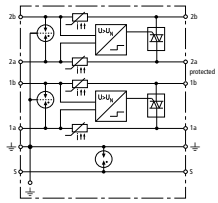


Type DBX ...	TC B 180
Part No.	**922 220**
SPD class	TYPE 1 P2
Max. continuous operating voltage (d.c.) (U_C)	180 V
Nominal current at 40°C (I_L)	1 A
D1 Total lightning impulse current (10/350 µs) (I_{imp})	7.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	0 ohms

DBX U4 KT BD S 0-180



Compact combined lightning current and surge arrester in a surface-mounted plastic enclosure with actiVsense technology for protecting two pairs with the same or a different signal voltage of galvanically isolated balanced interfaces. Direct or indirect shield earthing.



Type DBX ...	U4 KT BD S 0-180
Part No.	**922 400**
SPD class	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	180 V
Permissible superimposed signal voltage (U_{signal})	≤ +/- 5 V
Cut-off frequency line-line (U_{signal}, balanced 100 ohms) (f_G)	50 MHz
Nominal current I_L (equals max. short-circuit current)	100 mA
D1 Total lightning impulse current (10/350 µs) (I_{imp})	10 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	20 kA
Series resistance per line	≤ 9 ohms; typically 7.9 ohms
Dimensions (L x W x H)	93 x 93 x 55 mm

Accessories for DEHNbox

TAE-F connecting cable



TAE-F connecting cable with TAE-F plug on RJ11 plug

Type	ASL DBX TAE F
Part No.	**922 020**
Conductor length	3 m
Type of connection	TAE-F / RJ11

SPDs for SUB-D Connection

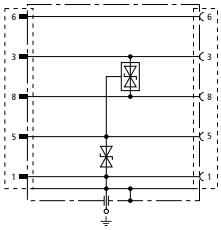
FS

Surge arrester, SUB-D socket/pin.
Alternative pinning available on request for the USD series.

FS 9E PB



Surge arrester for Profibus-DP. 9-pin SUB-D version, pin 6 unprotected for the programming interface.



Type	FS 9E PB 6
Part No.	**924 017**
SPD class	TYPE 4 P1
Max. continuous operating voltage (d.c.) (U_C)	7 V
C1 Nominal discharge current (8/20 µs) line-line (I_n)	0.2 kA
C1 Nominal discharge current (8/20 µs) line-SG (I_n)	0.2 kA
C1 Nominal discharge current (8/20 µs) SG-PG (I_n)	0.4 kA
Cut-off frequency (f_G)	90 MHz
Connection (input / output)	SUB-D 9 plug / SUB-D 9 socket

SPDs for Coaxial Connection

Description	Type	Product	Part No.	Page
UGKF BNC				
▪ Easily adaptable ▪ With indirect shield earthing to avoid ground loops ▪ Protection of video cameras	**UGKF BNC**		**929 010**	345
DEHNgate BNC VC				
▪ Easily adaptable ▪ For DIN rail or wall mounting ▪ With direct or indirect shield earthing	**DGA BNC VCD** **DGA BNC VCID**		**909 710** **909 711**	345 345
DEHNgate FF / GF / GFF TV				
▪ Combinable system of lightning current and surge arresters ▪ With F connection for 75-ohm satellite and broadband cable systems ▪ Integrated measuring output	**DGA FF TV** **DGA GF TV** **DGA GFF TV**		**909 703** **909 704** **909 705**	345 345 345
DEHNgate 5X FF TV				
▪ Compact surge arrester for satellite systems ▪ Optimal five-channel protection for 75-ohm antenna splitters and multi-switches ▪ Fulfils the shielding requirements of class A acc. to EN 50083-2	**DGA FF5 TV**		**909 706**	345
DEHNgate G				
▪ Compact dimensions ▪ Wide transmission range ▪ With SMA, BNC or N connection	**DGA G SMA** **DGA G BNC** **DGA G N**		**929 039** **929 042** **929 044**	346 346 346
DEHNgate AG				
▪ Exchangeable gas discharge tube ▪ Long endurance	**DGA AG BNC** **DGA AG N**		**929 043** **929 045**	346 346
DEHNgate LG / L4				
▪ Wide transmission range for multi-frequency applications ▪ Integrated quarterwave technology ▪ With 7/16 or N connection	**DGA LG 7 16 MFA** **DGA L4 7 16 S** **DGA L4 7 16 MFA**		**929 146** **929 047** **929 148**	346 346 346

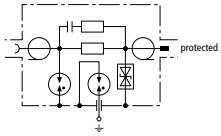
UGKF

Surge arrester designed as cable adapter for coaxial systems such as video and camera systems

UGKF BNC

Two-stage surge arrester with indirect shield earthing for protecting video cameras and Arcnet with BNC connection to avoid ground loops.





Type	UGKF BNC
Part No.	**929 010**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	8 V
Nominal current (I_L)	0.1 A
C2 Nominal discharge current (8/20 µs) line-shield (I_n)	2.5 kA
Insertion loss at 300 MHz (50 ohms)	≤ 3 dB
Return loss at 40 MHz (50 ohms)	≥ 20 dB
Insertion loss at 265 MHz (75 ohms)	≤ 3 dB
Return loss at 40 MHz (75 ohms)	≥ 20 dB
Approvals	CSA, UL

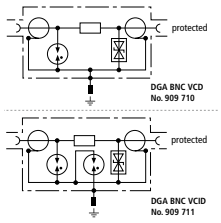
DEHNgate – SPDs for Coaxial Connection

Lightning current / surge arrester with a cable adapter design for coaxial systems such as CCTV, cell sites and antenna systems

DGA BNC VC

The space-saving surge arrester with BNC socket can be mounted on DIN rails for protecting video and camera systems. Available with direct (VCD) or indirect shield connection (VCID) depending on the type to avoid ground loops.



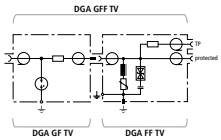


Type DGA ...	BNC VCD	BNC VCID
Part No.	**909 710**	**909 711**
SPD class	TYPE 2 P1	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	6.4 V	6.4 V
Nominal current (I_L)	0.1 A	0.1 A
D1 Lightning impulse current (10/350 µs) (I_{imp})	1 kA	1 kA
C2 Nominal discharge current (8/20 µs) line-shield (I_n)	5 kA	5 kA
Frequency range	0-300 MHz	0-300 MHz
Connection (input / output)	BNC socket / BNC socket	BNC socket / BNC socket
Approvals	CSA, UL	CSA, UL

DGA TV

DGA ... TV arresters with F connection for remote supply protect 75-ohm satellite and broadband cable systems and fulfil the high shielding requirements of class A according to EN 50083-2. They allow space-saving installation in all common TV and satellite applications and are available as lightning current arresters, surge arresters and combined lightning current and surge arresters with integrated measuring output for checking the system.





General technical data:	
Nominal current (I_L)	2 A

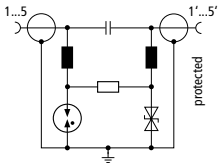
Type DGA ...	FF TV	GF TV
Part No.	**909 703**	**909 704**
SPD class	TYPE 3 P1	TYPE 1
Max. continuous operating voltage (d.c.) (U_C)	24 V	60 V
D1 Lightning impulse current (10/350 µs) (I_{imp})	0.2 kA	2.5 kA
C2 Nominal discharge current (8/20 µs) (I_n)	1.5 kA	10 kA
Frequency range	d.c. / 5-3000 MHz	0-2400 MHz
Connection (input / output)	F socket / F socket	F socket / F plug

Type DGA ...	GFF TV
Part No.	**909 705**
SPD class	TYPE 1 TYPE 3 P1
Max. continuous operating voltage (d.c.) (U_C)	24 V
D1 Lightning impulse current (10/350 µs) (I_{imp})	2.5 kA
C2 Nominal discharge current (8/20 µs) (I_n)	10 kA
Frequency range	d.c. / 5-2400 MHz
Connection (input / output)	F socket / F socket

DGA FF5 TV

Five-channel surge arrester for 75-ohm antenna systems. Special design for SAT antenna splitters and multi-switches. The arrester fulfils the shielding requirements of class A acc. to EN 50083-2. Fixing material and EB conductor included in delivery.

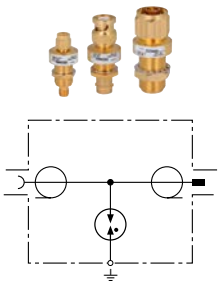




Type DGA ...	FF5 TV
Part No.	**909 706**
SPD class	TYPE 2 P1
Max. continuous operating voltage (d.c.) (U_C)	20 V
Nominal current (I_L)	0.4 A
D1 Lightning impulse current (10/350 µs) (I_{imp})	0.5 kA
D1 Total lightning impulse current (10/350 µs) (I_{imp})	2.5 kA
C2 Nominal discharge current (8/20 µs) (I_n)	2.5 kA
C2 Total nominal discharge current (8/20 µs) (I_n)	10 kA
Frequency range	47-2200 MHz
Connection (input / output)	F socket / F socket

DGA G

Surge arrester for remote supply with integrated gas discharge tube. Ideally suited for wireless applications for the coaxial interfaces of devices and antennas. Available with SMA, BNC or N connection for bushing installation.



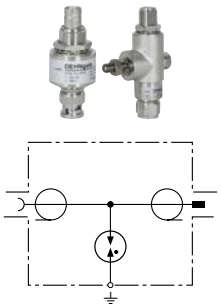
General technical data:	
SPD class	TYPE 2
Max. continuous operating voltage (d.c.) (U_C)	135 V
D1 Lightning impulse current (10/350 µs) (I_{imp})	1 kA
C2 Nominal discharge current (8/20 µs) (I_n)	5 kA

Type DGA ...	G SMA	G BNC
Part No.	**929 039**	**929 042**
Nominal current (I_L)	2 A	3.5 A
Max. transmission capacity	60 W	25 W
Frequency range	0-5.8 GHz	0-4 GHz
Connection	SMA socket / SMA plug	BNC socket / BNC plug

Type DGA ...	G N
Part No.	**929 044**
Nominal current (I_L)	6 A
Max. transmission capacity	60 W
Frequency range	0-5.8 GHz
Connection	N socket / N plug

DGA AG

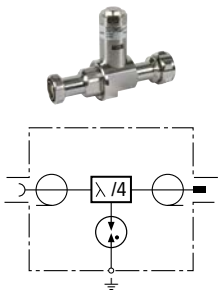
Arrester suitable for remote supply with exchangeable gas discharge tube. Long endurance due to minimum contact erosion resulting from the large-area contact surface of the gas discharge tube.



Type DGA ...	AG BNC	AG N
Part No.	**929 043**	**929 045**
SPD class	TYPE 1	TYPE 1
Max. continuous operating voltage (d.c.) (U_C)	180 V	180 V
Nominal current (I_L)	3.5 A	6 A
Max. transmission capacity	150 W	150 W
D1 Lightning impulse current (10/350 µs) (I_{imp})	5 kA	5 kA
C2 Nominal discharge current (8/20 µs) (I_n)	20 kA	20 kA
Frequency range	0-1 GHz	0-2.5 GHz
Connection	BNC socket / BNC plug	N socket / N plug

DGA LG

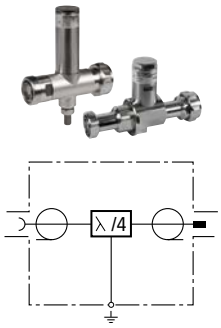
Quarter-wave arrester with spark gap for remote supply protects multi-frequency applications (multi-carrier systems) due to minimum passive intermodulation. Broadband device for all 4+3G and LTE services.



Type DGA ...	LG 7 16 MFA
Part No.	**929 146**
SPD class	TYPE 1
Max. continuous operating voltage (d.c.) (U_C)	65 V
Nominal current (I_L)	13 A
Max. transmission capacity	1500 W
D1 Lightning impulse current (10/350 µs) (I_{imp})	5 kA
C2 Nominal discharge current (8/20 µs) (I_n)	20 kA
Frequency range	690 MHz-2.7 GHz
Connection	7/16 socket / 7/16 plug

DGA L4

Combined lightning current and surge arrester with maintenance-free quarter-wave technology for multi-frequency applications (multi-carrier systems). The arrester is also capable of discharging high partial lightning currents. No remote supply as the arrester represents an electrical short-circuit for low-frequency signals. Broadband device for all 4+3G services.



Type DGA ...	L4 7 16 S	L4 7 16 MFA
Part No.	**929 047**	**929 148**
SPD class	TYPE 1 P1	TYPE 1 P1
Max. continuous operating voltage (d.c.) (U_C)	0 V	0 V
Nominal current (I_L)	0 A	0 A
Max. transmission capacity	3000 W	1500 W
D1 Lightning impulse current (10/350 µs) (I_{imp})	25 kA	40 kA
C2 Nominal discharge current (8/20 µs) (I_n)	50 kA	80 kA
Frequency range	380-512 MHz	690 MHz-2.7 GHz
Connection	7/16 socket / 7/16 plug	7/16 socket / 7/16 plug

Accessories for DEHNgate – SPDs for Coaxial Connection

Mounting Set DEHNpatch and DEHNgate



DIN rail mounting set for DEHNpatch and DEHNgate. For individual installation of the arresters.

Type	MS EB DPA DGA
Part No.	**929 200**
Material (earthing clip)	**St/gal Zn**
Material (flat receptable)	**CuZn / Sn**
Connection cross-section	0.5-1.5 mm²

Gas Discharge Tube for DEHNgate



Lightning current carrying replacement gas discharge tube for DEHNgate arresters. High quality with extremely low capacitance.

General technical data:	
Lightning impulse current carrying capability (10/350 µs)	5 kA

Type	GDT DGA 90	GDT DGA 230
Part No.	**929 497**	**929 498**

Type	GDT DGA 470
Part No.	**929 499**

Cable Lug with Earthing Conductor



Cable lug with highly flexible black copper earthing conductor for earthing DEHNgate arresters (Part Nos. 929 043, 929 044 or 929 045).

Type	EL 16 B17
Part No.	**929 096**
Colour	Black ●
Length	1000 mm

Earthing Block 4xF



Four-pole earthing block with F sockets for equipotential bonding of satellite cable shields or DGA GF TV lightning current arresters.

Type	EB 4 F
Part No.	**929 095**
D1 Lightning impulse current (10/350 µs)	10 kA

Fixing bracket for DEHNgate



Suitable for the installation of a DEHNgate, part no. 929 045, 929 146, 929 047, 929 148. Drill hole Ø11 mm.

Type	BW90 B11 B5.1 6.5 11 V2A
Part No.	**106 310**
Material	StSt

Fixing bracket for DEHNgate



Suitable for installing a DEHNgate arrester (Part Nos. 929 043 - 929 045), anti-rotation borehole (Ø16 mm).

Type	BW90 B16 B5.1 6.5 11 V2A
Part No.	**106 314**
Material	StSt

Fixing bracket for HF Arresters



With three boreholes for three different sizes of DEHNgate,
e.g. 1x 929 042 + 1x 929 057 + 1x (929 043, 929 044, 929 045 or 929 059).

Type	BW90 B17 21 16 V2A
Part No.	**106 329**
Material	StSt

Equipotential Bonding Busbar for industrial Use



Suitable for 3x DEHNgate (Part Nos. 929 045, 929 047, 929 146, 929 148).

Type	PAS I 6AP M10 V2A
Part No.	**472 209**
Material	StSt

Earthing Conductor, open / closed Cable Lugs



Cable lug 1x open (M8/M10) and 1x closed (M8), can be combined with Part Nos. 106 310, 106 314, 106 329 and 472 209.

Type	EL16 L1.05M 1KSO 8.10 1KSG 8
Part No.	**416 411**
Colour	Black ●
Length	1050 mm
Stock No.	6150-12-308-6934

Shield Connection Systems and Enclosures

Description	Type	Product	Part No.	Page
Shield connection on anchor bars				
▪ Shield terminals for earthing cable shields on anchor bars ▪ Different versions for different cable diameters ▪ Lightning current carrying system	**SAK ... AS V4A**		**308 403** – **308 408**	349
▪ Mounting rail for earthing and fixing shield terminals ▪ Can be cut to length according to requirements	**AS SAK 1000 V2A**		**308 421**	349
Shield connection on DIN rails				
▪ Shield terminals for earthing cable shields on DIN rails ▪ Different versions for different cable diameters ▪ Lightning current carrying system	**SAK 6.5 SN MS** **SAK 11 SN MS**		**919 010** **919 011**	349 349
▪ DIN rail mounted rail support ▪ Low-impedance connection of the shield terminals to the DIN rail via the busbar	**SH1 18X3 ST**		**919 012**	349
▪ Busbar for shield terminals ▪ Can be mounted onto busbar supports ▪ Can be cut to length according to requirements	**SN 18X3 CU 1000**		**919 016**	349
Shield connection for cables				
▪ Constant force spring for solderless shield connection for equipotential bonding ▪ Different versions for different cable diameters ▪ Lightning current carrying system	**SA KRF ... V2A**		**919 031** – **919 038**	350
Enclosure				
▪ Aluminium enclosure for DIN rail mounted devices ▪ IP 65 degree of protection ▪ Version for arresters for use in intrinsically safe measuring circuits Ex (i)	**ALGA 5** **ALGA 5X**	 	**906 055** **906 058**	350 350

Shield Connection on Anchor Bars

Shield connection system for anchor bars which is capable of carrying lightning currents. A slipping spring element compensates the yield of the cable materials used.

Shield Terminals



Shield terminals for earthing cable shields on anchor bars. Suitable for lightning equipotential bonding. Can be subsequently installed without interrupting the cable shield or requiring tools for installation.



General technical data:	
Lightning impulse current carrying capability (10/350 µs)	10 kA
Material	StSt
For mounting on	anchor bars

Type	SAK 10 AS V4A	SAK 14 AS V4A
Part No.	308 403	308 404
Clamping range (Rd)	5-10 mm	8-14 mm
Dimensions (W x L x H)	16 x 40 x 48 mm	19.5 x 40 x 50 mm

Type	SAK 18 AS V4A	SAK 21 AS V4A
Part No.	308 405	308 406
Clamping range (Rd)	13-18 mm	17-21 mm
Dimensions (W x L x H)	24 x 40 x 56 mm	29 x 40 x 59 mm

Type	SAK 26 AS V4A	SAK 33 AS V4A
Part No.	308 407	308 408
Clamping range (Rd)	19-26 mm	25-33 mm
Dimensions (W x L x H)	36.5 x 40 x 74 mm	45 x 40 x 82 mm

Anchor Bar



Mounting rail for earthing and fixing shield terminals.



Type	AS SAK 1000 V2A
Part No.	308 421
Material	StSt
Dimensions (W x L x H)	29 x 1000 x 15 mm

Insulated Busbar Support



Insulated busbar support for fixing AS SAK 1000 V2A anchor bars, with M4 threaded bushing.



Type	ST AS SAK K
Part No.	308 425
Material	plastic

Terminal



For connecting equipotential bonding conductors to AS SAK 1000 V2A anchor bars.



Type	AK 16 AS SAK MS
Part No.	308 411
Cross-sectional area, solid	16 mm²
For mounting on	anchor bars

Shield Connection on DIN Rails

DIN rail mounted shield connection system which is capable of carrying lightning currents, particularly suited for smaller cables. Slipping spring element compensates the yield of the cable materials.

Shield Terminals



Shield terminals for earthing cable shields on busbars (18x3). Suitable for lightning equipotential bonding. Can be subsequently installed without interrupting the cable shield or requiring tools for installation.



Type	SAK 6.5 SN MS	SAK 11 SN MS
Part No.	919 010	919 011
Lightning impulse current carrying capability (10/350 µs)	5 kA	5 kA
Clamping range (Rd)	1.5-6.5 mm	5-11 mm
Material	nickel-plated brass	nickel-plated brass
For mounting on	SN 18x3 CU 1000	SN 18x3 CU 1000
Dimensions (W x L x H)	10 x 25 x 40 mm	17 x 25 x 47 mm

Busbar



Mounting rail for shield terminals. Can be mounted onto busbar supports.



Type	SN 18X3 CU 1000
Part No.	919 016
Material	tin-plated copper
For mounting on	busbar supports
Dimensions (W x L x H)	18 x 1000 x 3 mm

Rail Support with One-Sided Contact

Rail support suitable for DIN rail mounting. Low-impedance connection of the shield terminals to the DIN rail via the busbar.



Type	SH1 18X3 ST
Part No.	919 012
Version	one-sided contact
Material	tin-plated steel
For mounting on	35 mm DIN rails acc. to EN 60715

Insulated Rail Support



Insulated rail support for DIN rail mounting or screw connection.



Type	SH 18X3 K
Part No.	919 014
Material	plastic
Colour	black ●
For mounting on	DIN rails or mounting plates

Terminal



Particularly suited for indirect shield earthing.



Type	AK 35 SN 18X3 GG
Part No.	919 015
Cross-sectional area	35 mm²
For mounting on	busbars

Shield Connection for Cables

Extremely space-saving shield connection system in the form of a constant force spring. A spring element compensates the yield of the cable materials used.

Constant Force Spring

Constant force springs allow solderless shield connections for equipotential bonding or lightning equipotential bonding. They can be installed subsequently without interrupting the cable shield or requiring tools for installation.



General technical data:	
Lightning impulse current carrying capability (10/350 µs)	10 kA
Colour	bare surface
For mounting on	cable shields

Type	SA KRF 10 V2A	SA KRF 15 V2A
Part No.	919 031	919 032
Clamping range (Rd)	4-10 mm	9-15 mm

Type	SA KRF 22 V2A	SA KRF 29 V2A
Part No.	919 033	919 034
Clamping range (Rd)	14-22 mm	18.5-29 mm

Type	SA KRF 37 V2A	SA KRF 50 V2A
Part No.	919 035	919 036
Clamping range (Rd)	23.5-37 mm	31-50 mm

Type	SA KRF 70 V2A	SA KRF 94 V2A
Part No.	919 037	919 038
Clamping range (Rd)	44-70 mm	58-94 mm

Self-bonding Rubber Tape

Roll with 9 m self-bonding rubber tape to be wrapped around constant force springs for permanent corrosion protection.



Type	SKB 19 9M SW
Part No.	919 030
Colour	black ●
Tape dimensions (W x L)	19 mm x 9 m

Enclosure and Protective Conductor Terminal

- High-quality accessories
- Suitable for DIN rail mounted arresters

Aluminium Enclosure

For the installation of DIN rail mounted devices. With two M20 brass glands.



Type	ALGA 5
Part No.	906 055
Degree of protection	IP 65
For mounting on	walls
Dimensions (W x H x D)	100 x 200 x 81 mm
Enclosure material	Al

Aluminium Enclosure for Ex(i) Surge Arresters

With four plastic glands M20 x 1.5, sealable, pressure compensating grommets.



Type	ALGA 5 X
Part No.	906 058
Degree of protection	IP 65
For mounting on	walls
Dimensions (W x H x D)	160 x 100 x 85 mm
Enclosure material	Al

Protective Conductor Terminal

For earthing DIN rails



Type	SLK 16
Part No.	910 099
Cross-sectional area, flexible	6-16 mm²
Cross-sectional area, solid	6-25 mm²
For mounting on	DIN rails acc. to EN 60715
Enclosure material	polyamide 6.6

Measuring and Test Devices

Description	Type	Product	Part No.	Page
Condition Monitoring System LifeCheck for BLITZDUCTORconnect				
▪ Condition monitoring of BLITZDUCTORconnect arresters with integrated LifeCheck ▪ Fast and easy installation and initial operation (no addressing of arresters) ▪ Remote signalling via floating remote signalling contact (nc)	**DRC IRCM**		**910 710**	352
Condition Monitoring System with RFID LifeCheck				
▪ Condition monitoring of BLITZDUCTOR XT arresters with RFID LifeCheck ▪ Monitoring of up to 10 BXT via a DRC MCM XT and networking of up to 15 DRC MCM XT ▪ Remote signalling via remote signalling contact (no/nc) or optional RS485 interface	**DRC MCM XT**		**910 695**	352
▪ Condition monitoring of BLITZDUCTOR XT arresters with RFID LifeCheck ▪ Monitoring of up to 10 BXT ▪ Remote signalling via remote signalling contact (nc)	**DRC SCM XT**		**910 696**	352
DEHNrecord Alert				
▪ Communication of the arrester status via Modbus TCP / RTU ▪ Monitoring of up to 4 arresters (e.g. Red/Line) via remote signalling contact and up to 150 BLITZDUCTOR XT arresters ▪ Integration of the remote signalling contacts of further functional modules in the monitoring system	**DRC AL MODBUS**		**910 694**	353
▪ Condition monitoring of BLITZDUCTOR XT arresters with RFID LifeCheck ▪ Monitoring of up to 10 BXT via a DRC MCM AL XT and networking of up to 15 DRC MCM AL XT ▪ Communication of the arrester status to a higher-level control system via DRC AL MODBUS	**DRC MCM AL XT**		**910 698**	353
RFID LifeCheck SPD Test Devices				
▪ Portable arrester test device for preventive maintenance of BLITZDUCTOR XT modules ▪ Possibility of addressing and reseting BLITZDUCTOR XT modules for monitoring via DRC MCM/SCM XT ▪ Interface and software for database-based testing and documentation	**DRC LC M3+**		**910 653**	353
▪ Portable arrester test device for preventive maintenance of BLITZDUCTOR XT modules ▪ Fast and easy testing of arresters with RFID LifeCheck ▪ Simple and intuitive operations	**DRC LC M1+**		**910 655**	353
SPD Test Device				
▪ Combined device for testing the sparkover voltage of surge arresters ▪ Preventive testing of Red/Line and Yellow/Line arresters ▪ Suitable for routine testing of surge protective devices	**PM 20**		**910 511**	354

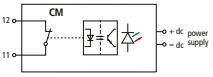
LifeCheck condition monitoring system

- Condition monitoring of BLITZDUCTORconnect and DEHNpatch arresters with integrated LifeCheck
- Quick and simple installation and initial operation (without addressing arresters)
- Remote signalling via floating remote signalling contact (break contact)

DRC IRCM

Condition monitoring unit DEHNrecord, set for DIN rail mounted devices with integrated visual transmitter/receiver and visual reverse BLITZDUCTORconnect arresters and DEHNpatch with LifeCheck. Visual arrester status indication via LED group display in combination with remote signalling contact (break contact).





Type	DRC IRCM
Part No.	**910 710**
Input voltage range (d.c.) (U_{IN})	6-35 V d.c.
Max. rated current consumption (I_{IN})	≤ 10 mA
Operating temperature range (T_U)	-30 °C ... +70 °C
Approvals	UL, CSA, ATEX, IECEx, CCC

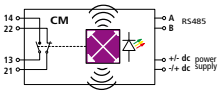
Condition Monitoring System with RFID LifeCheck Sensor

Maximum protection and availability of installations due to permanent condition monitoring of LifeCheck-equipped arresters.

DRC MCM XT

DIN rail mounted device with integrated RFID LifeCheck sensor for condition monitoring of max. 10 BLITZDUCTOR XT / XTU arresters with RFID LifeCheck technology. Visual operating state indication via three-coloured LED in conjunction with remote signalling contact (break or make contact). Up to 15 DRC MCM XT can be monitored via the integrated RS485 interface in a system with up to 150 BLITZDUCTOR XT/ XTU arresters. The free "Status Display and Service Console" software can be optionally used via an RS485 interface converter. The software allows PC-based remote indication of the condition of all monitored arresters. Download: www.dehn-international.com (Service section)



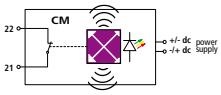


Type DRC ...	MCM XT
Part No.	**910 695**
Input voltage range (d.c.) (U_{IN})	18-48 V
Max. rated current consumption (I_{IN})	100 mA
RFID transmission frequency	125 kHz
Type of remote signalling contact	make (no) and break contact (nc)
Delivery includes	base part, monitoring module, quick guide and labelling system

DRC SCM XT

DIN rail mounted device with integrated RFID LifeCheck sensor for condition monitoring of up to ten BLITZDUCTOR XT / XTU arresters with RFID LifeCheck technology. Visual operating state indication via three-colour LED combined with remote signalling function (break contact).





Type DRC ...	SCM XT
Part No.	**910 696**
Input voltage range (d.c.) (U_{IN})	18-48 V
Max. rated current consumption (I_{IN})	100 mA
RFID transmission frequency	125 kHz
Type of remote signalling contact	break contact (nc)
Delivery includes	base part, monitoring module, quick guide and labelling system

Accessories for Condition Monitoring System with RFID LifeCheck Sensor

DIN Rail Mounted Power Supply Unit

Robust power supply in the DIN-rail-mounted enclosure with single-phase, wide-range input for operation in a wide variety of supply systems. The operating state indication on the front side signals the availability of the output voltage. Supply of stationary condition-monitoring devices from the DEHNrecord product range (DRC SCM XT / DRC MCM XT / DRC IRCM / DRC SD 2 1).



Type	PSU DC24 30W
Part No.	**910 499**
Input voltage range	AC 85-264 V; DC 120-373 V
Frequency	44-66 Hz; 0 Hz
Input current (I_e)	0.7 A at AC 110 V / 0.5 A at AC 230 V
Output nominal voltage (U_a)	DC 24 V (SELV)
Output current (I_a)	1.3 A at DC 24 V, max. 0.9 A at any installation position
Recommended backup fuse	circuit breaker 10 A, 16 A, characteristic B, C
Standards / regulations	EN 60950, EN 61204-3, UL 60950, UL 508, GL

USB Interface Converter of Type USB NANO 485

USB NANO 485 converts between USB and RS485 signals and is specifically designed for two-wire RS-485 buses. LEDs indicate the operating state (yellow), Rx (green) and Tx (red). Due to its compact dimensions, USB NANO 485 is ideally suited for use with notebooks, however, stationary use is also possible.



Type	USB NANO 485
Part No.	**910 486**
Version	with LED indication

Labelling System BA1-BA15

2x 165 adhesive labels for labelling DRC MCM XT monitoring devices with the bus address.



Type	BS BA1 BA15 BXT
Part No.	**920 398**
Colour	transparent

Partition

Allows devices of the BXT family for non-intrinsically safe circuits to be positioned directly next to intrinsically safe circuits (clearance ≥ 50 mm).
For DRC MCM XT and DRC SCM XT;
(1 pack = 2 pieces).



Type	TW DRC MCM EX
Part No.	**910 697**
Colour	blue
For mounting on	35 mm DIN rails acc. to EN 60715

DEHNrecord Alert

DEHNrecord Alert sends status reports on surge protective devices (SPDs) via Modbus TCP/RTU to an evaluation system. It enables transmission to devices like notebooks, tablets, smartphones and PCs or to the system control room.

DRC AL MODBUS

Compact DIN rail mounted device for the transmission of SPD status information, e.g. functional status, part number of SPD and part numbers of the replacement modules via Modbus RTU/TCP.



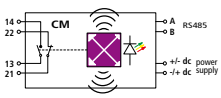


Type DRC ...	AL MODBUS
Part No.	**910 694**
Input voltage range (d.c.) (U_{IN})	11-28 V
Max. power	600 mW
Inputs	4 universally applicable remote signalling contacts and up to 150 BLITZDUCTOR XT via DRC MCM AL XT (910 698)
Communication	Modbus RTU/TCP

DRC MCM AL XT

DIN rail mounted device with integrated LifeCheck sensor for condition monitoring of max. 10 LifeCheck-equipped BLITZDUCTOR XT / XTU arresters. Transmission of the status of the bus address and BXT part numbers to the DEHNrecord Alert communication unit.





Type DRC ...	MCM AL XT
Part No.	**910 698**
Input voltage range (d.c.) (U_{IN})	18-48 V
Max. rated current consumption (I_{IN})	100 mA
RFID transmission frequency	125 kHz
Physical interface	RS 485
Delivery includes	base part, monitoring module, quick guide and labelling system

RFID LifeCheck SPD Test Devices

SPD test devices for preventive maintenance of arresters with integrated LifeCheck.

DRC LC M3+

Portable device with RFID LifeCheck sensor for flexible use. For the quick inspection of arresters with RFID LifeCheck. Equipped with visual and acoustic indication. Also equipped with USB port and PC database software for the PC-supported management of specimens and the documentation of test results. The DRC LC M3+ is equipped with a snap-on RFID LifeCheck sensor. The hand-held equipment also supports the parameterisation of the arresters for condition monitoring.



Type DRC LC ...	M3+
Part No.	**910 653**
Voltage supply (included in delivery)	lithium-ion battery
RFID transmission frequency	125 kHz
Measured value indication	beep and LCD
Delivery includes	hand-held device, BXT LifeCheck sensor, battery charger, USB cable, test module for reference, software CD, storage case
Dimensions of the storage case	340 x 275 x 83 mm

DRC LC M1+

Portable device with LifeCheck sensor for flexible use. For quickly and easily checking arresters with RFIDLifeCheck. Operation and charge indication and the result indication of the LifeCheck test are provided through LEDs. The DRC LC M1+ is equipped with an RFIDsnap-on LifeCheck sensor.



Type DRC LC ...	M1+
Part No.	**910 655**
Voltage supply (included in delivery)	lithium-polymer battery
RFID transmission frequency	125 kHz
Measured value indication	LED
Delivery includes	hand-held device, BXT LifeCheck sensor, power supply unit with country-specific adapters, USB cable, test module for reference, storage case
Dimensions of the storage case	275 x 230 x 83 mm

Accessories for RFID LifeCheck SPD Test Devices

RFID LifeCheck Sensor for DRC BXT

Snap-on RFID LifeCheck sensor and test module for use as spare part / extension for portable RFID LifeCheck test devices.



Type	LCS DRC BXT
Part No.	**910 652**
For testing	BLITZDUCTOR XT ML

SPD Test Device

For testing the sparkover voltage of surge arresters. The specimen is connected via the included test cables or special test adapters.

PM 20

Combined device for testing the spark-over voltage of surge arresters (with gas discharge tubes / varistors / Zener diodes). Storage bag and measuring accessories included.



Type	PM 20
Part No.	**910 511**
Nominal voltage (d.c.) (U_N)	8-12 V d.c.
Test parameter: Test voltage	max. 1200 V d.c.
Measured value indication	alphanumeric, eight-digit LCD
Accessories included in delivery	2 test leads (each 1 m long), 2 safety tapping test clips, 1 plug-in power supply unit (230 V a.c.), 1 storage bag
Dimensions of the storage bag	300 x 110 x 110 mm

Accessories for SPD Test Device

PA BXT Test Adapter

To be connected to PM 10 / PM 20. For inserting and testing protection modules.



Type	PA BXT
Part No.	**910 508**
For protection modules	BLITZDUCTOR XT / SP / CT

Lightning Equipotential Bonding

Isolating Spark Gaps and Components

You will find products for equipotential bonding under: **Lightning Protection / Earthing, page 198-225**

Isolating Spark Gaps	Page 356
Decoupling devices	Page 358
Voltage Limiting Devices	Page 359

Isolating Spark Gaps

Isolating Spark Gaps

For lightning equipotential bonding according to IEC 62305 as well as for use in IT installations according to IEC 60364-5-54.

TFS / KFSU

Isolating spark gaps with plastic sheath and two stainless steel connections (Rd 10 mm).



Typee	TFS	KFSU
Part No.		**923 021**
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes	yes
Lightning impulse current (10/350 µs) (I_{imp})	100 kA	–
Class (lightning current carrying capability)	H	–
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 4 kV	≤ 4 kV
Degree of protection protection	IP 65	IP 65

EXFS Coaxial Connection Box

Connection box for coaxial connection of the integrated Ex isolating spark gap for bridging insulating joints and flanges in cathodically protected pipe sections of pipelines.

Coaxial Connection Box with EXFS 100

Coaxial connection of isolating spark gaps with a low sparkover voltage for lightning equipotential bonding according to IEC 62305.



Type	NAK SN4631
Part No.	**999 990**
Isolating spark gap acc. to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	100 kA
Nominal discharge current (8/20 µs) (I_n)	100 kA
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 1.25 kV
Degree of protection protection	IP 67 (UV-resistant)

EXFS L / EXFS KU

For bridging insulating flanges and insulating glands in cathodically protected pipe sections (e.g., pipelines or LPG plants) in hazardous areas in case of surges and lightning currents.

EXFS L

Ex isolating spark gap for aboveground installation.



General technical data:	
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	50 kA
Class (lightning current carrying capability)	N
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 2.5 kV
Degree of protection	IP 54
ATEX approvals	DEKRA 11ATEX0146 X
Ex marking according to EN 60079-0 and EN 60079-15: gas	II 3 G Ex nC IIC T4 Gc
IECEx approvals	IECEx DEK 11.0063X
Ex marking according to EN 60079-0	Ex nC IIC T4 Gc

Type EXFS ...	L100	L200
Part No.	**923 060**	**923 061**
Cable length	100 mm	200 mm

Typee EXFS ...	L300
Part No.	**923 062**
Cable length	300 mm

EXFS KU

Ex isolating spark gap with connecting cables for aboveground and underground installation; with water-proof sheath; can be shortened to keep cables as short as possible.



Type EXFS ...	KU
Part No.	**923 019**
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	50 kA
Class (lightning current carrying capability)	N
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 2.5 kV
Degree of protection	IP 67
ATEX approvals	DEKRA 11ATEX0146 X
Ex marking according to EN 60079-0 and EN 60079-15: gas	II 3 G Ex nC IIC T4 Gc
IECEx approvals	IECEx DEK 11.0063X
Ex marking according to EN 60079-0	Ex nC IIC T4 Gc
Cable length	2x approx. 1500 mm

EXFS 100 / EXFS 100 KU

For bridging insulating flanges and insulating glands in cathodically protected pipe sections (e.g. pipelines or LPG plants) in hazardous areas in case of surges and lightning currents.

- Class (lighning current carrying capability) H (100 kA)
- Particularly low sparkover voltage
- ATEX and IECEx approvals for zone 1 and zone 21

EXFS 100

Isolating spark gap for use in hazardous areas with plastic sheath and M10 threaded screws.



Type EXFS ...	100
Part No.	**923 100**
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	100 kA
Class (lightning current carrying capability)	H
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 1.25 kV
Degree of protection	IP 67
Approvals	UL, Inmetro
ATEX approvals	DEKRA 11ATEX0178 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	II 2 G Ex db IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	II 2 D Ex tb IIIC T80 °C Db IP 66/67
IECEx approvals	IECEx KEM 09.0051X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex db IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80 °C Db IP 66/67
Inmetro approvals	TÜV 17.0698 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex db IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80 °C Db IP 66/67

EXFS 100 KU

Ex isolating spark gap with connecting cable for aboveground and underground installation; with water-proof sheath; can be shortened to keep cables as short as possible.



Type EXFS ...	100 KU
Part No.	**923 101**
Isolating spark gap according to EN 62561-3 / IEC 62561-3	yes
Lightning impulse current (10/350 µs) (I_{imp})	100 kA
Class (lightning current carrying capability)	H
Rated impulse sparkover voltage ($U_{r\,imp}$)	≤ 1.25 kV
Degree of protection	IP 67
Approvals	Inmetro
ATEX approvals	DEKRA 11ATEX0178 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	II 2 G Ex d IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	II 2 D Ex tb IIIC T80 °C Db IP 66/67
IECEx approvals	IECEx KEM 09.0051X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex d IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80°C Db IP 66/67
Inmetro approvals	TÜV 17.0698 X
Ex marking according to EN 60079-0 and EN 60079-1: gas	Ex db IIC T6 Gb
Ex marking according to EN 60079-0 and EN 60079-31: dust	Ex tb IIIC T80 °C Db IP 66/67
Cable length	2x approx. 2000 mm

Accessories for EXFS 100 / EXFS 100 KU

Angled connection brackets – IF 1 –

Angled connection bracket for EXFS ...; diameter corresponds to the bolt diameter of the flange joint; material: St/tZn.



Type	AB EXFS IF1 W 11	AB EXFS IF1 W 14
Part No.	**923 311**	**923 314**
Borehole diameter d1	11 mm	14 mm

Type	AB EXFS IF1 W 18	AB EXFS IF1 W 22
Part No.	**923 318**	**923 322**
Borehole diameter d1	18 mm	22 mm

Type	AB EXFS IF1 W 26	AB EXFS IF1 W 30
Part No.	**923 326**	**923 330**
Borehole diameter d1	26 mm	30 mm

Type	AB EXFS IF1 W 33	AB EXFS IF1 W 36
Part No.	**923 333**	**923 336**
Borehole diameter d1	33 mm	36 mm

Type	AB EXFS IF1 W 39	AB EXFS IF1 W 42
Part No.	**923 339**	**923 342**
Borehole diameter d1	39 mm	42 mm

Type	AB EXFS IF1 W 48	AB EXFS IF1 W 56
Part No.	**923 348**	**923 356**
Borehole diameter d1	48 mm	56 mm

Type		AB EXFS IF1 W 62
Part No.		**923 362**
Borehole diameter d1		62 mm

Flat connection brackets – IF 3 –

Flat connection bracket for EXFS ...; diameter corresponds to the bolt diameter of the flange joint; material: St/tZn.



Type	AB EXFS IF3 G 11	AB EXFS IF3 G 14
Part No.	**923 211**	**923 214**
Borehole diameter d1	11 mm	14 mm

Type	AB EXFS IF3 G 18	AB EXFS IF3 G 22
Part No.	**923 218**	**923 222**
Borehole diameter d1	18 mm	22 mm

Type	AB EXFS IF3 G 26	AB EXFS IF3 G 30
Part No.	**923 226**	**923 230**
Borehole diameter d1	26 mm	30 mm

Type	AB EXFS IF3 G 33	AB EXFS IF3 G 36
Part No.	**923 233**	**923 236**
Borehole diameter d1	33 mm	36 mm

Type	AB EXFS IF3 G 39	AB EXFS IF3 G 42
Part No.	**923 239**	**923 242**
Borehole diameter d1	39 mm	42 mm

EXFS 100: Connecting Cable, Cu, 25 mm²

Connecting cable for EXFS 100; two cable lugs (Ø10.5 mm) made of Cu/gal Sn, screw, nut and spring washer.



Type	AL EXFS L100 KS	AL EXFS L200 KS
Part No.	**923 025**	**923 035**
Cable length	100 mm	200 mm

Type		AL EXFS L300 KS
Part No.		**923 045**
Cable length		300 mm

Decoupling devices

Voltage-controlled smart decoupling device VCSD

Voltage-controlled decoupler for protecting widely distributed and highly networked systems (e.g. pipelines). With adjustable response threshold and integrated control and analysis interface.

VCSD 40 IP65

Voltage-controlled smart decoupling device with adjustable response threshold for flexible use in a wide range of systems.



Type	VCSD 40 IP65
Part No.	**923 401**
Transient discharge current (10/350 µs)	100 kA
Transient discharge current (8/20 µs)	100 kA
Temporary discharge current (16.7 Hz, 50 Hz, 60 Hz)	1.1 kA_{rms} (up to 200 ms) *1)
Temporary discharge current (16.7 Hz, 50 Hz, 60 Hz)	500 A_{rms} (up to 1 s)
Long-duration discharge current (16.7 Hz, 50 Hz, 60 Hz)	45 A_{rms} (permanently) *2)
Long-duration limiting voltage (a.c.$_{rms}$) (> 200 ms)	max. 50 V (adjustable from 3 to 50 V)
Degree of protection	IP 65
Dimensions	400 x 300 x 150 mm

*1) Derating depends on the "biasing current" (long-duration discharge current) and on the ambient temperature
*2) Derating depends on the ambient temperature; see operating and installation instructions

Accessories for Voltage-controlled smart decoupling device VCSD

DGP M – 100 kA N-PE Spark-Gap-Based Protection Module

N-PE spark-gap-based protection module for all devices of the modular DEHNgap M family.



Type	DGP M MOD 255
Part No.	**961 010**
Max. continuous operating voltage (a.c.) (U_C)	255 V

Decoupling device DASD

Powerful, capacitive decoupling device for protecting widely distributed and highly networked systems (e.g. pipelines). With integrated test socket and fail-safe functioning. Can also be used for outdoor installation.

DASD 45 LP 100 T



Type	DASD 45 LP 100 T
Part No.	**923 402**
Transient discharge current (10/350 µs)	75 kA
Transient discharge current (8/20 µs)	100 kA
Temporary discharge current (16.7 Hz, 50 Hz, 60 Hz)	5.0 kA_{rms} (up to 40 ms)
Temporary discharge current (16.7 Hz, 50 Hz, 60 Hz)	3.7 kA_{rms} (up to 200 ms)
Temporary discharge current (16.7 Hz, 50 Hz, 60 Hz)	2.0 kA_{rms} (up to 600 ms)
Long-duration discharge current (16.7 Hz, 50 Hz, 60 Hz)	45 A_{rms}
Transient limiting voltage (up to 1 ms)	≤ 1.35 kV
Long-duration limiting voltage (> 600 ms)	≤ 3 V

Accessories for Decoupling device DASD

Retaining Device for Decoupler

Retaining device for decoupler DASD 45 LP 100 T.



Type	HA SB DASD 45 D110
Part No.	**923 403** NEW
Material mounting support	Al
Dimensions mounting support (l x w x h)	353 x 35 x 30 mm
Fixing	[13x] 15 x 6 mm
Material of tensioning strap	**StSt**

Voltage Limiting Devices

Spark-gap-based voltage limiting device for use in electric railways.

SDS 1

Voltage limiting device for a power-frequency sparkover voltage ≤ 940 V.



Type SDS ...	1
Part No.	**923 110**
VLD Typee (EN 50122-1)	VLD-F
Power frequency sparkover voltage (U_{aw})	≤ 940 V
d.c. sparkover voltage (U_{ag})	700 V -14% ... +28%
Impulse sparkover voltage	≤ 1400 V (1 kV/µs)
Self-extinguishing capability	300 A / 65 V
Lightning current discharge capacity (10/350 µs) 0.1x / 0.5x / 1x	5 kA
Lightning current withstand capability (10/350 µs)	100 kA
Safe short-circuit due to welding of the electrodes in case of alternating currents	≥ 2.5 kA / 1000 V / 30 ms, ≥ 1.5 kA / 1000 V / 100 ms
Safe short-circuit due to welding of the electrodes in case of direct currents	≥ 750 A / 250 ms
Short-circuit withstand capability	25 kA_{rms} / 100 ms; 36 kA_{rms} / 75 ms
Long-term current	1 kA_{rms} for t ≤ 120 s
Leakage current (I_{lc})	< 1 µA for 100 V d.c.
Operating temperature range (T_U)	-40 °C ... +80 °C
To be mounted with mast adapter MA SDS M12 or SIEMENS No. 8WL6503-xx	
Approvals	EBA
DB drawing No.	4 Ebs 15.13.20 Sheet 2

SDS 2

Voltage limiting device for a d.c. sparkover voltage of 350 V.



Type SDS ...	2
Part No.	**923 117**
VLD Typee (EN 50122-1)	VLD-F
d.c. sparkover voltage (U_{ag})	350 V +/- 20 %
Impulse sparkover voltage	≤ 900 V (1 kV/µs)
Lightning current discharge capacity (10/350 µs) 0.1x / 0.5x / 1x	2 kA
Lightning current withstand capability (10/350 µs)	25 kA
Safe short-circuit due to welding of the electrodes in case of direct currents	≥ 600 A / 250 ms
Short-circuit withstand capability	25 kA_{rms} / 100 ms; 36 kA_{rms} / 75 ms
Long-term current	1 kA_{rms} for t ≤ 120 s
Leakage current (I_{lc})	< 1 µA for 100 V d.c.
Operating temperature range (T_U)	-40 °C ... +80 °C
To be mounted with mast adapter MA SDS M12 or SIEMENS No. 8WL6503-xx	

Accessories for Voltage Limiting Devices

Mast adapter for SDS voltage-limiting devices

For installation on the mast profile of overhead contact line masts with Fl 8-12 mm.



Type	MA SDS M12
Part No.	**723 199**
Lightning current carrying capability (10/350 µs)	25 kA
Short-circuit withstand capability	21 kA_{rms} / 30 ms
Long-term current	1 kA_{rms} at t ≤ 120 s
Leakage current (I_{lc})	< 1 µA at 100 V d.c.
Dimensions of the threaded pin	M12
Material	Brass
Degree of protection of the inner enclosure	IP 67

SDS 3

Voltage limiting device for a d.c. sparkover voltage of 550 V.



Type SDS ...	3
Part No.	**923 116**
VLD Typee (EN 50122-1)	VLD-F
d.c. sparkover voltage (U_{ag})	550 V +/- 20 %
Impulse sparkover voltage	≤ 1000 V (1 kV/µs)
Lightning current discharge capacity (10/350 µs) 0.1x / 0.5x / 1x	2.5 kA
Lightning current withstand capability (10/350 µs)	25 kA
Short-circuit withstand capability	25 kA_{rms} / 100 ms
Operating temperature range (T_U)	-40 °C ... +80 °C
To be mounted with mast adapter MA SDS M12 or SIEMENS Nr. 8WL6503-xx	

SDS 4

Voltage limiting device for a d.c. sparkover voltage of 230 V.



Type SDS ...	4
Part No.	**923 118**
VLD Typee (EN 50122-1)	VLD-F
d.c. sparkover voltage (U_{ag})	230 V +/- 20%
Impulse sparkover voltage	≤ 650 V (1 kV/µs)
Lightning current discharge capacity (10/350 µs) 0.1x / 0.5x / 1x	2.5 kA
Lightning current withstand capability (10/350 µs)	25 kA
Impulse current discharge capacity (8/20 µs) 0.1x / 0.5x / 1x	20 kA
Safe short-circuit due to welding of the electrodes in case of direct currents	≥ 600 A / 250 ms
Short-circuit withstand capability	25 kA_{rms} / 100 ms; 36 kA_{rms} / 75 ms
Long-term current	1 kA_{rms} for t ≤ 120 s
Leakage current (I_{lc})	< 1 µA for 100 V d.c.
Operating temperature range (T_U)	-40 °C ... +80 °C
To be mounted with mast adapter MA SDS M12 or SIEMENS No. 8WL6503-xx	

SDS 5

Voltage limiting device for a d.c. sparkover voltage of 120 V.



Type SDS ...	5
Part No.	**923 119**
VLD Typee (EN 50122-1)	VLD-F
d.c. sparkover voltage (U_{ag})	120 V +/- 20 %
Impulse sparkover voltage	≤ 600 V (1 kV/µs)
Lightning current discharge capacity (10/350 µs) 0.1x / 0.5x / 1x	2 kA
Lightning current withstand capability (10/350 µs)	25 kA
Impulse current discharge capacity (8/20 µs) 0.1x / 0.5x / 1x	20 kA
Safe short-circuit due to welding of the electrodes in case of direct currents	≥ 600 A / 250 ms
Short-circuit withstand capability	25 kA_{rms} / 100 ms; 36 kA_{rms} / 75 ms
Long-term current	1 kA_{rms} for t ≤ 120 s
Leakage current (I_{lc})	< 1 µA for 100 V d.c.
Operating temperature range (T_U)	-40 °C ... +80 °C
To be mounted with mast adapter MA SDS M12 or SIEMENS No. 8WL6503-xx	

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Part No. Index

Part No.	GTIN*	PG	Weight	PU SU	Page
100 100	019119	01 01 01 01	1.64 kg	10 pc(s)	77
100 150	019140	01 01 01 01	2.44 kg	10 pc(s)	77
101 000	094505	01 01 01 01	212 g	20 pc(s)	77/92
101 001	105539	01 07 01 01	600 g	1 pc(s)	102
101 007	128705	01 01 01 01	700 g	20 pc(s)	77
101 009	128699	01 01 01 01	600 g	20 pc(s)	77/92
101 010	138698	01 01 01 01	208 g	10 pc(s)	93
101 110	138704	01 01 01 01	305 g	1 pc(s)	93
102 002	105126	01 01 01 01	17.02 kg	54 pc(s)	86
102 003	105133	01 01 01 01	8.52 kg	120 pc(s)	87
102 010	057814	01 01 01 01	17.62 kg	54 pc(s)	83/86
102 010	057814	01 01 01 01	17.62 kg	54 pc(s)	120/133
102 010	057814	01 01 01 01	17.62 kg	54 pc(s)	137/150
102 010	057814	01 01 01 01	17.62 kg	54 pc(s)	153
102 012	105089	01 01 01 01	17.10 kg	54 pc(s)	83/86
102 019	111059	01 01 01 01	30 g	54 pc(s)	87
102 050	045996	01 01 01 01	217 g	1 pc(s)	87/120
102 050	045996	01 01 01 01	217 g	1 pc(s)	133/137
102 050	045996	01 01 01 01	217 g	1 pc(s)	150/154
102 060	094987	01 01 01 01	140 g	1 pc(s)	87/119
102 060	094987	01 01 01 01	140 g	1 pc(s)	136/153
102 075	094215	01 01 01 01	8.46 kg	120 pc(s)	87/119
102 075	094215	01 01 01 01	8.46 kg	120 pc(s)	136/152
102 340	105119	01 01 01 01	17.82 kg	54 pc(s)	86
103 013	129818	01 01 01 02	228 kg	1 pc(s)	90
103 016	129825	01 01 01 02	230 kg	1 pc(s)	90
103 019	129832	01 01 01 02	310 kg	1 pc(s)	90
103 022	129849	01 01 01 02	452 kg	1 pc(s)	90
103 025	129856	01 01 01 02	550 kg	1 pc(s)	90
103 030	129917	01 01 01 02	2620 kg	1 pc(s)	91
103 031	129924	01 01 01 02	4900 kg	1 pc(s)	91
103 040	129894	01 01 01 02	22.90 kg	1 pc(s)	91
103 041	129900	01 01 01 02	38 kg	1 pc(s)	91
103 121	112711	01 01 01 02	33 kg	1 pc(s)	90
103 122	112728	01 01 01 02	33.20 kg	1 pc(s)	90
103 123	112735	01 01 01 02	37.60 kg	1 pc(s)	90
103 124	112742	01 01 01 02	37.60 kg	1 pc(s)	90
103 125	112759	01 01 01 02	42.20 kg	1 pc(s)	90
103 126	112841	01 01 01 02	42.40 kg	1 pc(s)	90
103 210	066311	01 01 01 01	480 g	10 pc(s)	78
103 211	078529	01 01 01 01	480 g	10 pc(s)	78
103 220	066328	01 01 01 01	760 g	10 pc(s)	78
103 221	078536	01 01 01 01	760 g	10 pc(s)	78
103 230	066335	01 01 01 01	1.02 kg	10 pc(s)	78
103 231	078543	01 01 01 01	1.02 kg	10 pc(s)	78
103 240	066342	01 01 01 01	1.30 kg	10 pc(s)	78
103 241	081857	01 01 01 01	1.30 kg	10 pc(s)	78
103 250	093485	01 01 01 01	1.52 kg	10 pc(s)	78
103 251	093515	01 01 01 01	1.52 kg	10 pc(s)	78
103 260	093492	01 01 01 01	1.85 kg	10 pc(s)	78
103 261	093522	01 01 01 01	1.73 kg	10 pc(s)	78
103 280	093508	01 01 01 01	2.40 kg	10 pc(s)	78
103 410	105775	01 01 01 01	360 g	10 pc(s)	78/92
103 417	128682	01 01 01 01	1.20 kg	10 pc(s)	78
103 419	128651	01 01 01 01	1.10 kg	10 pc(s)	78
103 420	105782	01 01 01 01	500 g	10 pc(s)	78
103 429	128668	01 01 01 01	1.60 kg	10 pc(s)	78
103 430	105799	01 01 01 01	570 g	10 pc(s)	78
103 439	128675	01 01 01 01	2.05 kg	10 pc(s)	78
103 440	105805	01 01 01 01	800 g	10 pc(s)	78
103 449	128798	01 01 01 01	2.57 kg	10 pc(s)	78
103 450	105812	01 01 01 01	900 g	10 pc(s)	78
103 460	105829	01 01 01 01	1.10 kg	10 pc(s)	78
103 480	105836	01 01 01 01	1.30 kg	10 pc(s)	78
104 150	028487	01 01 01 01	820 g	10 pc(s)	77
104 200	056343	01 01 01 01	1.08 kg	10 pc(s)	77
104 250	056350	01 01 01 01	1.40 kg	10 pc(s)	77
104 300	056367	01 01 01 01	1.68 kg	10 pc(s)	77
104 600	076556	01 01 01 01	3.32 kg/Stk	1 pc(s)	77
104 903	030497	01 02 01 01	1.60 kg	1 pc(s)	47
104 905	030503	01 02 01 01	2.38 kg	10 pc(s)	47
104 906	082854	01 02 01 01	3.20 kg	1 pc(s)	47
105 071	101456	01 01 01 05	694 g	1 pc(s)	103/105
105 079	100183	01 01 01 05	96 g	1 pc(s)	103/105
105 140	112650	01 01 01 05	653 g	1 pc(s)	89/123
105 160	113022	01 01 01 05	506 g	1 pc(s)	89/123
105 161	118324	01 01 01 05	667 g	1 pc(s)	122
105 162	146433	01 01 01 05	600 g	1 pc(s)	89/106
105 162	146433	01 01 01 05	600 g	1 pc(s)	123
105 163	248281	01 01 01 05	586 g	1 pc(s)	89
105 170	151192	01 01 01 01	4.17 kg	1 pc(s)	84
105 171	151215	01 01 01 01	5.60 kg	1 pc(s)	84
105 172	151239	01 01 01 01	7.20 kg	1 pc(s)	84
105 173	151253	01 01 01 01	8.60 kg	1 pc(s)	84
105 174	151277	01 01 01 01	10.14 kg	1 pc(s)	84
105 175	151208	01 01 01 01	4.40 kg	1 pc(s)	84
105 176	151222	01 01 01 01	6 kg	1 pc(s)	84
105 177	151246	01 01 01 01	7.45 kg	1 pc(s)	84
105 178	151260	01 01 01 01	9 kg	1 pc(s)	84
105 179	151284	01 01 01 01	10.40 kg	1 pc(s)	84
105 185	481411	01 01 01 01	3.80 kg	1 pc(s)	82
105 186	481435	01 01 01 01	5.89 kg	1 pc(s)	82
105 188	481442	01 01 01 01	8.88 kg	1 pc(s)	82
105 190	152045	01 01 01 01	9.20 kg	1 pc(s)	84
105 191	152052	01 01 01 01	12.60 kg	1 pc(s)	84
105 192	152069	01 01 01 01	16.20 kg	1 pc(s)	84
105 193	152076	01 01 01 01	19.40 kg	1 pc(s)	84
105 194	152083	01 01 01 01	22.40 kg	1 pc(s)	84
105 195	152090	01 01 01 01	10 kg	1 pc(s)	84
105 196	152106	01 01 01 01	14.30 kg	1 pc(s)	84
105 197	152113	01 01 01 01	16.80 kg	1 pc(s)	84
105 198	152120	01 01 01 01	20 kg	1 pc(s)	84
105 199	152137	01 01 01 01	23.60 kg	1 pc(s)	84
105 200	095908	01 01 01 07	9.60 kg	1 pc(s)	85/107
105 201	095915	01 01 01 07	17.23 kg	1 pc(s)	107/133
105 201	095915	01 01 01 07	17.23 kg	1 pc(s)	149
105 229	280625	01 07 01 01	89 g	10 pc(s)	130/147
105 240	135116	01 07 01 02	7.23 kg	1 pc(s)	123
105 241	361225	01 07 01 01	4.66 kg	1 pc(s)	87/124
105 243	506855	01 50 50 01	5.62 kg	1 pc(s)	86
105 244	503069	01 01 01 07	9.50 kg	1 pc(s)	86
105 245	135383	01 07 01 02	1.16 kg	1 pc(s)	123
105 246	135390	01 07 01 02	1.14 kg	1 pc(s)	123
105 281	260962	01 07 01 01	4 kg	1 pc(s)	131
105 300	098534	01 01 01 05	5.20 kg	1 pc(s)	104
105 301	098541	01 01 01 05	7.23 kg	1 pc(s)	104
105 302	100077	01 01 01 05	10.20 kg	1 pc(s)	104
105 306	106024	01 01 01 05	5.23 kg	1 pc(s)	105
105 314	157781	01 07 01 01	10.10 kg	1 pc(s)	131
105 315	157804	01 07 01 01	12 kg	1 pc(s)	131
105 316	157798	01 07 01 01	15.60 kg	1 pc(s)	131
105 317	157811	01 07 01 01	17.12 kg	1 pc(s)	131
105 320	152373	01 07 01 03	10.60 kg	1 pc(s)	148
105 321	152397	01 07 01 03	12.20 kg	1 pc(s)	148
105 322	152380	01 07 01 03	15.80 kg	1 pc(s)	148
105 323	152403	01 07 01 03	16.30 kg	1 pc(s)	148
105 325	157828	01 07 01 01	5.42 kg	1 pc(s)	131
105 326	157842	01 07 01 01	5.82 kg	1 pc(s)	132
105 327	157835	01 07 01 01	8.15 kg	1 pc(s)	131
105 328	157859	01 07 01 01	8.34 kg	1 pc(s)	132
105 330	152496	01 07 01 01	5.60 kg	1 pc(s)	131
105 331	152502	01 07 01 01	6.12 kg	1 pc(s)	131
105 332	152519	01 07 01 01	8.25 kg	1 pc(s)	131
105 333	152526	01 07 01 01	8.51 kg	1 pc(s)	131
105 336	157866	01 07 01 01	9.90 kg	1 pc(s)	131
105 337	157880	01 07 01 01	11.64 kg	1 pc(s)	132
105 338	157873	01 07 01 01	15.13 kg	1 pc(s)	131

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105 339	157897	01 07 01 01	16.90 kg	1	pc(s)	132
105 340	098794	01 01 01 05	618 g	1	pc(s)	105/134
105 340	098794	01 01 01 05	618 g	1	pc(s)	151
105 341	098800	01 01 01 05	607 g	1	pc(s)	105/134
105 341	098800	01 01 01 05	607 g	1	pc(s)	151
105 342	111141	01 01 01 05	514 g	1	pc(s)	89/105
105 342	111141	01 01 01 05	514 g	1	pc(s)	122/134
105 342	111141	01 01 01 05	514 g	1	pc(s)	151
105 343	118515	01 01 01 05	3.60 kg	1	pc(s)	89/105
105 343	118515	01 01 01 05	3.60 kg	1	pc(s)	123/134
105 343	118515	01 01 01 05	3.60 kg	1	pc(s)	151
105 344	147300	01 01 01 05	1.52 kg	1	pc(s)	89/105
105 344	147300	01 01 01 05	1.52 kg	1	pc(s)	123/134
105 344	147300	01 01 01 05	1.52 kg	1	pc(s)	151
105 345	110489	01 01 01 05	3.60 kg	1	pc(s)	128/145
105 347	278554	01 01 01 05	2.42 kg	1	pc(s)	89/105
105 347	278554	01 01 01 05	2.42 kg	1	pc(s)	123/134
105 347	278554	01 01 01 05	2.42 kg	1	pc(s)	151
105 348	287013	01 01 01 05	540 g	1	pc(s)	89/105
105 348	287013	01 01 01 05	540 g	1	pc(s)	122/134
105 348	287013	01 01 01 05	540 g	1	pc(s)	151
105 349	288614	01 01 01 05	5.80 kg	1	pc(s)	89/105
105 349	288614	01 01 01 05	5.80 kg	1	pc(s)	123/134
105 349	288614	01 01 01 05	5.80 kg	1	pc(s)	151
105 351	238916	01 01 01 07	11.50 kg	1	pc(s)	85/133
105 351	238916	01 01 01 07	11.50 kg	1	pc(s)	149
105 352	502727	01 01 01 05	5.36 kg	1	pc(s)	90/135
105 352	502727	01 01 01 05	5.36 kg	1	pc(s)	145
105 354	098725	01 01 01 05	617 g	5	pc(s)	89/106
105 354	098725	01 01 01 05	617 g	5	pc(s)	123/134
105 354	098725	01 01 01 05	617 g	5	pc(s)	151
105 355	098732	01 01 01 05	690 g	1	pc(s)	106/134
105 355	098732	01 01 01 05	690 g	1	pc(s)	151
105 356	098749	01 01 01 05	562 g	5	pc(s)	106/135
105 356	098749	01 01 01 05	562 g	5	pc(s)	151
105 357	527829	01 01 01 07	8.01 kg	1	pc(s)	85/133
105 357	527829	01 01 01 07	8.01 kg	1	pc(s)	149
105 360	099777	01 01 01 05	358 g	1	pc(s)	106/134
105 360	099777	01 01 01 05	358 g	1	pc(s)	150
105 361	102033	01 01 01 05	385 g	1	pc(s)	106/134
105 361	102033	01 01 01 05	385 g	1	pc(s)	150
105 362	110496	01 01 01 05	467 g	1	pc(s)	106/134
105 362	110496	01 01 01 05	467 g	1	pc(s)	150
105 363	106031	01 01 01 05	8.87 kg	1	pc(s)	135/152
105 364	106048	01 01 01 05	10.85 kg	1	pc(s)	135/152
105 365	106055	01 01 01 05	14.63 kg	1	pc(s)	135/152
105 374	493308	01 05 01 02	263 g	1	pc(s)	82
105 375	493315	01 05 01 02	334 g	1	pc(s)	82
105 376	115545	01 01 01 05	660 g	1	pc(s)	106/135
105 376	115545	01 01 01 05	660 g	1	pc(s)	151
105 392	157903	01 07 01 03	10.20 kg	1	pc(s)	148
105 394	157910	01 07 01 03	15.10 kg	1	pc(s)	148
105 395	157934	01 07 01 03	17.12 kg	1	pc(s)	148
105 400	094383	01 01 01 01	13.40 kg	1	pc(s)	79
105 440	099692	01 01 01 05	7.64 kg	1	pc(s)	104
105 450	094413	01 01 01 01	13.80 kg	1	pc(s)	79
105 455	099715	01 01 01 05	11.45 kg	1	pc(s)	104
105 461	381520	01 07 01 01	821 g	1	pc(s)	136
105 462	381537	01 07 01 03	830 g	1	pc(s)	153
105 466	484900	01 07 01 04	667 g	1	pc(s)	119
105 467	381599	01 07 01 03	4.10 kg	1	pc(s)	153
105 468	381582	01 07 01 03	3.65 kg	1	pc(s)	153
105 469	381575	01 07 01 01	3.64 kg	1	pc(s)	137
105 470	100138	01 01 01 05	14.65 kg	1	pc(s)	104
105 500	094420	01 01 01 01	15 kg	1	pc(s)	79
105 513	270282	01 07 01 03	5 kg	1	pc(s)	148
105 515	271821	01 07 01 03	7.84 kg	1	pc(s)	148
105 525	241985	01 01 01 01	3.40 kg	1	pc(s)	79
105 530	242029	01 01 01 01	3.80 kg	1	pc(s)	79
105 531	535893	01 01 01 01	11 kg	1	pc(s)	79
105 535	242043	01 01 01 01	4.10 kg	1	pc(s)	79
105 536	535909	01 01 01 01	11.80 kg	1	pc(s)	79
105 543	271845	01 07 01 03	6.24 kg	1	pc(s)	148
105 545	271876	01 07 01 03	8.72 kg	1	pc(s)	148
105 550	094437	01 01 01 01	15.20 kg	1	pc(s)	79
105 563	271937	01 07 01 03	5.54 kg	1	pc(s)	148
105 565	271944	01 07 01 03	7.92 kg	1	pc(s)	148
105 573	271975	01 07 01 03	6.40 kg	1	pc(s)	148
105 575	272026	01 07 01 03	8.74 kg	1	pc(s)	148
105 600	094444	01 01 01 01	29.40 kg	1	pc(s)	80
105 601	142336	01 01 01 01	6 kg	1	pc(s)	107/133
105 601	142336	01 01 01 01	6 kg	1	pc(s)	150
105 650	094451	01 01 01 01	30 kg	1	pc(s)	80
105 672	494473	01 07 01 04	2.50 kg	1	pc(s)	116
105 673	494497	01 07 01 04	2.77 kg	1	pc(s)	116
105 674	494503	01 07 01 04	3.50 kg	1	pc(s)	116
105 675	494510	01 07 01 04	3.77 kg	1	pc(s)	116
105 677	500044	01 07 01 04	3.30 kg	1	pc(s)	116
105 678	500051	01 07 01 04	3.57 kg	1	pc(s)	116
105 688	499775	01 07 01 04	4.74 kg	1	pc(s)	116
105 700	094468	01 01 01 01	31.20 kg	1	pc(s)	80
105 710	500969	01 01 01 01	11.58 kg	1	pc(s)	83
105 711	500976	01 01 01 01	13.32 kg	1	pc(s)	83
105 712	500983	01 01 01 01	15.74 kg	1	pc(s)	83
105 713	501041	01 01 01 01	25.82 kg	1	pc(s)	83
105 714	501058	01 01 01 01	19.38 kg	1	pc(s)	83
105 715	501065	01 01 01 01	29.88 kg	1	pc(s)	83
105 716	501072	01 01 01 01	28.81 kg	1	pc(s)	83
105 750	094475	01 01 01 01	31.40 kg	1	pc(s)	80
105 800	094338	01 01 01 01	32.60 kg	1	pc(s)	80
105 850	094482	01 01 01 01	32.80 kg	1	pc(s)	80
105 900	240766	01 01 01 01	33.29 kg	1	pc(s)	80
105 910	256941	01 01 01 01	53 kg	1	pc(s)	80
105 911	256958	01 01 01 01	54 kg	1	pc(s)	80
105 922	240520	01 01 01 01	97.31 kg	1	pc(s)	81
105 923	242081	01 01 01 01	98.31 kg	1	pc(s)	81
105 924	242104	01 01 01 01	103.31 kg	1	pc(s)	81
106 090	100190	01 01 01 06	470 g	1	pc(s)	98
106 100	092907	01 01 01 06	545 g	1	pc(s)	98
106 105	100206	01 01 01 06	658 g	1	pc(s)	98
106 115	100213	01 01 01 06	488 g	1	pc(s)	98
106 120	092945	01 01 01 06	552 g	1	pc(s)	98
106 123	100220	01 01 01 06	686 g	1	pc(s)	98
106 125	099517	01 01 01 06	1.15 kg	10	pc(s)	99
106 126	093324	01 01 01 06	82 g	20	pc(s)	99
106 127	093317	01 01 01 06	228 g	20	pc(s)	99
106 128	123731	01 01 01 06	131 g	20	pc(s)	99
106 129	123748	01 01 01 06	135 g	20	pc(s)	99
106 150	092914	01 01 01 06	340 g	1	pc(s)	99
106 160	092938	01 01 01 06	286 g	1	pc(s)	99
106 165	100237	01 01 01 06	242 g	1	pc(s)	100
106 170	097285	01 01 01 06	310 g	1	pc(s)	100
106 175	100244	01 01 01 06	448 g	1	pc(s)	100
106 178	100251	01 01 01 06	260 g	1	pc(s)	100
106 180	097292	01 01 01 06	326 g	1	pc(s)	100
106 185	100268	01 01 01 06	465 g	1	pc(s)	100
106 207	127623	01 01 01 06	493 g	10	pc(s)	102
106 210	127630	01 01 01 06	625 g	10	pc(s)	102
106 217	128811	01 01 01 06	280 g	10	pc(s)	102
106 220	128828	01 01 01 06	410 g	10	pc(s)	102
106 225	100299	01 01 01 06	684 g	1	pc(s)	98
106 226	098930	01 01 01 06	722 g	1	pc(s)	98
106 228	100305	01 01 01 06	878 g	1	pc(s)	98
106 245	100336	01 01 01 06	561 g	1	pc(s)	99
106 246	098954	01 01 01 06	608 g	1	pc(s)	99
106 248	100343	01 01 01 06	762 g	1	pc(s)	99
106 301	096806	01 01 01 06	50 g	20	pc(s)	100
106 309	129276	01 01 01 06	100 g	20	pc(s)	100
106 310	096813	01 01 01 06	100 g	20	pc(s)	100/347
106 311	096820	01 01 01 06	150 g	20	pc(s)	100
106 312	098756	01 01 01 05	327 g	5	pc(s)	101

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106 312	098756	01 01 01 05	327 g	5	pc(s)	107
106 314	136304	04 02 08 50	100 g	1	pc(s)	347
106 315	096943	01 01 01 06	98 g	20	pc(s)	100
106 316	096844	01 01 01 06	244 g	1	pc(s)	100
106 319	124820	01 01 01 06	271 g	1	pc(s)	102
106 320	149434	01 01 01 06	48 g	20	pc(s)	101
106 321	096851	01 01 01 06	121 g	10	pc(s)	101
106 322	097308	01 01 01 06	146 g	10	pc(s)	101
106 323	097315	01 01 01 06	110 g	10	pc(s)	101/121
106 323	097315	01 01 01 06	110 g	10	pc(s)	138/140
106 323	097315	01 01 01 06	110 g	10	pc(s)	154/156
106 324	099074	01 01 01 06	48 g	20	pc(s)	101/121
106 324	099074	01 01 01 06	48 g	20	pc(s)	138/140
106 324	099074	01 01 01 06	48 g	20	pc(s)	154/156
106 325	096929	01 01 01 06	222 g	10	pc(s)	101
106 326	096936	01 01 01 06	337 g	1	pc(s)	101
106 328	099098	01 01 01 05	547 g	1	pc(s)	107
106 329	107182	04 02 08 50	143 g	1	pc(s)	347
106 331	100367	01 01 01 05	715 g	1	pc(s)	107
106 340	096868	01 01 01 06	104 g	20	pc(s)	102
106 341	096875	01 01 01 06	104 g	20	pc(s)	102
106 342	096882	01 01 01 06	104 g	20	pc(s)	102
106 352	096905	01 01 01 06	375 g	10	pc(s)	100/106
106 353	096912	01 01 01 06	466 g	1	pc(s)	101/106
106 812	104907	01 07 01 01	435 g	1	pc(s)	120
106 814	381483	01 07 01 03	673 g	1	pc(s)	153
106 815	381506	01 07 01 01	538 g	1	pc(s)	119/137
106 852	119307	01 07 01 02	229 g	1	pc(s)	120
107 390	478466	01 01 01 07	7.22 kg	1	pc(s)	85/132
107 390	478466	01 01 01 07	7.22 kg	1	pc(s)	149
107 391	478473	01 01 01 07	15.60 kg	1	pc(s)	85/132
107 391	478473	01 01 01 07	15.60 kg	1	pc(s)	149
107 396	478442	01 07 01 01	934 g	1	pc(s)	85/133
107 396	478442	01 07 01 01	934 g	1	pc(s)	150
107 399	478411	01 06 01 01	644 g	1	pc(s)	85/86
107 399	478411	01 06 01 01	644 g	1	pc(s)	133/150
107 490	478480	01 01 01 07	9.85 kg	1	pc(s)	85/132
107 490	478480	01 01 01 07	9.85 kg	1	pc(s)	149
107 491	478497	01 01 01 07	17.57 kg	1	pc(s)	85/132
107 491	478497	01 01 01 07	17.57 kg	1	pc(s)	149
107 496	478459	01 07 01 01	1.25 kg	1	pc(s)	85/133
107 496	478459	01 07 01 01	1.25 kg	1	pc(s)	150
108 009	133686	01 01 01 03	288 g	1	pc(s)	93
110 000	021440	01 01 01 03	20 g	50	pc(s)	93
110 017	021457	01 01 01 03	28 g	10	pc(s)	93
117 165	498242	01 08 03 01	10 g	50	pc(s)	39
117 166	498259	01 08 03 01	10 g	50	pc(s)	39
117 185	498174	01 08 03 01	10 g	50	pc(s)	39
117 186	498181	01 08 03 01	13 g	50	pc(s)	39
117 430	483989	01 08 01 01	795 g	10	pc(s)	94
117 431	483996	01 08 01 01	950 g	10	pc(s)	94
117 432	484009	01 08 01 01	1.57 kg	10	pc(s)	94
117 433	484016	01 08 01 01	2.35 kg	10	pc(s)	94
117 434	484023	01 08 01 01	3.12 kg	10	pc(s)	94
117 435	539341	01 08 01 01	4.68 kg	5	pc(s)	94
117 439	484078	01 08 01 01	345 g	20	pc(s)	94
117 440	484085	01 08 01 01	410 g	20	pc(s)	94
117 441	484092	01 08 01 01	680 g	20	pc(s)	94
117 442	483927	01 08 01 01	160 g	25	pc(s)	94
117 443	483934	01 08 01 01	255 g	10	pc(s)	94
117 444	483941	01 08 01 01	490 g	10	pc(s)	94
117 445	481190	01 08 01 01	730 g	10	pc(s)	94
117 446	481206	01 08 01 01	965 g	10	pc(s)	94
117 447	483958	01 08 01 01	70 g	25	pc(s)	94
117 448	483965	01 08 01 01	110 g	20	pc(s)	94
117 449	483972	01 08 01 01	215 g	20	pc(s)	94
117 465	520110	01 08 03 01	360 g	4	pc(s)	94
117 466	357471	01 08 03 01	118 g	4	pc(s)	94
117 471	536777	01 08 03 01	183 g	1	pc(s)	95
117 473	536227	01 08 03 01	186 g	4	pc(s)	94
118 010	298798	01 08 03 01	10 g	100	pc(s)	44
118 011	298804	01 08 03 01	10 g	100	pc(s)	44
118 024	505238 [1)]	01 08 03 01	7 g	100	pc(s)	44
118 025	505245 [1)]	01 08 03 01	7 g	100	pc(s)	44
118 049	496842	01 08 03 01	75 g	50	pc(s)	44
118 059	298965	01 08 03 01	115 g	50	pc(s)	44
118 071	357426	01 08 03 01	20 g	50	pc(s)	44
118 073	357433	01 08 03 01	20 g	50	pc(s)	44
118 075	497047	01 08 03 01	4 g	100	pc(s)	45
118 076	497054	01 08 03 01	4 g	100	pc(s)	45
118 077	476219	01 08 03 01	50 g	50	pc(s)	44
118 083	476240	01 08 03 01	60 g	50	pc(s)	44
118 085	299009	01 08 03 01	15 g	100	pc(s)	45
118 086	497030	01 08 03 01	14 g	100	pc(s)	45
118 162	497139	01 08 03 01	70 g	50	pc(s)	38
118 163	497177	01 08 03 01	95 g	50	pc(s)	38
118 164	497184	01 08 03 01	125 g	50	pc(s)	38
118 165	357822	01 08 03 01	28 g	50	pc(s)	38
118 202	476271	01 08 04 01	120 g	15	pc(s)	74
118 208	497382	01 08 04 01	230 g	15	pc(s)	74
118 209	357464	01 08 04 01	50 g	15	pc(s)	74
118 218	497528	01 08 04 01	104 g	15	pc(s)	74
118 219	476301	01 08 04 01	400 g	15	pc(s)	74
118 252	497603	01 08 04 01	65 g	12	pc(s)	75
118 256	498136	01 08 04 01	232 g	5	pc(s)	75
118 268	497573	01 08 04 01	420 g	4	pc(s)	75
118 272	515932	01 08 04 01	70 g	20	pc(s)	76
118 273	515949	01 08 04 01	65 g	20	pc(s)	76
118 275	515956	01 08 04 01	30 g	20	pc(s)	76
118 281	476349	01 08 04 01	170 g	12	pc(s)	75
118 283	476363	01 08 04 01	210 g	12	pc(s)	75
118 285	497597	01 08 04 01	200 g	2	pc(s)	75
118 286	497610	01 08 04 01	100 g	10	pc(s)	75
118 313	520905	01 08 04 01	110 g	20	pc(s)	76
118 314	536531	01 08 04 01	160 g	15	pc(s)	76
118 315	520912	01 08 04 01	130 g	15	pc(s)	76
118 336	520059	01 08 06 01	350 g	4	pc(s)	177
118 337	520042	01 08 06 01	740 g	8	pc(s)	177
118 338	520035	01 08 06 01	150 g	8	pc(s)	177
118 339	520080	01 08 06 01	500 g	8	pc(s)	177
118 342	520097	01 08 06 01	270 g	4	pc(s)	177
118 346	520073	01 08 06 01	1.12 kg	8	pc(s)	177
118 349	520066	01 08 06 01	390 g	4	pc(s)	177
118 350	299405	01 08 05 01	1.90 kg	1	pc(s)	209
118 351	299412	01 08 05 01	2.33 kg	1	pc(s)	209
118 352	299429	01 08 05 01	2.77 kg	1	pc(s)	209
118 353	299436	01 08 05 01	3.50 kg	1	pc(s)	209
118 354	299443	01 08 05 01	3.94 kg	1	pc(s)	209
118 360	299450	01 08 05 01	2.49 kg	1	pc(s)	211
118 361	299467	01 08 05 01	2.93 kg	1	pc(s)	211
118 362	299474	01 08 05 01	3.36 kg	1	pc(s)	211
118 363	299481	01 08 05 01	4.09 kg	1	pc(s)	211
118 364	299498	01 08 05 01	4.52 kg	1	pc(s)	211
118 366	472280	01 08 05 01	5.85 kg	1	pc(s)	211
118 370	299504	01 08 05 01	3.11 kg	1	pc(s)	210
118 371	309319	01 08 05 01	3.54 kg	1	pc(s)	210
118 372	309326	01 08 05 01	3.98 kg	1	pc(s)	210
118 373	309333	01 08 05 01	4.70 kg	1	pc(s)	210
118 374	357853	01 08 05 01	5.55 kg	1	pc(s)	210
118 380	299528	01 08 05 01	780 g	1	pc(s)	208
118 411	520677	01 08 01 01	450 g	2	pc(s)	95
118 412	520684	01 08 01 01	150 g	2	pc(s)	95
118 413	536050	01 08 01 01	440 g	2	pc(s)	95
118 464	536661	01 08 01 01	345 g	1	pc(s)	95
118 465	536678	01 08 01 01	125 g	1	pc(s)	95
118 466	535695	01 08 01 01	370 g	1	pc(s)	95
118 467	535688	01 08 01 01	130 g	1	pc(s)	95

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118 471	535701	01 08 03 01	575 g	1	pc(s)	95
118 472	536234	01 08 03 01	20 g	15	pc(s)	95
118 473	535718	01 08 03 01	486 g	4	pc(s)	94
118 478	476776	01 08 03 01	460 g	2	pc(s)	95
118 479	536203	01 08 03 01	150 g	2	pc(s)	95
118 571	536579	01 08 06 01	225 g	4	pc(s)	212
118 574	536067	01 08 06 01	310 g	4	pc(s)	212
118 587	536074	01 08 06 01	820 g	4	pc(s)	212
118 591	536647	01 08 06 01	230 g	4	pc(s)	212
118 593	475663	01 08 06 01	340 g	4	pc(s)	212
118 598	536654	01 08 06 01	820 g	4	pc(s)	212
118 606	497689	01 08 04 01	190 g	1	pc(s)	75
118 620	497702	01 08 04 01	80 g	1	pc(s)	75
118 628	536241	01 08 04 01	190 g	9	pc(s)	75
118 634	497535	01 08 04 01	408 g	5	pc(s)	75
118 635	497542	01 08 04 01	760 g	2	pc(s)	75
118 900	472150	01 08 05 01	1.08 kg	1	pc(s)	209
118 901	472167	01 08 05 01	1.46 kg	1	pc(s)	209
118 907	472174	01 08 05 01	4.37 kg	1	pc(s)	209
118 908	472181	01 08 05 01	5.21 kg	1	pc(s)	209
118 909	472198	01 08 05 01	5.69 kg	1	pc(s)	209
118 910	472204	01 08 05 01	6.47 kg	1	pc(s)	209
118 911	472211	01 08 05 01	6.95 kg	1	pc(s)	209
118 912	472228	01 08 05 01	7.42 kg	1	pc(s)	209
118 913	472235	01 08 05 01	7.90 kg	1	pc(s)	209
118 914	472242	01 08 05 01	8.37 kg	1	pc(s)	209
118 915	472259	01 08 05 01	1.61 kg	1	pc(s)	211
118 916	472266	01 08 05 01	2.05 kg	1	pc(s)	211
118 917	537132	01 08 04 01	810 g	1	pc(s)	233
118 918	537149	01 08 04 01	2.70 kg	1	pc(s)	233
118 922	472273	01 08 05 01	5.37 kg	1	pc(s)	211
118 924	472297	01 08 05 01	6.32 kg	1	pc(s)	211
118 925	472303	01 08 05 01	7.10 kg	1	pc(s)	211
118 926	472310	01 08 05 01	7.57 kg	1	pc(s)	211
118 927	472327	01 08 05 01	8.09 kg	1	pc(s)	211
118 928	472334	01 08 05 01	8.52 kg	1	pc(s)	211
118 929	472341	01 08 05 01	9.01 kg	1	pc(s)	211
118 930	472358	01 08 05 01	2.23 kg	1	pc(s)	210
118 931	472365	01 08 05 01	2.67 kg	1	pc(s)	210
118 937	472372	01 08 05 01	6.03 kg	1	pc(s)	210
118 938	472389	01 08 05 01	6.50 kg	1	pc(s)	210
118 939	472396	01 08 05 01	6.98 kg	1	pc(s)	210
118 940	472402	01 08 05 01	7.76 kg	1	pc(s)	210
118 941	472419	01 08 05 01	8.23 kg	1	pc(s)	210
118 942	472426	01 08 05 01	8.71 kg	1	pc(s)	210
118 943	472433	01 08 05 01	9.19 kg	1	pc(s)	210
118 944	472440	01 08 05 01	9.66 kg	1	pc(s)	210
119 350	474277	01 08 05 01	1.90 kg	1	pc(s)	209
119 351	474284	01 08 05 01	2.33 kg	1	pc(s)	209
119 352	474291	01 08 05 01	2.77 kg	1	pc(s)	209
119 353	474307	01 08 05 01	3.50 kg	1	pc(s)	209
119 354	474314	01 08 05 01	3.94 kg	1	pc(s)	209
119 360	474222	01 08 05 01	2.49 kg	1	pc(s)	211
119 361	474239	01 08 05 01	2.93 kg	1	pc(s)	211
119 362	474246	01 08 05 01	3.36 kg	1	pc(s)	211
119 363	474253	01 08 05 01	4.09 kg	1	pc(s)	211
119 364	474260	01 08 05 01	4.52 kg	1	pc(s)	211
119 366	474215	01 08 05 01	5.85 kg	1	pc(s)	211
119 370	474321	01 08 05 01	3.11 kg	1	pc(s)	210
119 371	474338	01 08 05 01	3.54 kg	1	pc(s)	210
119 372	474345	01 08 05 01	3.98 kg	1	pc(s)	210
119 373	488205	01 08 05 01	4.70 kg	1	pc(s)	210
119 374	474352	01 08 05 01	5.55 kg	1	pc(s)	210
119 900	472457	01 08 05 01	1.08 kg	1	pc(s)	209
119 901	472464	01 08 05 01	1.46 kg	1	pc(s)	209
119 907	472471	01 08 05 01	4.37 kg	1	pc(s)	209
119 908	472488	01 08 05 01	5.21 kg	1	pc(s)	209
119 909	472495	01 08 05 01	5.69 kg	1	pc(s)	209
119 910	472501	01 08 05 01	6.47 kg	1	pc(s)	209
119 911	472518	01 08 05 01	6.95 kg	1	pc(s)	209
119 912	472525	01 08 05 01	7.42 kg	1	pc(s)	209
119 913	472532	01 08 05 01	7.90 kg	1	pc(s)	209
119 914	472549	01 08 05 01	8.37 kg	1	pc(s)	209
119 915	472556	01 08 05 01	1.61 kg	1	pc(s)	211
119 916	472563	01 08 05 01	2.05 kg	1	pc(s)	211
119 917	537156	01 08 04 01	810 g	1	pc(s)	233
119 918	537163	01 08 04 01	2.70 kg	1	pc(s)	233
119 922	472570	01 08 05 01	5.37 kg	1	pc(s)	211
119 924	472587	01 08 05 01	6.32 kg	1	pc(s)	211
119 925	472594	01 08 05 01	7.10 kg	1	pc(s)	211
119 926	472600	01 08 05 01	7.57 kg	1	pc(s)	211
119 927	472617	01 08 05 01	8.09 kg	1	pc(s)	211
119 928	472624	01 08 05 01	8.52 kg	1	pc(s)	211
119 929	472631	01 08 05 01	9.01 kg	1	pc(s)	211
119 930	472648	01 08 05 01	2.23 kg	1	pc(s)	210
119 931	472655	01 08 05 01	2.67 kg	1	pc(s)	210
119 937	472662	01 08 05 01	6.03 kg	1	pc(s)	210
119 938	472679	01 08 05 01	6.50 kg	1	pc(s)	210
119 939	472686	01 08 05 01	6.98 kg	1	pc(s)	210
119 940	472693	01 08 05 01	7.76 kg	1	pc(s)	210
119 941	472709	01 08 05 01	8.23 kg	1	pc(s)	210
119 942	472716	01 08 05 01	8.71 kg	1	pc(s)	210
119 943	472723	01 08 05 01	9.19 kg	1	pc(s)	210
119 944	472730	01 08 05 01	9.66 kg	1	pc(s)210	
119 998	488229	01 08 05 01	780 g	1	pc(s)	208
123 021	092822	01 01 01 03	2.20 kg	1	pc(s)	88
123 032	242067	01 01 01 03	17.70 kg	1	pc(s)	89
123 040	353817	01 03 01 01	167 g	12	pc(s)	88/124
123 041	353787	01 03 01 01	180 g	12	pc(s)	88/124
123 042	353794	01 03 01 01	122 g	12	pc(s)	88/124
123 043	353824	01 03 01 01	75 g	12	pc(s)	88/124
123 050	402454	01 06 01 01	5.66 kg	1	pc(s)	87/124
123 051	402461	01 06 01 01	8.17 kg	1	pc(s)	87/124
123 052	402478	01 06 01 01	10.68 kg	1	pc(s)	87/124
123 109	107366	01 01 01 03	340 g	1	pc(s)	92
123 110	147911	01 01 01 03	321 g	1	pc(s)	92
123 116	147966	01 01 01 03	1.11 kg	1	pc(s)	92
123 425	129009	01 01 01 03	2.82 kg	1	pc(s)	88
123 430	129016	01 01 01 03	3.22 kg	1	pc(s)	88
123 435	129023	01 01 01 03	3.42 kg	1	pc(s)	88
128 010	298231	02 08 02 01	670 g/m	50	m	13
128 011	300316	02 08 02 01	890 g/m	40	m	13
128 012	300309	02 08 02 01	1.34 kg/m	40	m	13
128 013	300293	02 08 02 01	1.66 kg/m	30	m	13
128 016	300262	02 08 02 01	1.34 kg/m	20	m	13
128 018	492202	02 08 02 01	530 g/m	40	m	13
128 019	492219	02 08 02 01	670 g/m	40	m	13
128 021	492721	02 08 02 01	1.34 kg/m	30	m	13
128 022	492738	02 08 02 01	1.07 kg/m	20	m	13
128 023	492745	02 08 02 01	1.78 kg/m	20	m	13
128 024	492752	02 08 02 01	2.14 kg/m	20	m	13
128 030	298248	02 08 02 02	770 g/m	50	m	14
128 031	298323	02 08 02 02	770 g/m	50	m	14
128 032	298347	02 08 02 02	770 g/m	50	m	14
128 034	298378	02 08 02 02	770 g/m	50	m	14
128 035	298385	02 08 02 02	770 g/m	50	m	14
128 036	298392	02 08 02 02	770 g/m	50	m	14
128 080	493056	02 08 02 02	1.53 kg/m	40	m	14
128 081	493063	02 08 02 02	1.53 kg/m	40	m	14
128 085	493070	02 08 02 02	1.53 kg/m	40	m	14
128 090	493087	02 08 02 02	910 g/m	30	m	14
128 094	493100	02 08 02 02	910 g/m	30	m	14
128 095	493094	02 08 02 02	910 g/m	30	m	14
128 105	493117	02 08 02 02	1.50 kg/m	20	m	14
128 115	493124	02 08 02 02	2.95 kg/m	20	m	14
128 230	300101	02 08 02 01	1.78 kg/m	20	m	13
128 235	300095	02 08 02 01	2.67 kg/m	20	m	13
128 250	300088	02 08 02 03	670 g/m	50	m	14
128 251	492776	02 08 02 03	890 g/m	40	m	14

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128 252	492783	02 08 02 03	1.34 kg/m	40	m	14
128 253	492790	02 08 02 03	2.14 kg/m	20	m	14
128 254	492806	02 08 02 03	1.34 kg/m	20	m	14
128 255	492813	02 08 02 03	1.78 kg/m	20	m	14
128 256	492820	02 08 02 03	2.67 kg/m	20	m	14
138 031	300767	03 08 01 02	1.89 kg	5	pc(s)	194
138 032	300750	03 08 01 04	1.90 kg	10	pc(s)	194
138 033	431164	03 08 01 02	2.15 kg	5	pc(s)	194
138 034	300743	03 08 01 04	2.95 kg	5	pc(s)	194
138 035	493414	03 08 01 02	2.36 kg	5	pc(s)	194
138 036	298170	03 08 01 01	110 g	1	pc(s)	195
138 037	298163	03 08 01 01	120 g	1	pc(s)	195
138 038	493421	03 08 01 02	4.72 kg	5	pc(s)	194
138 040	300736	03 08 01 04	20 g	100	pc(s)	194
138 041	300729	03 08 01 02	22 g	100	194	
138 050	493438	03 08 01 02	2.68 kg	5	pc(s)	194
138 051	475540	03 08 01 02	5.37 kg	5	pc(s)	194
138 055	525214	03 08 01 04	2.34 kg	10	pc(s)	194
138 056	525726	03 08 01 04	4.68 kg	5	pc(s)	194
138 057	525733	03 08 01 04	3.65 kg	5	pc(s)	194
138 058	525740	03 08 01 04	7.30 kg	5	pc(s)	194
138 060	300712	03 08 01 02	3.35 kg	5	pc(s)	194
138 061	468641	03 08 01 02	3.39 kg	5	pc(s)	194
138 062	493445	03 08 01 02	4.19 kg	5	pc(s)	194
138 063	493452	03 08 01 02	8.39 kg	5	pc(s)	194
138 064	522800	03 08 01 02	1.87 kg	5	pc(s)	194
138 065	522817	03 08 01 02	2.15 kg	5	pc(s)	194
138 068	300705	03 08 06 01	40 g	50	pc(s)	195
138 069	300699	03 08 06 01	60 g	50	pc(s)	195
138 072	300675	03 08 06 01	30 g	50	pc(s)	195
138 073	300668	03 08 06 01	40 g	50	pc(s)	195
138 091	309272	03 08 05 01	28 kg	1	pc(s)	56
138 094	311763	03 08 05 01	350 g	1	pc(s)	56
138 097	501553	03 08 05 01	2.35 kg	1	pc(s)	56
138 110	297999	03 08 03 02	4.35 kg	1	pc(s)	167
138 111	298002	03 08 03 02	6.57 kg	1	pc(s)	167
138 115	300620	03 08 03 02	4.80 kg	1	pc(s)	167
138 116	300613	03 08 03 02	10.80 kg	1	pc(s)	167
138 118	300606	03 08 03 02	9.60 kg	1	pc(s)	167
138 119	300590	03 08 03 02	21.60 kg	1	pc(s)	167
138 125	300583	03 08 02 01	25 kg	1	pc(s)	185
138 126	300576	03 08 02 01	25 kg	1	pc(s)	185
138 134	519237	03 08 01 05	180 g	10	pc(s)	196
138 135	519244	03 08 01 05	190 g	9	pc(s)	196
138 136	475854	03 08 01 05	70 g	20	pc(s)	196
138 137	475861	03 08 01 05	100 g	20	pc(s)	196
138 148	300507	03 08 01 05	230 g	8	pc(s)	184/197
138 150	298156	03 08 01 05	90 g	20	pc(s)	197
138 151	528253	03 08 01 05	100 g	20	pc(s)	197
138 152	534995	03 08 01 05	210 g	8	pc(s)	197
138 164	519077	03 08 01 05	220 g	8	pc(s)	184/196
138 165	519084	03 08 01 05	240 g	8	pc(s)	184/196
138 166	519091	03 08 01 05	280 g	6	pc(s)	184/196
138 170	519107	03 08 01 05	210 g	8	pc(s)	184/196
138 171	519114	03 08 01 05	230 g	8	pc(s)	184/196
138 172	519121	03 08 01 05	270 g	6	pc(s)	184/196
138 173	535008	03 08 01 05	470 g	2	pc(s)	185
138 174	519152	03 08 01 05	230 g	6	pc(s)	185
138 176	519169	03 08 01 05	300 g	6	pc(s)	185
138 177	519138	03 08 01 05	370 g	4	pc(s)	184/196
138 178	519176	03 08 01 05	440 g	4	pc(s)	185
138 179	519183	03 08 01 05	730 g	2	pc(s)	185
138 185	517646	03 08 01 05	260 g	4	pc(s)	185
138 186	528246	03 08 01 05	260 g	4	pc(s)	185
138 187	517653	03 08 01 05	268 g	4	pc(s)	185
138 200	300491	03 08 04 01	60 g	25	pc(s)	212
138 201	540774	03 08 04 02	106 g	25	pc(s)	212
138 202	540781	03 08 04 02	125 g	20	pc(s)	212
138 203	540798	03 08 04 02	235 g	20	pc(s)	212
138 220	540736	03 08 04 02	60 g	25	pc(s)	212
138 222	540743	03 08 04 02	106 g	25	pc(s)	212
138 224	540750	03 08 04 02	125 g	20	pc(s)	212
138 226	540767	03 08 04 02	235 g	20	pc(s)	212
138 251	298149	03 08 01 05	220 g	10	pc(s)	95
138 252	536210	03 08 01 05	230 g	10	pc(s)	95
138 253	536326	03 08 01 05	90 g	10	pc(s)	95
138 260	519022	03 08 01 05	326 g	4	pc(s)	184
138 261	519015	03 08 01 05	190 g	8	pc(s)	184/197
138 263	519039	03 08 01 05	345 g	4	pc(s)	184
138 265	519046	03 08 01 05	210 g	8	pc(s)	184/197
138 283	519190	03 08 01 05	308 g	10	pc(s)	196
138 284	519206	03 08 01 05	432 g	4	pc(s)	197
138 315	300415	03 08 05 01	2.70 kg	1	pc(s)	55
138 316	300408	03 08 05 01	2.70 kg	1	pc(s)	55
138 320	300392	03 08 05 01	2.70 kg	1	pc(s)	55
138 321	300385	03 08 05 01	2.70 kg	1	pc(s)	55
138 322	300378	03 08 05 01	2.70 kg	1	pc(s)	55
146 309	072398	01 01 01 04	864 g	1	pc(s)	32
148 010	357891	03 08 07 02	1.20 kg	1	pc(s)	244
148 011	357907	03 08 07 02	1.12 kg	1	pc(s)	244
148 012	357914	03 08 07 02	1.22 kg	1	pc(s)	244
148 013	357921	03 08 07 02	1.48 kg	1	pc(s)	244
148 014	357938	03 08 07 02	1.88 kg	1	pc(s)	244
148 015	357945	03 08 07 02	2.40 kg	1	pc(s)	244
148 016	357952	03 08 07 02	3.02 kg	1	pc(s)	244
148 100	357969	03 08 07 01	1.42 kg	1	pc(s)	243
148 101	357976	03 08 07 01	1.42 kg	1	pc(s)	243
148 110	357983	03 08 07 01	1.42 kg	1	pc(s)	243
148 111	357990	03 08 07 01	1.42 kg	1	pc(s)	243
148 112	358003	03 08 07 01	1.42 kg	1	pc(s)	243
148 113	358010	03 08 07 01	1.42 kg	1	pc(s)	243
148 114	358034	03 08 07 01	2.68 kg	1	pc(s)	243
148 120	358041	03 08 07 01	1.42 kg	1	pc(s)	242
148 121	358058	03 08 07 01	1.42 kg	1	pc(s)	242
148 122	358065	03 08 07 01	1.42 kg	1	pc(s)	242
148 123	358072	03 08 07 01	1.42 kg	1	pc(s)	242
148 124	358089	03 08 07 01	2.68 kg	1	pc(s)	242
148 130	358096	03 08 07 01	1.42 kg	1	pc(s)	242
148 131	358102	03 08 07 01	1.42 kg	1	pc(s)	242
148 132	358119	03 08 07 01	1.42 kg	1	pc(s)	242
148 140	358126	03 08 07 01	1.42 kg	1	pc(s)	242
148 141	358133	03 08 07 01	1.42 kg	1	pc(s)	242
148 142	358140	03 08 07 01	1.42 kg	1	pc(s)	242
148 143	358157	03 08 07 01	1.42 kg	1	pc(s)	242
148 144	358164	03 08 07 01	1.42 kg	1	pc(s)	242
148 145	358171	03 08 07 01	1.42 kg	1	pc(s)	242
148 146	358188	03 08 07 01	1.42 kg	1	pc(s)	242
148 147	358195	03 08 07 01	1.42 kg	1	pc(s)	242
148 148	358201	03 08 07 01	1.42 kg	1	pc(s)	242
148 150	358218	03 08 07 01	1.42 kg	1	pc(s)	242
148 151	358225	03 08 07 01	1.42 kg	1	pc(s)	242
148 152	358232	03 08 07 01	1.42 kg	1	pc(s)	242
148 153	358249	03 08 07 01	1.42 kg	1	pc(s)	242
148 154	358256	03 08 07 01	1.42 kg	1	pc(s)	242
148 160	358263	03 08 07 01	1.42 kg	1	pc(s)	243
148 161	358270	03 08 07 01	1.42 kg	1	pc(s)	243
148 170	358836	03 08 07 01	1.42 kg	1	pc(s)	243
148 171	358843	03 08 07 01	2.68 kg	1	pc(s)	243
148 180	358850	03 08 07 01	1.42 kg	1	pc(s)	243
148 181	358867	03 08 07 01	2.68 kg	1	pc(s)	243
148 190	358874	03 08 07 01	2.68 kg	1	pc(s)	243
148 191	358881	03 08 07 01	2.68 kg	1	pc(s)	243
148 200	358898	03 08 07 01	1.42 kg	1	pc(s)	243
148 201	358904	03 08 07 01	2.68 kg	1	pc(s)	243
148 202	358942	03 08 07 01	2.68 kg	1	pc(s)	243
148 210	358911	03 08 07 01	1.42 kg	1	pc(s)	242
148 211	358928	03 08 07 01	1.42 kg	1	pc(s)	242
148 212	022614	03 08 07 01	1.42 kg	1	pc(s)	242
148 998	357860	03 08 07 02	1.10 kg	1	pc(s)	244

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148 999	357877	03 08 07 02	1.25 kg	1	pc(s)	244
200 027	031258	01 04 01 04	46 g	10	pc(s)	40
200 029	031265	01 04 01 04	45 g	10	pc(s)	40
200 039	129283	01 04 01 04	40 g	10	pc(s)	40
200 039	129283	01 04 01 04	40 g	10	pc(s)	340
200 057	041530	01 04 01 04	30 g	25	pc(s)	40
200 059	041547	01 04 01 04	26 g	25	pc(s)	40
200 067	041554	01 04 01 04	34 g	25	pc(s)	40
200 069	041561	01 04 01 04	28 g	25	pc(s)	40
200 077	082335	01 04 01 04	32 g	50	pc(s)	40
200 079	069138	01 04 01 04	49 g	50	pc(s)	40
200 087	082342	01 04 01 04	36 g	50	pc(s)	40
200 089	074729	01 04 01 04	54 g	50	pc(s)	40
200 600	098220	01 06 01 01	4 g	50	pc(s)	46
200 601	098237	01 06 01 01	7 g	50	pc(s)	46
202 000	019881	01 03 01 02	9 g	50	pc(s)	39
202 001	020474	01 03 01 02	3 g	50	pc(s)	39
202 005	022041	01 03 01 01	70 g	50	pc(s)	35
202 010	019874	01 03 01 01	159 g	50	pc(s)	30
202 015	022089	01 03 01 01	59 g	50	pc(s)	35
202 017	019904	01 03 01 01	189 g	1	pc(s)	30
202 020	020764	01 03 01 01	250 g	25	pc(s)	27
202 021	020788	01 03 01 01	264 g	1	pc(s)	27
202 027	020771	01 03 01 01	290 g	1	pc(s)	27
202 030	022362	01 03 01 01	114 g	50	pc(s)	21
202 037	019942	01 03 01 01	187 g	50	pc(s)	30
202 040	019935	01 03 01 01	170 g	50	pc(s)	30
202 050	020214	01 03 01 01	137 g	25	pc(s)	31
202 060	022263	01 03 01 01	226 g	1	pc(s)	21
202 080	020276	01 03 01 01	250 g	50	pc(s)	31
202 169	105737	01 03 01 02	6 g	100	pc(s)	39
202 227	020795	01 03 01 01	290 g	25	pc(s)	27
202 829	159822	01 07 01 01	119 g	1	pc(s)	120/137
202 850	354135	01 07 01 01	201 g	25	pc(s)	120/137
202 851	354142	01 07 01 01	208 g	25	pc(s)	120/137
202 852	354159	01 07 01 01	153 g	25	pc(s)	120/137
202 853	354166	01 07 01 01	109 g	25	pc(s)	120/138
202 857	153189	01 07 01 03	127 g	1	pc(s)	155
202 860	354180	01 07 01 03	207 g	25	pc(s)	155
202 861	354197	01 07 01 03	217 g	25	pc(s)	155
202 862	354203	01 07 01 03	160 g	25	pc(s)	155
202 863	354210	01 07 01 03	115 g	25	pc(s)	155
202 900	020801	01 03 01 01	127 g	1	pc(s)	27
202 901	019928	01 03 01 01	83 g	50	pc(s)	30
202 902	020467	01 03 01 01	81 g	50	pc(s)	30
202 906	022102	01 03 01 01	32 g	50	pc(s)	35
204 001	018990	01 03 01 02	8 g	100	pc(s)	37
204 002	019195	01 03 01 02	8 g	50	pc(s)	37
204 003	019034	01 03 01 02	15 g	100	pc(s)	37
204 004	019003	01 03 01 02	15 g	50	pc(s)	37
204 006	028371	01 03 01 02	19 g	50	pc(s)	37
204 007	019188	01 03 01 02	9 g	50	pc(s)	37
204 017	019058	01 03 01 02	9 g	100	pc(s)	37
204 027	018969	01 03 01 02	12 g	100	pc(s)	37
204 029	032286	01 03 01 01	35 g	50	pc(s)	28
204 037	019331	01 03 01 02	16 g	50	pc(s)	37
204 039	032293	01 03 01 01	35 g	50	pc(s)	28
204 049	032309	01 03 01 01	40 g	50	pc(s)	31
204 059	032316	01 03 01 01	41 g	50	pc(s)	31
204 069	032675	01 03 01 01	31 g	50	pc(s)	31
204 079	032668	01 03 01 01	31 g	50	pc(s)	31
204 089	109568	01 03 01 01	67 g	1	pc(s)	29
204 107	028104	01 03 01 01	105 g	25	pc(s)	27
204 109	028098	01 03 01 01	98 g	25	pc(s)	27
204 120	085749	01 03 01 02	20 g	50	pc(s)	37
204 127	028142	01 03 01 01	110 g	25	pc(s)	27
204 129	021433	01 03 01 01	102 g	25	pc(s)	27
204 147	042513	01 03 01 01	51 g	50	pc(s)	28
204 149	042285	01 03 01 01	52 g	50	pc(s)	28
204 157	042520	01 03 01 01	83 g	50	pc(s)	28
204 159	042537	01 03 01 01	78 g	50	pc(s)	28
204 169	042551	01 03 01 01	100 g	1	pc(s)	28
204 170	072435	01 03 01 01	40 g	50	pc(s)	29
204 171	073708	01 03 01 01	38 g	50	pc(s)	29
204 177	042568	01 03 01 01	70 g	50	pc(s)	29
204 179	042575	01 03 01 01	60 g	50	pc(s)	29
204 187	042582	01 03 01 01	91 g	50	pc(s)	29
204 189	042599	01 03 01 01	83 g	50	pc(s)	29
204 197	042605	01 03 01 01	112 g	1	pc(s)	29
204 199	042278	01 03 01 01	111 g	50	pc(s)	29
204 229	035300	01 03 01 01	31 g	50	pc(s)	32
204 239	035317	01 03 01 01	31 g	50	pc(s)	32
204 247	041806	01 03 01 01	72 g	25	pc(s)	26
204 249	041790	01 03 01 01	68 g	25	pc(s)	26
204 267	035805	01 03 01 01	70 g	25	pc(s)	26
204 269	035812	01 03 01 01	64 g	25	pc(s)	26
204 359	082779	01 03 01 01	61 g	1	pc(s)	31
204 449	124837	01 03 01 01	66 g	25	pc(s)	26
204 469	124851	01 03 01 01	63 g	25	pc(s)	26
204 906	028456	01 03 01 01	19 g	50	pc(s)	35
204 911	030640	01 03 01 01	98 g	25	pc(s)	27
204 913	030664	01 03 01 01	108 g	25	pc(s)	27
204 916	030565	01 03 01 01	19 g	50	pc(s)	35
204 921	030589	01 03 01 01	50 g	1	pc(s)	28
204 924	030619	01 03 01 01	64 g	50	pc(s)	29
204 925	030626	01 03 01 01	90 g	50	pc(s)	29
204 935	029958	01 03 01 01	40 g	1	pc(s)	28
204 936	029927	01 03 01 01	40 g	50	pc(s)	28
204 937	029941	01 03 01 01	46 g	50	pc(s)	28
204 938	029989	01 03 01 01	47 g	50	pc(s)	28
204 949	129290	01 03 01 01	54 g	50	pc(s)	28
204 957	129269	01 03 01 01	55 g	50	pc(s)	28
206 049	242982	01 03 01 01	25 g	50	pc(s)	31
206 105	083189	01 03 01 01	74 g	50	pc(s)	35
206 109	042810	01 03 01 01	110 g	25	pc(s)	27
206 170	082816	01 03 01 01	51 g	50	pc(s)	30
206 171	089488	01 03 01 01	51 g	50	pc(s)	30
206 207	054257	01 03 01 01	65 g	50	pc(s)	29
206 209	042759	01 03 01 01	59 g	50	pc(s)	29
206 217	052208	01 03 01 01	93 g	50	pc(s)	29
206 219	042766	01 03 01 01	83 g	50	pc(s)	29
206 227	054264	01 03 01 01	117 g	50	pc(s)	29
206 229	042773	01 03 01 01	114 g	50	pc(s)	29
206 237	077300	01 03 01 01	81 g	25	pc(s)	26
206 239	042650	01 03 01 01	74 g	25	pc(s)	26
206 247	078574	01 03 01 01	92 g	25	pc(s)	26
206 249	042803	01 03 01 01	80 g	25	pc(s)	26
206 289	149427	01 03 01 01	76 g	50	pc(s)	30
206 309	042780	01 03 01 01	60 g	50	pc(s)	30
206 319	042667	01 03 01 01	87 g	50	pc(s)	30
206 329	042797	01 03 01 01	110 g	50	pc(s)	30
206 339	047730	01 03 01 01	27 g	50	pc(s)	35
206 349	047716	01 03 01 01	48 g	50	pc(s)	32
206 359	047723	01 03 01 01	65 g	50	pc(s)	31
206 369	086494	01 03 01 01	50 g	50	pc(s)	32
206 379	430983	01 03 01 01	56 g	50	pc(s)	31
206 389	109544	01 03 01 01	62 g	50	pc(s)	31
206 399	109551	01 03 01 01	63 g	50	pc(s)	31
206 439	124875	01 03 01 01	72 g	25	pc(s)	26
206 449	124899	01 03 01 01	78 g	25	pc(s)	26
206 807	046306	01 03 01 01	107 g	25	pc(s)	27
206 809	077485	01 03 01 01	114 g	25	pc(s)	27
206 817	078581	01 03 01 01	122 g	25	pc(s)	27
206 819	077362	01 03 01 01	115 g	25	pc(s)	27
207 007	054899	01 03 01 02	16 g	50	pc(s)	36
207 009	054882	01 03 01 02	16 g	50	pc(s)	36
207 017	054905	01 03 01 02	16 g	50	pc(s)	36

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207 019	054912	01 03 01 02	20 g	50	pc(s)	36
207 027	042728	01 03 01 02	26 g	50	pc(s)	36
207 029	042711	01 03 01 02	24 g	50	pc(s)	36
207 037	042742	01 03 01 02	26 g	50	pc(s)	36
207 039	042735	01 03 01 02	24 g	50	pc(s)	36
207 107	235649	01 03 01 02	30 g	50	pc(s)	36
207 109	085800	01 03 01 02	27 g	50	pc(s)	36
216 000	020054	01 03 01 01	74 g	25	pc(s)	28
223 005	099937	01 03 01 03	481 g	1	pc(s)	92
223 010	092778	01 03 01 01	184 g	50	pc(s)	33
223 011	092785	01 03 01 01	167 g	50	pc(s)	33
223 020	092792	01 03 01 01	121 g	50	pc(s)	34
223 021	092808	01 03 01 01	103 g	50	pc(s)	34
223 031	092815	01 03 01 01	117 g	50	pc(s)	34
223 040	096752	01 03 01 01	100 g	50	pc(s)	33
223 041	096769	01 03 01 01	96 g	50	pc(s)	33
223 070	108738	01 03 01 01	103 g	50	pc(s)	33
223 071	108745	01 03 01 01	94 g	50	pc(s)	33
239 000	022621	01 01 01 04	4.70 kg	1	pc(s)	32
239 001	022638	01 01 01 04	5.17 kg	1	pc(s)	32
239 009	072350	01 01 01 04	4.04 kg	1	pc(s)	32
239 019	093560	01 01 01 04	5.20 kg	1	pc(s)	32
240 000	022614	01 01 01 04	1.50 kg	1	pc(s)	32
241 009	072985	01 01 01 04	376 g	20	pc(s)	32
250 000	023871	01 03 01 02	30 g	50	pc(s)	36
250 001	023888	01 03 01 02	29 g	50	pc(s)	36
250 007	023895	01 03 01 02	29 g	50	pc(s)	36
252 000	023963	01 03 01 03	45 g	50	pc(s)	50
253 015	022201	01 03 01 01	1.04 kg	10	pc(s)	20/118
253 015	022201	01 03 01 01	1.04 kg	10	pc(s)	135
253 021	022256	01 03 01 01	6 g	50	pc(s)	21
253 023	022249	01 03 01 01	8 g	50	pc(s)	21
253 025	053984	01 03 01 01	6 g	50	pc(s)	21
253 026	100169	01 07 01 01	8 g	50	pc(s)	118/135
253 027	110427	01 07 01 01	8 g	50	pc(s)	122/135
253 029	089617	01 03 01 01	1 g	100	pc(s)	21
253 030	054271	01 03 01 01	58 g	100	pc(s)	20
253 050	079687	01 03 01 01	1.04 kg	10	pc(s)	20
253 051	079823	01 03 01 01	38 g	100	pc(s)	20
253 060	081628	01 03 01 01	1.04 kg	10	pc(s)	20
253 115	129870	01 03 01 01	4.82 kg	24	pc(s)	103
253 125	129887	01 03 01 01	4.84 kg	24	pc(s)	103
253 229	159846	01 07 01 01	4.89 kg	1	pc(s)	118/135
253 239	159853	01 07 01 01	8.70 kg	1	pc(s)	118/135
253 279	159877	01 07 01 01	178 g	1	pc(s)	119/136
253 289	159860	01 07 01 01	89 g	1	pc(s)	119/136
253 300	129771	01 03 01 01	165 g	24	pc(s)	103/119
253 300	129771	01 03 01 01	165 g	24	pc(s)	136/152
253 301	129788	01 03 01 01	4.60 kg	24	pc(s)	103/119
253 301	129788	01 03 01 01	4.60 kg	24	pc(s)	136/152
253 302	129764	01 03 01 01	13 g	24	pc(s)	103
253 310	129795	01 03 01 01	470 g	10	pc(s)	103
253 315	129801	01 03 01 01	55 g	24	pc(s)	92/103
253 325	129863	01 03 01 01	77 g	24	pc(s)	92/103
253 330	153585	01 07 01 03	96 g	1	pc(s)	152
253 331	155206	01 07 01 03	180 g	25	pc(s)	152
253 333	153578	01 07 01 03	4.74 kg	24	pc(s)	152
253 334	154933	01 07 01 03	8.59 kg	1	pc(s)	152
253 335	499416	01 03 01 01	4.98 kg	24	pc(s)	20
273 019	031487	01 03 01 02	22 g	50	pc(s)	39
274 030	130340	01 03 01 02	34 g	50	pc(s)	43
274 030	130340	01 03 01 02	34 g	50	pc(s)	51
274 110	123434	01 03 01 02	30 g	50	pc(s)	37/49
274 113	123403	01 03 01 02	36 g	50	pc(s)	38/49
274 116	123410	01 03 01 03	37 g	50	pc(s)	50/78
274 117	128194	01 03 01 02	30 g	50	pc(s)	37/49
274 150	128187	01 03 01 02	33 g	50	pc(s)	37/49
274 160	123380	01 03 01 02	40 g	50	pc(s)	37/49
274 160	123380	01 03 01 02	40 g	50	pc(s)	167
274 167	128200	01 03 01 02	41 g	50	pc(s)	37/49
274 230	130456	01 03 01 02	45 g	50	pc(s)	43/51
274 260	123489	01 03 01 03	48 g	50	pc(s)	50/78
275 019	031494	01 03 01 03	31 g	50	pc(s)	50
275 030	095847	01 03 01 02	87 g	50	pc(s)	43/51
275 110	095793	01 03 01 02	65 g	50	pc(s)	38/49
275 113	095816	01 03 01 02	82 g	50	pc(s)	38/49
275 116	095823	01 03 01 03	96 g	50	pc(s)	50
275 129	106758	01 07 01 01	21 g	10	pc(s)	164
275 160	095809	01 03 01 02	76 g	50	pc(s)	38/49
275 220	103450	01 07 01 01	18 g	25	pc(s)	121/139
275 220	103450	01 07 01 01	18 g	25	pc(s)	164
275 225	103467	01 07 01 01	18 g	1	pc(s)	139
275 229	102040	01 07 01 01	59 g	50	pc(s)	121/139
275 229	102040	01 07 01 01	59 g	50	pc(s)	164
275 230	095854	01 03 01 02	94 g	50	pc(s)	43/51
275 239	115811	01 07 01 01	73 g	1	pc(s)	139
275 240	152335	01 07 01 03	53 g	25	pc(s)	154
275 241	152342	01 07 01 03	53 g	25	pc(s)	154
275 242	152359	01 07 01 03	52 g	25	pc(s)	154
275 249	152366	01 07 01 03	56 g	25	pc(s)	154
275 250	155602	01 07 01 01	46 g	25	pc(s)	121/138
275 251	155619	01 07 01 01	46 g	25	pc(s)	121/138
275 252	155626	01 07 01 01	46 g	25	pc(s)	121/138
275 259	155633	01 07 01 01	49 g	25	pc(s)	121/138
275 260	095830	01 03 01 03	100 g	50	pc(s)	50
275 269	519213	01 07 01 05	34 g	25	pc(s)	154
275 319	229952	01 07 01 01	124 g	10	pc(s)	121
275 319	229952	01 07 01 01	124 g	10	pc(s)	138
275 320	099876	01 07 01 01	250 g	1	pc(s)	121/138
275 330	105065	01 07 01 01	218 g	1	pc(s)	122/138
275 333	105072	01 07 01 01	220 g	1	pc(s)	138
275 339	223332	01 07 01 01	247 g	1	pc(s)	154
275 359	223271	01 07 01 01	131 g	1	pc(s)	154
275 440	146914	01 07 01 01	152 g	10	pc(s)	140
275 441	146921	01 07 01 01	240 g	10	pc(s)	140
275 442	146938	01 07 01 01	250 g	10	pc(s)	140
275 444	244252	01 07 01 01	158 g	10	pc(s)	140
275 450	244436	01 07 01 01	168 g	10	pc(s)	156
275 451	244498	01 07 01 01	273 g	10	pc(s)	156
275 454	244504	01 07 01 01	173 g	10	pc(s)	156
275 455	244535	01 07 01 01	277 g	10	pc(s)	156
275 460	485921	01 07 01 04	138 g	10	pc(s)	117
275 461	485938	01 07 01 04	211 g	10	pc(s)	117
275 462	485952	01 07 01 04	214 g	10	pc(s)	117
275 464	485945	01 07 01 04	145 g	10	pc(s)	117
275 498	146945	01 07 01 01	320 g	10	pc(s)	117/140
275 498	146945	01 07 01 01	320 g	10	pc(s)	156
275 711	124233	01 03 01 02	37 g	50	pc(s)	42
275 716	124226	01 03 01 03	40 g	50	pc(s)	42
275 730	124219	01 03 01 02	42 g	50	pc(s)	42
276 006	023291	01 03 01 02	2 g	100	pc(s)	39
276 007	028166	01 03 01 02	2 g	100	pc(s)	39
276 009	083318	01 03 01 02	8 g	100	pc(s)	39
276 016	123373	01 03 01 02	3 g	100	pc(s)	39
276 017	126596	01 03 01 02	3 g	100	pc(s)	39
276 056	104983	01 06 01 01	2 g	100	pc(s)	12
276 057	104990	01 06 01 01	2 g	1	pc(s)	12
277 130	022669	01 03 01 02	28 g	50	pc(s)	207
277 230	110984	01 05 01 04	120 g	25	pc(s)	45/52

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277 230	110984	01 05 01 04	120 g	25 pc(s)	208
277 237	110991	01 05 01 04	123 g	25 pc(s)	45/52
277 237	110991	01 05 01 04	123 g	25 pc(s)	208
277 239	111004	01 05 01 04	113 g	25 pc(s)	45/52
277 239	111004	01 05 01 04	113 g	25 pc(s)	208
277 240	022577	01 05 01 04	167 g	25 pc(s)	45/52
277 240	022577	01 05 01 04	167 g	25 pc(s)	208
277 249	506251	01 05 01 04	137 g	25 pc(s)	45/52
277 249	506251	01 05 01 04	137 g	25 pc(s)	208
284 030	022485	01 03 01 02	54 g	100 pc(s)	43/51
284 040	022492	01 03 01 02	65 g	100 pc(s)	43/51
286 030	022508	01 03 01 02	60 g	50 pc(s)	43/51
286 139	035393	01 03 01 02	45 g	50 pc(s)	43/51
286 819	085824	01 03 01 02	70 g	50 pc(s)	38/48
290 001	027909	03 01 01 01	326 g	25 pc(s)	183
290 002	027893	03 01 01 01	89 g	50 pc(s)	183
297 015	023383	01 03 01 01	131 g	25 pc(s)	21
297 025	023390	01 03 01 01	5 g	100 pc(s)	21
297 110	100886	01 03 01 01	32 g	50 pc(s)	34
297 120	100916	01 03 01 01	40 g	50 pc(s)	34
297 130	492523	01 03 01 01	20 g	50 pc(s)	34
297 140	492530	01 03 01 01	28 g	50 pc(s)	34
300 002	024052	01 04 01 02	115 g	25 pc(s)	42/61
300 017	024069	01 04 01 02	154 g	1 pc(s)	42/61
301 000	067035	01 04 01 02	61 g	100 pc(s)	41/60
301 007	021358	01 04 01 02	75 g	100 pc(s)	41/60
301 009	081284	01 04 01 02	61 g	100 pc(s)	41/60
301 010	067028	01 04 01 02	61 g	100 pc(s)	41/60
301 010	067028	01 04 01 02	61 g	100 pc(s)	157/215
301 017	053502	01 04 01 02	79 g	100 pc(s)	41/60
301 017	053502	01 04 01 02	79 g	100 pc(s)	157/215
301 019	081277	01 04 01 02	63 g	100 pc(s)	41/60
301 020	481541	01 04 01 02	118 g	50 pc(s)	42/61
301 089	304161	01 04 01 02	61 g	100 pc(s)	41/60
301 099	304178	01 04 01 02	63 g	100 pc(s)	41/60
301 209	158252	01 04 01 02	59 g	1 pc(s)	74/157
301 209	158252	01 04 01 02	59 g	1 pc(s)	215
301 229	101562	01 07 01 01	167 g	1 pc(s)	42/61
301 229	101562	01 07 01 01	167 g	1 pc(s)	157/215
302 010	134904	01 04 01 01	137 g	50 pc(s)	42/61
305 000	041936	01 04 01 01	146 g	50 pc(s)	62
305 007	052307	01 04 01 01	151 g	50 pc(s)	62
306 020	096264	01 04 01 01	145 g	50 pc(s)	62
306 029	129467	01 04 01 01	120 g	50 pc(s)	62
306 100	024113	01 04 01 01	238 g	25 pc(s)	62
306 101	024120	01 04 01 01	412 g	25 pc(s)	62
306 105	269125	01 05 01 05	242 g	1 pc(s)	214
306 106	269149	01 05 01 05	420 g	1 pc(s)	214
306 121	284920	03 01 01 01	161 g	50 pc(s)	62/180
306 122	284937	03 01 01 01	165 g	50 pc(s)	62/180
306 200	327368	01 05 01 05	74 g	50 pc(s)	219
306 201	327375	01 05 01 05	74 g	50 pc(s)	219
306 202	327351	01 05 01 05	71 g	50 pc(s)	219
306 203	327382	01 05 01 05	74 g	50 pc(s)	219
306 204	336766	01 05 01 05	75 g	50 pc(s)	219
306 205	336773	01 05 01 05	73 g	50 pc(s)	219
306 206	336780	01 05 01 05	71 g	50 pc(s)	219
306 210	327399	01 05 01 05	356 g	15 pc(s)	219
306 211	327405	01 05 01 05	340 g	15 pc(s)	219
306 212	327412	01 05 01 05	314 g	15 pc(s)	219
306 213	327429	01 05 01 05	392 g	15 pc(s)	219
306 220	327436	01 05 01 05	394 g	50 pc(s)	220
306 230	327443	01 05 01 05	11 g	10 pc(s)	220
306 231	327450	01 05 01 05	11 g	10 pc(s)	220
306 240	327467	01 05 01 05	2 g	20 pc(s)	220
307 000	024151	01 04 01 01	105 g	50 pc(s)	62
307 007	024168	01 04 01 01	104 g	50 pc(s)	62
308 025	035881	03 01 01 01	100 g	50 pc(s)	179
308 026	035874	03 01 01 01	107 g	25 pc(s)	179
308 030	030749	03 01 01 01	125 g	50 pc(s)	179
308 031	136571	03 01 01 01	230 g	25 pc(s)	180
308 032	152823	03 01 01 01	169 g	25 pc(s)	180
308 033	519978	03 01 01 01	231 g	25 pc(s)	180
308 035	123472	03 01 01 01	165 g	25 pc(s)	174/179
308 036	136588	03 01 01 01	266 g	25 pc(s)	180
308 037	154704	03 01 01 01	208 g	25 pc(s)	180
308 040	055902	03 01 01 01	450 g	20 pc(s)	60/179
308 041	056411	03 01 01 01	471 g	20 pc(s)	60/179
308 044	522992	03 01 01 01	470 g	20 pc(s)	60
308 045	124455	03 01 01 01	262 g	25 pc(s)	179
308 046	124462	03 01 01 01	288 g	25 pc(s)	174/179
308 060	066281	03 01 01 01	138 g	50 pc(s)	65
308 062	344051	03 01 01 01	156 g	50 pc(s)	65/182
308 069	246720	03 01 01 01	138 g	50 pc(s)	65
308 120	099258	03 01 01 01	134 g	25 pc(s)	180
308 129	099265	03 01 01 01	131 g	25 pc(s)	180
308 130	288942	03 01 01 01	18 g	50 pc(s)	178
308 131	288881	03 01 01 01	18 g	50 pc(s)	178
308 132	288423	03 01 01 01	20 g	50 pc(s)	178
308 133	288911	03 01 01 01	20 g	50 pc(s)	178
308 134	308091	03 01 01 01	18 g	50 pc(s)	178
308 135	308107	03 01 01 01	18 g	50 pc(s)	178
308 136	308114	03 01 01 01	18 g	50 pc(s)	178
308 137	308121	03 01 01 01	18 g	50 pc(s)	178
308 140	288935	03 01 01 01	21 g	50 pc(s)	178
308 141	288904	03 01 01 01	19 g	50 pc(s)	178
308 142	288522	03 01 01 01	18 g	50 pc(s)	178
308 143	289123	03 01 01 01	18 g	50 pc(s)	178
308 150	106970	03 01 01 01	682 g	1 pc(s)	183
308 220	084216	03 01 01 01	250 g	25 pc(s)	65/182
308 229	083745	03 01 01 01	190 g	25 pc(s)	65/182
308 230	090859	03 01 01 01	241 g	25 pc(s)	65/182
308 239	090866	03 01 01 01	197 g	25 pc(s)	65/182
308 249	129313	03 01 01 01	200 g	25 pc(s)	65/182
308 320	028531	03 01 01 01	266 g	25 pc(s)	65/182
308 329	081338	03 01 01 01	220 g	25 pc(s)	65/167
308 329	081338	03 01 01 01	220 g	25 pc(s)	182
308 330	096660	03 01 01 01	266 g	25 pc(s)	65/182
308 403	070509	04 02 10 01	26 g	10 pc(s)	349
308 404	070516	04 02 10 01	32 g	10 pc(s)	349
308 405	070523	04 02 10 01	37 g	10 pc(s)	349
308 406	070530	04 02 10 01	49 g	10 pc(s)	349
308 407	070547	04 02 10 01	60 g	10 pc(s)	349
308 408	070554	04 02 10 01	73 g	10 pc(s)	349
308 411	070578	04 02 10 01	56 g	5 pc(s)	349
308 421	070561	04 02 10 50	974 g	10 pc(s)	349
308 425	058798	04 02 10 01	19 g	10 pc(s)	349
309 008	024229	01 04 01 01	140 g	50 pc(s)	61
309 087	024243	01 04 01 01	99 g	50 pc(s)	61
310 008	024328	01 04 01 01	124 g	50 pc(s)	61
314 300	096400	01 04 01 01	120 g	50 pc(s)	63
314 307	096417	01 04 01 01	132 g	50 pc(s)	63
314 310	042841	01 04 01 01	174 g	50 pc(s)	63
315 119	134072	01 04 01 01	90 g	50 pc(s)	61
318 033	021471	03 01 01 01	236 g	25 pc(s)	64
318 201	021464	03 01 01 01	234 g	25 pc(s)	64

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318 203	159914	03 01 01 01	329 g	1 pc(s)	64
318 205	159921	03 01 01 01	242 g	25 pc(s)	64
318 207	021488	03 01 01 01	253 g	1 pc(s)	64
318 209	035973	03 01 01 01	245 g	25 pc(s)	64
318 219	129320	03 01 01 01	235 g	25 pc(s)	64
318 229	159938	03 01 01 01	323 g	25 pc(s)	64
318 233	096646	03 01 01 01	225 g	25 pc(s)	64
318 239	159945	03 01 01 01	240 g	25 pc(s)	64
318 251	046559	03 01 01 01	241 g	25 pc(s)	64
319 201	024519	03 01 01 01	320 g	25 pc(s)	63
319 202	024526	03 01 01 01	333 g	25 pc(s)	64
319 207	020047	03 01 01 01	349 g	25 pc(s)	63
319 209	035980	03 01 01 01	313 g	25 pc(s)	63
319 219	069916	03 01 01 01	319 g	25 pc(s)	64
319 229	108752	03 01 01 01	409 g	25 pc(s)	63
320 044	021501	03 01 01 01	301 g	25 pc(s)	64
321 045	021518	03 01 01 01	413 g	25 pc(s)	63
321 047	021525	03 01 01 01	453 g	25 pc(s)	63
338 000	024847	01 04 01 02	171 g	25 pc(s)	69
338 001	054172	01 04 01 02	68 g	25 pc(s)	69
338 007	024854	01 04 01 02	190 g	25 pc(s)	69
338 009	057982	01 04 01 02	136 g	25 pc(s)	69
339 010	024823	01 04 01 02	195 g	25 pc(s)	69
339 050	096257	01 04 01 02	138 g	25 pc(s)	68
339 051	127388	01 04 01 02	95 g	25 pc(s)	68
339 057	096332	01 04 01 02	150 g	25 pc(s)	68
339 059	096301	01 04 01 02	132 g	25 pc(s)	68
339 060	046870	01 04 01 02	133 g	25 pc(s)	68
339 061	127395	01 04 01 02	83 g	25 pc(s)	68
339 067	046887	01 04 01 02	136 g	25 pc(s)	68
339 069	079960	01 04 01 02	122 g	25 pc(s)	68
339 100	092068	01 04 01 02	180 g	25 pc(s)	68
339 101	092082	01 04 01 02	84 g	1 pc(s)	68
339 110	092105	01 04 01 02	176 g	25 pc(s)	68
339 111	092129	01 04 01 02	92 g	25 pc(s)	68
339 157	096325	01 04 01 02	142 g	25 pc(s)	69
339 167	034426	01 04 01 02	140 g	1 pc(s)	69
343 000	024861	01 04 01 02	167 g	25 pc(s)	69
343 007	024878	01 04 01 02	180 g	1 pc(s)	69
345 008	025073	01 04 01 02	27 g	100 pc(s)	70
345 010	025080	01 04 01 02	25 g	100 pc(s)	70
347 205	136601	01 04 01 02	25 g	100 pc(s)	70
363 000	045750	01 04 01 02	66 g	50 pc(s)	175
363 010	045743	01 04 01 02	124 g	50 pc(s)	175
365 010	096318	01 04 01 02	107 g	50 pc(s)	67
365 011	528826	01 04 01 02	52 g	50 pc(s)	67
365 017	096349	01 04 01 02	105 g	50 pc(s)	67
365 019	096295	01 04 01 02	83 g	50 pc(s)	67
365 020	035126	01 04 01 02	120 g	50 pc(s)	67
365 027	035133	01 04 01 02	146 g	50 pc(s)	67
365 030	046894	01 04 01 02	100 g	50 pc(s)	67
365 031	055438	01 04 01 02	49 g	50 pc(s)	67
365 037	046900	01 04 01 02	103 g	50 pc(s)	67
365 039	057777	01 04 01 02	89 g	50 pc(s)	67
365 050	091825	01 04 01 02	155 g	50 pc(s)	68
365 051	091832	01 04 01 02	75 g	50 pc(s)	68
365 057	091849	01 04 01 02	165 g	50 pc(s)	68
365 059	091856	01 04 01 02	134 g	50 pc(s)	33/68
365 117	035331	01 04 01 02	115 g	50 pc(s)	67
365 127	080317	01 04 01 02	104 g	1 pc(s)	67
365 220	096103	01 04 01 02	171 g	50 pc(s)	68
365 221	092396	01 04 01 02	91 g	50 pc(s)	68
365 227	096127	01 04 01 02	197 g	50 pc(s)	68
365 229	096110	01 04 01 02	161 g	50 pc(s)	68
365 250	148307	01 04 01 02	83 g	50 pc(s)	205
365 419	128927	01 04 01 03	458 g	5 pc(s)	25
365 509	141773	01 04 01 03	335 g	1 pc(s)	25
365 519	130869	01 04 01 03	333 g	1 pc(s)	25
371 007	024663	01 04 01 02	231 g	1 pc(s)	66
371 009	024656	01 04 01 02	208 g	20 pc(s)	66
372 018	104624	01 04 01 02	158 g	25 pc(s)	67
372 019	104631	01 04 01 02	154 g	25 pc(s)	67
372 035	104648	01 04 01 02	177 g	25 pc(s)	67
372 110	119055	01 04 01 02	283 g	25 pc(s)	66
372 119	119178	01 04 01 02	277 g	25 pc(s)	66
372 120	119062	01 04 01 02	288 g	25 pc(s)	66
372 129	119185	01 04 01 02	280 g	25 pc(s)	66
372 140	119086	01 04 01 02	336 g	25 pc(s)	66
372 149	119208	01 04 01 02	326 g	25 pc(s)	66
372 150	119093	01 04 01 02	339 g	25 pc(s)	66
372 159	119215	01 04 01 02	333 g	25 pc(s)	66
372 169	463660	01 04 01 02	280 g	10 pc(s)	216
372 179	463684	01 04 01 02	333 g	10 pc(s)	216
372 210	119116	01 04 01 02	284 g	25 pc(s)	66
372 219	119239	01 04 01 02	278 g	25 pc(s)	66
372 220	119123	01 04 01 02	288 g	25 pc(s)	66
372 229	119246	01 04 01 02	283 g	25 pc(s)	66
372 240	119147	01 04 01 02	335 g	25 pc(s)	66
372 249	119260	01 04 01 02	326 g	1 pc(s)	66
372 250	119154	01 04 01 02	338 g	25 pc(s)	66
372 259	119277	01 04 01 02	331 g	25 pc(s)	66
372 269	463677	01 04 01 02	281 g	10 pc(s)	216
372 279	463691	01 04 01 02	332 g	10 pc(s)	216
374 011	030701	01 04 01 03	80 g	25 pc(s)	22
374 020	030725	01 04 01 03	37 g	50 pc(s)	22
377 005	024908	01 04 01 02	22 g	50 pc(s)	69
377 006	024922	01 04 01 03	37 g	50 pc(s)	23
377 007	092686	01 04 01 03	107 g	10 pc(s)	23
377 009	119284	01 04 01 02	52 g	50 pc(s)	69
377 015	092693	01 04 01 03	36 g	10 pc(s)	23
377 016	083417	01 04 01 03	36 g	50 pc(s)	23
377 017	024915	01 04 01 02	49 g	50 pc(s)	69
377 026	068582	01 04 01 03	45 g	50 pc(s)	23
377 027	034204	01 04 01 03	112 g	50 pc(s)	23
377 045	099296	01 04 01 03	36 g	100 pc(s)	23
377 100	078604	01 04 01 02	74 g	50 pc(s)	69
377 107	092709	01 04 01 03	172 g	10 pc(s)	23
377 115	092716	01 04 01 03	59 g	10 pc(s)	23
377 200	136465	01 04 01 02	70 g	50 pc(s)	69
377 201	525122	01 04 01 02	118 g	50 pc(s)	69
377 209	525139	01 04 01 02	112 g	50 pc(s)	69
377 210	083028	01 04 01 03	53 g	10 pc(s)	24
377 216	494565	01 04 01 03	412 g	1 pc(s)	24
377 217	494572	01 04 01 03	412 g	1 pc(s)	24
377 225	494589	01 04 01 03	559 g	1 pc(s)	24
377 226	494596	01 04 01 03	559 g	1 pc(s)	24
377 235	494602	01 04 01 03	937 g	1 pc(s)	24
377 236	494619	01 04 01 03	937 g	1 pc(s)	24
377 250	494725	01 04 01 03	1.02 kg	1 pc(s)	24
377 251	494732	01 04 01 03	1.02 kg	1 pc(s)	24
377 270	494749	01 04 01 03	1.40 kg	1 pc(s)	24
377 271	494756	01 04 01 03	1.40 kg	1 pc(s)	24
377 310	033382	01 04 01 03	72 g	100 pc(s)	24
377 316	522459	01 04 01 03	412 g	1 pc(s)	24
377 325	522466	01 04 01 03	559 g	1 pc(s)	24
377 335	522473	01 04 01 03	937.30 kg	1 pc(s)	24
377 350	522480	01 04 01 03	1.02 kg	1 pc(s)	24
377 370	522497	01 04 01 03	1.40 kg	1 pc(s)	24

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Part No.	GTIN*	PG	Weight	PU	SU	Page
377 410	083035	01 04 01 03	90 g	10	pc(s)	24
377 510	033399	01 04 01 03	110 g	10	pc(s)	24
380 020	066373	01 04 01 01	86 g	50	pc(s)	70
380 029	066359	01 04 01 01	70 g	50	pc(s)	70
380 110	133273	01 04 01 01	100 g	50	pc(s)	70
380 116	133280	01 04 01 01	100 g	50	pc(s)	70
380 129	150416	01 04 01 02	100 g	50	pc(s)	70
380 209	158269	01 04 01 02	102 g	1	pc(s)	74/157
380 209	158269	01 04 01 02	102 g	1	pc(s)	215
385 202	068131	01 04 01 01	69 g	50	pc(s)	62
385 203	035669	01 04 01 01	64 g	50	pc(s)	62
385 207	049093	01 04 01 01	64 g	50	pc(s)	63
385 213	090873	01 04 01 01	38 g	50	pc(s)	63
385 216	100565	01 04 01 01	133 g	10	pc(s)	70
390 050	095991	01 04 01 01	99 g	50	pc(s)	57/179
390 051	096219	01 04 01 01	55 g	50	pc(s)	57
390 057	096073	01 04 01 01	118 g	50	pc(s)	57
390 059	096004	01 04 01 01	92 g	50	pc(s)	57
390 060	096011	01 04 01 01	108 g	50	pc(s)	58
390 061	096196	01 04 01 01	67 g	50	pc(s)	58
390 063	159396	01 04 01 01	103 g	50	pc(s)	58
390 067	096080	01 04 01 01	122 g	50	pc(s)	58
390 079	128996	01 04 01 01	96 g	50	pc(s)	57/166
390 110	104921	01 04 01 02	18 g	100	pc(s)	39
390 119	104945	01 04 01 02	18 g	100	pc(s)	39
390 120	346901	01 03 01 02	12 g	50	pc(s)	39
390 121	346918	01 03 01 02	20 g	50	pc(s)	39
390 122	346925	01 03 01 02	18 g	50	pc(s)	39
390 150	032187	01 04 01 02	53 g	100	pc(s)	41/60
390 157	032194	01 04 01 02	53 g	1	pc(s)	41/60
390 159	032200	01 04 01 02	61 g	100	pc(s)	41/60
390 209	158245	01 04 01 01	104 g	1	pc(s)	74/157
390 209	158245	01 04 01 01	104 g	1	pc(s)	215
390 250	031791	01 04 01 01	74 g	50	pc(s)	59
390 257	031807	01 04 01 01	78 g	50	pc(s)	59
390 259	031814	01 04 01 01	71 g	50	pc(s)	59
390 267	034402	01 04 01 01	79 g	50	pc(s)	59
390 479	035324	01 04 01 02	74 g	50	pc(s)	175
390 499	127517	01 04 01 02	57 g	50	pc(s)	175
390 550	096042	01 04 01 01	90 g	50	pc(s)	57/180
390 551	096202	01 04 01 01	58 g	50	pc(s)	57
390 553	522787	01 04 01 01	96 g	50	pc(s)	57
390 557	096097	01 04 01 01	118 g	50	pc(s)	57
390 559	096035	01 04 01 01	98 g	50	pc(s)	57
390 565	385313	01 04 01 01	50 g	50	pc(s)	59
390 657	096165	01 04 01 01	100 g	50	pc(s)	58
391 050	087064	01 04 01 01	101 g	50	pc(s)	57/179
391 058	293236	01 04 01 01	98 g	50	pc(s)	57
391 059	087071	01 04 01 01	98 g	50	pc(s)	57
391 060	088009	01 04 01 01	113 g	50	pc(s)	58
391 066	288577	01 04 01 01	111 g	50	pc(s)	58
391 068	385320	01 04 01 01	114 g	50	pc(s)	58
391 069	087095	01 04 01 01	106 g	50	pc(s)	58
391 070	487123	01 04 01 01	103 g	50	pc(s)	59/181
391 079	487130	01 04 01 01	93 g	50	pc(s)	59/181
391 550	088016	01 04 01 01	105 g	50	pc(s)	57
391 559	087088	01 04 01 01	100 g	50	pc(s)	57
392 050	096066	01 04 01 01	121 g	50	pc(s)	58/70
392 059	096059	01 04 01 01	119 g	50	pc(s)	58/70
392 060	096141	01 04 01 01	130 g	50	pc(s)	58/71
392 069	096158	01 04 01 01	126 g	50	pc(s)	58/71
392 209	158238	01 04 01 01	140 g	1	pc(s)	74/157
392 209	158238	01 04 01 01	140 g	1	pc(s)	215
393 069	094079	01 04 01 01	150 g	50	pc(s)	102

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405 020	098459	01 07 01 01	81 g	1	Stk.	136
407 012	026100	01 05 01 02	432 g	10	pc(s)	204
407 034	026117	01 05 01 02	443 g	10	pc(s)	204
407 100	026124	01 05 01 02	457 g	10	pc(s)	204
407 112	026148	01 05 01 02	502 g	10	pc(s)	204
407 114	026131	01 05 01 02	480 g	10	pc(s)	204
407 200	026162	01 05 01 02	556 g	1	pc(s)	204
410 003	028722	03 07 01 01	105 g	1	pc(s)	226
410 005	028715	03 07 01 01	120 g	1	pc(s)	226
410 006	028708	03 07 01 01	140 g	1	pc(s)	226
410 010	028692	03 07 01 01	190 g	1	pc(s)	226
410 012	026186	01 05 01 02	234 g	25	pc(s)	204
410 015	028685	03 07 01 01	248 g	1	pc(s)	226
410 020	028678	03 07 01 01	300 g	1	pc(s)	226
410 025	028661	03 07 01 01	370 g	1	pc(s)	226
410 030	028654	03 07 01 01	438 g	1	pc(s)	226
410 034	026247	01 05 01 02	231 g	25	pc(s)	204
410 035	028647	03 07 01 01	490 g	1	pc(s)	226
410 038	026223	01 05 01 02	211 g	25	pc(s)	204
410 040	028630	03 07 01 01	550 g	1	pc(s)	226
410 050	028623	03 07 01 01	680 g	1	pc(s)	226
410 060	028616	03 07 01 01	800 g	1	pc(s)	226
410 070	028609	03 07 01 01	920 g	1	pc(s)	226
410 099	028593	03 07 01 01	1.27 kg	1	pc(s)	226
410 100	026254	01 05 01 02	246 g	25	pc(s)	204
410 112	026278	01 05 01 02	296 g	25	pc(s)	204
410 114	026261	01 05 01 02	276 g	25	pc(s)	204
410 134	026285	01 05 01 02	312 g	1	pc(s)	204
410 140	028586	03 07 01 01	1.78 kg	1	pc(s)	226
410 150	028579	03 07 01 01	1.87 kg	1	pc(s)	226
410 199	028562	03 07 01 01	2.48 kg	1	pc(s)	226
410 200	026292	01 05 01 02	324 g	25	pc(s)	204
410 212	026308	01 05 01 02	402 g	1	pc(s)	204/206
410 222	482289	01 07 01 04	42 g	1	pc(s)	115
410 229	107731	01 07 01 01	72 g	1	pc(s)	130
410 239	152465	01 07 01 01	80 g	1	pc(s)	147
410 299	028555	03 07 01 01	3.66 kg	1	pc(s)	226
410 300	026315	01 05 01 02	416 g	1	pc(s)	204/206
410 309	081451	01 05 01 02	180 g	1	pc(s)	205
410 319	081505	01 05 01 02	188 g	25	pc(s)	205
410 329	081512	01 05 01 02	192 g	25	pc(s)	205
410 339	081550	01 05 01 02	206 g	25	pc(s)	205
410 349	081604	01 05 01 02	232 g	1	pc(s)	205
410 359	081468	01 05 01 02	248 g	1	pc(s)	205
410 369	081529	01 05 01 02	260 g	25	pc(s)	205
410 379	081475	01 05 01 02	272 g	1	pc(s)	205
410 389	081482	01 05 01 02	315 g	1	pc(s)	205
410 399	081499	01 05 01 02	360 g	1	pc(s)	205
410 401	029200	03 07 01 01	90 g	1	pc(s)	228
410 403	029194	03 07 01 01	109 g	1	pc(s)	228
410 404	029187	03 07 01 01	122 g	1	pc(s)	228
410 405	029262	03 07 01 01	140 g	1	pc(s)	228
410 406	029163	03 07 01 01	147 g	1	pc(s)	228
410 407	029255	03 07 01 01	145 g	1	pc(s)	228
410 410	029248	03 07 01 01	200 g	1	pc(s)	228
410 411	029156	03 07 01 01	197 g	1	pc(s)	228
410 413	029279	03 07 01 01	110 g	1	pc(s)	228
410 415	029149	03 07 01 01	261 g	1	pc(s)	228
410 416	029231	03 07 01 01	250 g	1	pc(s)	228
410 420	029132	03 07 01 01	320 g	1	pc(s)	228
410 421	029224	03 07 01 01	320 g	1	pc(s)	228
410 425	029125	03 07 01 01	385 g	1	pc(s)	228
410 426	029217	03 07 01 01	370 g	1	pc(s)	228
410 430	029118	03 07 01 01	445 g	1	pc(s)	228
410 431	029590	03 07 01 01	430 g	1	pc(s)	228
410 450	029170	03 07 01 01	135 g	1	pc(s)	228
410 503	029408	03 07 01 01	100 g	1	pc(s)	228
410 506	029415	03 07 01 01	116 g	1	pc(s)	228
410 510	029422	03 07 01 01	185 g	1	pc(s)	228

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410 515	029439	03 07 01 01	250 g	1	pc(s)	228
410 520	029446	03 07 01 01	300 g	1	pc(s)	228
410 525	029453	03 07 01 01	365 g	1	pc(s)	228
410 530	029460	03 07 01 01	425 g	1	pc(s)	228
410 603	029330	03 07 01 01	100 g	1	pc(s)	226
410 605	029347	03 07 01 01	120 g	1	pc(s)	226
410 606	029491	03 07 01 01	114 g	1	pc(s)	231
410 610	029354	03 07 01 01	185 g	1	pc(s)	226
410 615	029361	03 07 01 01	240 g	1	pc(s)	226
410 620	029378	03 07 01 01	305 g	1	pc(s)	226
410 625	029385	03 07 01 01	365 g	1	pc(s)	226
410 630	029392	03 07 01 01	430 g	1	pc(s)	226
410 720	032415	03 07 01 01	292 g	1	pc(s)	231
410 903	029033	03 07 01 01	110 g	1	pc(s)	230
410 905	029040	03 07 01 01	140 g	1	pc(s)	230
410 906	029057	03 07 01 01	140 g	1	pc(s)	230
410 910	029064	03 07 01 01	200 g	1	pc(s)	230
410 915	029071	03 07 01 01	260 g	1	pc(s)	230
410 920	029088	03 07 01 01	320 g	1	pc(s)	230
410 925	029095	03 07 01 01	380 g	1	pc(s)	230
410 930	029101	03 07 01 01	440 g	1	pc(s)	230
416 003	028937	03 07 01 01	126 g	1	pc(s)	227
416 005	028920	03 07 01 01	165 g	1	pc(s)	227
416 006	028913	03 07 01 01	184 g	1	pc(s)	227
416 010	028906	03 07 01 01	262 g	1	pc(s)	227
416 015	028890	03 07 01 01	360 g	1	pc(s)	227
416 016	029484	03 07 01 01	340 g	1	pc(s)	231
416 020	028883	03 07 01 01	460 g	1	pc(s)	227
416 025	028876	03 07 01 01	545 g	1	pc(s)	227
416 030	028869	03 07 01 01	650 g	1	pc(s)	227
416 035	028852	03 07 01 01	748 g	1	pc(s)	227
416 040	028845	03 07 01 01	830 g	1	pc(s)	227
416 050	028838	03 07 01 01	1.04 kg	1	pc(s)	227
416 060	028821	03 07 01 01	1.24 kg	1	pc(s)	227
416 070	028814	03 07 01 01	1.44 kg	1	pc(s)	227
416 080	028807	03 07 01 01	1.60 kg	1	pc(s)	227
416 100	042933	03 07 01 01	2.01 kg	1	pc(s)	227
416 120	028791	03 07 01 01	2.43 kg	1	pc(s)	227
416 140	028784	03 07 01 01	2.73 kg	1	pc(s)	227
416 150	028777	03 07 01 01	3.01 kg	1	pc(s)	227
416 200	028760	03 07 01 01	3.95 kg	1	pc(s)	227
416 220	028753	03 07 01 01	4.38 kg	1	pc(s)	227
416 280	028746	03 07 01 01	5.64 kg	1	pc(s)	227
416 300	028739	03 07 01 01	5.94 kg	1	pc(s)	227
416 403	029286	03 07 01 01	130 g	1	pc(s)	229
416 410	032422	03 07 01 01	265 g	1	pc(s)	229
416 411	032545	03 07 01 01	266 g	1	pc(s)	229/347
416 415	032439	03 07 01 01	364 g	1	pc(s)	229
416 416	032453	03 07 01 01	364 g	1	pc(s)	229
416 420	032446	03 07 01 01	464 g	1	pc(s)	229
416 421	036116	03 07 01 01	461 g	1	pc(s)	229
416 425	032460	03 07 01 01	558 g	1	pc(s)	229
416 426	032477	03 07 01 01	558 g	1	pc(s)	229
416 430	032484	03 07 01 01	654 g	1	pc(s)	229
416 431	032491	03 07 01 01	655 g	1	pc(s)	229
416 440	032507	03 07 01 01	849 g	1	pc(s)	229
416 441	032514	03 07 01 01	849 g	1	pc(s)	229
416 450	032521	03 07 01 01	1.04 kg	1	pc(s)	229
416 451	032538	03 07 01 01	1.04 kg	1	pc(s)	229
416 505	029477	03 07 01 01	158 g	1	pc(s)	229
416 516	032408	03 07 01 01	341 g	1	pc(s)	227
416 903	028944	03 07 01 01	132 g	1	pc(s)	230
416 905	028951	03 07 01 01	180 g	1	pc(s)	230
416 906	028968	03 07 01 01	190 g	1	pc(s)	230
416 910	028975	03 07 01 01	265 g	1	pc(s)	230
416 915	028982	03 07 01 01	365 g	1	pc(s)	230
416 920	028999	03 07 01 01	455 g	1	pc(s)	230
416 925	029002	03 07 01 01	550 g	1	pc(s)	230
416 930	029019	03 07 01 01	660 g	1	pc(s)	230
416 940	360280	03 01 01 01	513 g	25	pc(s)	173/174
416 941	360273	03 01 01 01	497 g	25	pc(s)	174
416 950	508620	03 01 01 01	650 g	25	pc(s)	173/174
416 970	029026	03 07 01 01	1.46 kg	1	pc(s)	230
417 005	031982	03 07 01 01	168 g	1	pc(s)	227
417 010	031975	03 07 01 01	259 g	1	pc(s)	227
417 015	031968	03 07 01 01	353 g	1	pc(s)	227
417 020	031951	03 07 01 01	447 g	1	pc(s)	227
417 030	031944	03 07 01 01	635 g	1	pc(s)	227
417 050	031937	03 07 01 01	1.01 kg	1	pc(s)	227
417 100	031920	03 07 01 01	1.95 kg	1	pc(s)	227
417 115	031913	03 07 01 01	2.89 kg	1	pc(s)	227
417 120	031906	03 07 01 01	3.83 kg	1	pc(s)	227
417 125	031890	03 07 01 01	4.77 kg	1	pc(s)	227
417 130	031883	03 07 01 01	5.71 kg	1	pc(s)	227
417 150	031876	03 07 01 01	9.47 kg	1	pc(s)	227
419 000	439412	03 09 01 01	840 g	1	pc(s)	234
419 001	439429	03 09 01 01	950 g	1	pc(s)	234
419 002	439436	03 09 01 01	1.05 kg	1	pc(s)	234
419 010	439443	03 09 01 01	760 g	1	pc(s)	234
419 011	439450	03 09 01 01	740 g	1	pc(s)	235
419 012	439467	03 09 01 01	1.46 kg	1	pc(s)	235
419 020	439405	03 09 01 01	950 g	1	pc(s)	235
419 030	439474	03 09 01 01	750 g	1	pc(s)	235
419 040	439481	03 09 01 01	630 g	1	pc(s)	236
419 041	439498	03 09 01 01	560 g	1	pc(s)	236
419 050	439504	03 09 01 01	710 g	1	pc(s)	236
419 051	439511	03 09 01 01	640 g	1	pc(s)	236
419 060	439528	03 09 01 01	590 g	1	pc(s)	236
419 061	439535	03 09 01 01	530 g	1	pc(s)	236
419 070	439542	03 09 01 01	700 g	1	pc(s)	236
419 071	439559	03 09 01 01	620 g	1	pc(s)	236
419 080	439566	03 09 01 01	1 kg	1	pc(s)	236
419 090	439573	03 09 01 01	2.80 kg	1	pc(s)	237
419 091	439580	03 09 01 01	570 g	1	pc(s)	237
419 100	439597	03 09 01 01	700 g	1	pc(s)	237
419 101	439603	03 09 01 01	640 g	1	pc(s)	237
419 110	439665	03 09 01 01	530 g	1	pc(s)	237
419 160	510203	03 09 01 01	698 g	8	pc(s)	234
419 260	439610	03 09 01 02	630 g	1	pc(s)	237
419 290	439627	03 09 01 01	390 g	1	pc(s)	238
419 291	439634	03 09 01 01	410 g	1	pc(s)	238
419 400	439672	03 09 01 02	700 g	1	pc(s)	238
419 500	458383	03 09 01 01	205 g	1	pc(s)	234
419 501	458390	03 09 01 01	980 g	1	pc(s)	236
419 502	458406	03 09 01 01	1.40 kg	1	pc(s)	236
419 503	458413	03 09 01 01	2.10 kg	1	pc(s)	236
419 504	458420	03 09 01 01	2.80 kg	1	pc(s)	236
419 505	458437	03 09 01 01	1.12 kg	1	pc(s)	237
419 506	458444	03 09 01 01	1.10 kg	1	pc(s)	237
419 507	458451	03 09 01 02	280 g	1	pc(s)	238
419 508	458468	03 09 01 02	640 g	1	pc(s)	238
419 511	480513	03 09 01 01	390 g	1	pc(s)	238
419 512	480520	03 09 01 01	410 g	1	pc(s)	238
419 513	480506	03 09 01 01	390 g	1	pc(s)	238
419 514	480537	03 09 01 01	390 g	1	pc(s)	238
419 750	486898	03 09 01 04	162 g	50	pc(s)	239
419 751	459892	03 01 01 01	169 g	50	pc(s)	239
419 752	463172	02 01 01 01	1.80 kg	10	pc(s)	239
419 753	506053	02 01 01 01	9.76 kg	1	pc(s)	239
419 758	505940	03 09 01 03	15.75 kg	1	pc(s)	240
419 759	505995	03 09 01 03	31.50 kg	1	pc(s)	240
419 760	505964	03 09 01 02	121 g	3	pc(s)	240
419 761	506367	03 09 01 02	219 g	3	pc(s)	240
419 762	506374	03 09 01 02	129 g	3	pc(s)	240
419 763	506381	03 09 01 02	224 g	3	pc(s)	240
419 765	506404	03 09 01 03	84 g	3	pc(s)	240
419 766	506411	03 09 01 03	84 g	3	pc(s)	240
419 900	439641	03 09 01 03	2 g	1	pc(s)	239
419 901	439658	03 09 01 03	3 g	1	pc(s)	239

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419 902	439689	03 09 01 03	77 g	1	pc(s)	239
419 903	439696	03 09 01 03	34 g	1	pc(s)	239
419 904	439702	03 09 01 03	9 g	1	pc(s)	239
420 100	022805	01 04 01 04	137 g	50	pc(s)	40/206
420 107	045828	01 04 01 04	158 g	1	pc(s)	40/206
420 120	022829	01 04 01 04	160 g	1	pc(s)	40/206
420 127	045804	01 04 01 04	186 g	1	pc(s)	40/206
420 207	045873	01 04 01 04	215 g	1	pc(s)	40/207
423 010	054325	01 04 01 04	113 g	50	pc(s)	41/207
423 011	054332	01 04 01 04	48 g	50	pc(s)	41/207
423 017	054349	01 04 01 04	119 g	1	pc(s)	41/207
423 019	054356	01 04 01 04	109 g	50	pc(s)	41/207
423 020	054288	01 04 01 04	138 g	50	pc(s)	41/207
423 021	054295	01 04 01 04	61 g	50	pc(s)	41/207
423 027	054301	01 04 01 04	156 g	50	pc(s)	41/207
423 029	054318	01 04 01 04	151 g	50	pc(s)	41/207
425 076	022683	01 04 01 04	208 g	50	pc(s)	206
425 089	022706	01 04 01 04	231 g	1	pc(s)	206
435 803	029781	03 07 01 01	468 g	1	pc(s)	232
435 805	029798	03 07 01 01	317 g	1	pc(s)	232
444 006	029323	03 07 01 01	29 g	100	pc(s)	231
444 008	029293	03 07 01 01	36 g	1	pc(s)	231
444 009	029309	03 07 01 01	36 g	1	pc(s)	231
444 010	029316	03 07 01 01	34 g	100	pc(s)	231
444 050	291218	03 07 01 01	24 g/PAK	1	PAK	130/147
450 000	025158	01 04 01 03	122 g	50	pc(s)	73
450 001	090903	01 04 01 03	62 g	50	pc(s)	73
450 007	025165	01 04 01 03	133 g	1	pc(s)	73
450 011	025172	01 04 01 03	134 g	50	pc(s)	73
450 101	094093	01 04 01 03	44 g	50	pc(s)	73
453 100	025523	01 04 01 03	333 g	10	pc(s)	52
454 000	025387	01 04 01 03	261 g	25	pc(s)	73
454 100	035904	01 04 01 03	177 g	25	pc(s)	73
454 107	035911	01 04 01 03	198 g	25	pc(s)	73
455 000	025394	01 04 01 03	250 g	1	pc(s)	73
459 000	025189	01 04 01 03	127 g	50	pc(s)	72
459 003	025202	01 04 01 03	126 g	50	pc(s)	72
459 010	099838	01 04 01 03	110 g	1	pc(s)	72
459 019	031272	01 04 01 03	87 g	50	pc(s)	72
459 020	099845	01 04 01 03	103 g	50	pc(s)	72
459 029	047587	01 04 01 03	87 g	50	pc(s)	72
459 030	099852	01 04 01 03	101 g	50	pc(s)	72
459 039	047594	01 04 01 03	88 g	50	pc(s)	72
459 119	051379	01 04 01 03	124 g	50	pc(s)	72
459 127	119291	01 04 01 03	152 g	1	pc(s)	71
459 129	051386	01 04 01 03	120 g	50	pc(s)	71/167
459 139	078628	01 04 01 03	122 g	50	pc(s)	71
459 159	152830	01 04 01 03	122 g	50	pc(s)	72
459 200	155527	01 04 01 03	132 g	1	pc(s)	74/157
459 200	155527	01 04 01 03	132 g	1	pc(s)	215
459 219	158221	01 04 01 03	126 g	1	pc(s)	74/157
459 219	158221	01 04 01 03	126 g	1	pc(s)	215
460 147	025349	01 04 01 03	340 g	1	pc(s)	73
460 213	034358	01 04 01 03	166 g	50	pc(s)	72
460 507	034266	01 04 01 03	126 g	1	pc(s)	72
460 517	034259	01 04 01 03	105 g	50	pc(s)	71
460 557	034242	01 04 01 03	80 g	50	pc(s)	71
463 010	025493	01 04 01 03	138 g	50	pc(s)	61
465 801	030091	03 07 01 01	321 g	1	pc(s)	232
466 192	030084	03 07 01 01	550 g	1	pc(s)	232
466 203	033009	03 07 01 01	813 g	1	pc(s)	233
472 021	027879	01 05 01 03	866 g	1	pc(s)	202
472 022	030305	01 05 01 03	588 g	1	pc(s)	202
472 023	030312	01 05 01 03	517 g	1	pc(s)	202
472 024	034495	01 05 01 03	677 g	1	pc(s)	202
472 109	074477	01 05 01 03	604 g	1	pc(s)	202
472 119	074484	01 05 01 03	740 g	1	pc(s)	202
472 129	074491	01 05 01 03	841 g	1	pc(s)	202
472 139	074507	01 05 01 03	1.10 kg	1	pc(s)	202
472 201	089631	01 06 01 01	66 g	1	pc(s)	201/218
472 202	147331	01 06 01 01	70 g	1	pc(s)	201
472 207	090927	01 05 01 03	964 g	1	pc(s)	200/218
472 209	090934	01 05 01 03	1.01 kg	1	pc(s)	200/218
472 209	090934	01 05 01 03	1.01 kg	1	pc(s)	347
472 210	096790	01 50 50 01	92 g	1	pc(s)	201/218
472 217	090941	01 05 01 03	1.35 kg	1	pc(s)	200/218
472 219	090958	01 05 01 03	1.41 kg	1	pc(s)	200/218
472 227	096424	01 05 01 03	1.14 kg	1	pc(s)	200/218
472 229	096431	01 05 01 03	1.18 kg	1	pc(s)	200/218
472 237	096448	01 05 01 03	1.53 kg	1	pc(s)	200/218
472 239	096455	01 05 01 03	1.59 kg	1	pc(s)	200/218
472 269	096462	01 05 01 03	322 g	1	pc(s)	201/218
472 279	090972	01 05 01 03	285 g	1	pc(s)	201/218
472 289	090989	01 05 01 03	366 g	1	pc(s)	201/218
472 299	096479	01 05 01 03	403 g	1	pc(s)	201/218
472 309	157170	01 05 01 03	226 g	1	pc(s)	201
472 319	157187	01 05 01 03	267 g	1	pc(s)	201
472 329	157194	01 05 01 03	307 g	1	pc(s)	201
472 339	157200	01 05 01 03	348 g	1	pc(s)	201
472 349	157217	01 05 01 03	387 g	1	pc(s)	201
472 410	470521	01 05 01 05	1.75 kg	1	pc(s)	217
472 411	470460	01 05 01 05	1.44 kg	1	pc(s)	217
472 412	470491	01 05 01 05	364 g	1	pc(s)	217
472 415	470590	01 05 01 05	2.59 kg	1	pc(s)	216
472 420	476059	01 05 01 05	2.28 kg	1	pc(s)	217
472 421	470477	01 05 01 05	1.95 kg	1	pc(s)	217
472 422	470507	01 05 01 05	446 g	1	pc(s)	217
472 425	470606	01 05 01 05	3.18 kg	1	pc(s)	216
472 432	470538	01 05 01 05	13 g	3	pc(s)	218
472 433	470545	01 05 01 05	17 g	3	pc(s)	218
472 434	470552	01 05 01 05	32 g	3	pc(s)	218
472 435	470569	01 05 01 05	49 g	3	pc(s)	218
472 436	470576	01 05 01 05	65 g	3	pc(s)	218
472 437	470583	01 05 01 05	93 g	3	pc(s)	218
472 497	470484	01 05 01 05	174 g	1	pc(s)	217
472 498	476042	01 05 01 05	756 g	1	pc(s)	217
472 499	470514	01 05 01 05	386 g	1	pc(s)	217
476 001	028548	01 04 01 03	468 g	10	pc(s)	54
476 010	025578	01 04 01 03	797 g	1	pc(s)	53
476 016	125216	01 04 01 03	559 g	1	pc(s)	53
476 020	126916	01 04 01 03	800 g	1	pc(s)	54
476 050	219717	01 04 01 03	869 g	1	pc(s)	53
476 053	219724	01 04 01 03	185 g	1	pc(s)	53
476 055	219755	01 04 01 03	1.02 kg	1	pc(s)	53
476 100	086470	01 04 01 03	460 g	10	pc(s)	54
478 011	033054	01 05 01 01	301 g	25	pc(s)	172
478 012	069183	01 05 01 01	182 g	20	pc(s)	172
478 019	072107	01 05 01 01	299 g	25	pc(s)	172
478 027	125995	01 05 01 01	603 g	10	pc(s)	173
478 041	105157	01 05 01 01	304 g	25	pc(s)	172
478 049	105164	01 05 01 01	303 g	25	pc(s)	172
478 051	124448	01 05 01 01	370 g	10	pc(s)	172
478 098	337411	01 05 01 01	8 g	10	pc(s)	173
478 099	120334	01 06 01 01	52 g	20	pc(s)	12/48
478 112	118140	01 05 01 01	276 g	25	pc(s)	173
478 129	118508	01 05 01 01	140 g	10	pc(s)	175
478 141	101425	01 05 01 01	338 g	10	pc(s)	175

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478 149	154964	01 05 01 01	390 g	10	pc(s)	175
478 150	359512	01 05 01 01	464 g	10	pc(s)	175
478 200	035652	01 05 01 01	263 g	25	pc(s)	173
478 410	136335	01 05 01 01	580 g	5	pc(s)	176
478 430	136342	01 05 01 01	680 g	5	pc(s)	176
478 450	136359	01 05 01 01	780 g	1	pc(s)	176
478 530	120341	01 05 01 01	697 g	10	pc(s)	176
478 540	120358	01 05 01 01	750 g	4	pc(s)	176
478 550	120365	01 05 01 01	838 g	4	pc(s)	176
478 597	523029	01 06 01 01	160 g	12	pc(s)	176
478 699	158054	01 05 01 01	122 g	10	pc(s)	176
480 003	035348	01 06 01 01	24 g	50	pc(s)	56
480 004	035355	01 06 01 01	26 g	50	pc(s)	56
480 018	076372	01 02 01 01	1.90 kg	10	pc(s)	47
480 019	068339	01 02 01 01	1.82 kg	10	pc(s)	47
480 020	051638	01 02 01 01	2.24 kg	10	pc(s)	47
480 021	051621	01 02 01 01	3.06 kg	1	pc(s)	47
480 113	112681	01 06 01 01	61 g	50	pc(s)	54
480 150	019591	01 02 01 01	2.58 kg	1	pc(s)	47
480 157	019577	01 02 01 01	2.87 kg	1	pc(s)	47
480 291	149441	01 06 01 01	9 g	100	pc(s)	54/55
480 598	105607	01 07 01 01	84 g	1	pc(s)	122/139
480 599	105614	01 07 01 01	5 g	10	pc(s)	122/139
480 698	144590	01 07 01 01	128 g	1	pc(s)	165
480 699	107229	01 07 01 01	137 g	1	pc(s)	165
483 100	019430	01 01 01 01	1.60 kg	10	pc(s)	77
483 125	019416	01 01 01 01	2 kg	10	pc(s)	77
483 150	019492	01 02 01 01	2.40 kg	10	pc(s)	47/77
483 200	019713	01 02 01 01	3 kg	1	pc(s)	47/77
483 200	019713	01 02 01 01	3 kg	1	pc(s)	239
484 000	327306	01 06 01 01	24 g	50	pc(s)	56
484 001	327313	01 06 01 01	26 g	50	pc(s)	56
484 010	482272	01 06 01 01	16 g	1	pc(s)	56
490 000	306417	01 06 01 01	44 g	100	pc(s)	55
490 001	306431	01 06 01 01	44 g	100	pc(s)	55
490 002	306493	01 06 01 01	44 g	100	pc(s)	55
490 003	306509	01 06 01 01	44 g	100	pc(s)	55
490 004	306516	01 06 01 01	44 g	100	pc(s)	55
490 005	306523	01 06 01 01	44 g	100	pc(s)	55
490 006	306530	01 06 01 01	44 g	100	pc(s)	55
490 007	306547	01 06 01 01	44 g	100	pc(s)	55
490 008	306554	01 06 01 01	44 g	100	pc(s)	55
490 009	306561	01 06 01 01	44 g	100	pc(s)	55
490 020	306578	01 06 01 01	4 g	100	pc(s)	55
490 021	306585	01 06 01 01	34 g	50	pc(s)	55
490 022	306592	01 06 01 01	10 g	100	pc(s)	55
490 099	306455	01 06 01 01	7.93 kg	1	pc(s)	55
490 100	306486	01 06 01 01	6 g	100	pc(s)	54
490 110	306462	01 06 01 01	23 g	50	pc(s)	54
490 116	306479	01 06 01 01	24 g	50	pc(s)	54
490 900	306424	01 06 01 01	44 g	100	pc(s)	55
490 999	306448	01 06 01 01	7.93 kg	1	pc(s)	54
505 901	019355	01 50 50 01	2 g	20	pc(s)	220
524 906	004009	01 50 50 01	1 g	20	pc(s)	220
528 610	150553	01 06 01 01	3 g	500	pc(s)	25
528 619	108882	01 06 01 01	7 g	1	pc(s)	24
528 850	020955	01 06 01 01	15 g	1	pc(s)	46
528 870	020962	01 06 01 01	22 g	1	pc(s)	46
540 100	094109	01 05 01 02	133 g	10	pc(s)	203/232
540 103	101302	01 05 01 02	120 g	10	pc(s)	203/232
540 104	239685	01 05 01 05	127 g	10	pc(s)	214
540 105	115880	01 05 01 02	359 g	1	pc(s)	93
540 110	094116	01 05 01 02	98 g	50	pc(s)	203/232
540 120	379947	01 04 01 02	144 g	25	pc(s)	203
540 121	380660	01 04 01 02	144 g	25	pc(s)	187/203
540 122	379930	01 04 01 02	63 g	25	pc(s)	41/60
540 122	379930	01 04 01 02	63 g	25	pc(s)	203
540 199	304741	01 05 01 05	107 g	25	pc(s)	214
540 200	113039	01 05 01 02	136 g	10	pc(s)	204/340
540 210	221284	01 05 01 02	98 g	50	pc(s)	204
540 249	512320	01 04 01 02	57 g	50	pc(s)	205
540 250	138650	01 04 01 02	60 g	50	pc(s)	205
540 251	138674	01 04 01 02	37 g	100	pc(s)	206
540 260	138667	01 04 01 02	60 g	50	pc(s)	205
540 261	138681	01 04 01 02	24 g	100	pc(s)	206
540 262	449237	01 04 01 02	78 g	50	pc(s)	205
540 263	449244	01 04 01 02	77 g	10	pc(s)	205
540 270	320536	01 04 01 02	100 g	50	pc(s)	166
540 271	385306	01 04 01 01	50 g	50	pc(s)	59/166
540 801	115460	01 05 01 05	503 g	1	pc(s)	213
540 803	115477	01 05 01 05	566 g	1	pc(s)	213
540 805	128873	01 05 01 05	766 g	1	pc(s)	213
540 810	115484	01 05 01 05	550 g	1	pc(s)	213
540 821	123724	01 05 01 05	249 g	1	pc(s)	213
540 900	076532	01 05 01 02	55 g	50	pc(s)	202
540 901	076525	01 05 01 02	6.28 kg	1	pc(s)	101/121
540 901	076525	01 05 01 02	6.28 kg	1	pc(s)	138/140
540 901	076525	01 05 01 02	6.28 kg	1	pc(s)	154/156
540 901	076525	01 05 01 02	6.28 kg	1	pc(s)	204/214
540 901	076525	01 05 01 02	6.28 kg	1	pc(s)	232
540 902	478688	01 06 01 01	49 g	1	pc(s)	214
540 905	273269	01 05 01 02	3.45 kg	1	pc(s)	42
540 910	025684	01 05 01 02	71 g	10	pc(s)	202
540 911	025691	01 05 01 02	76 g	10	pc(s)	202
540 912	035362	01 05 01 02	94 g	10	pc(s)	202
540 920	144194	01 05 01 02	29 g	10	pc(s)	202
540 930	101319	01 05 01 02	24 g	25	pc(s)	42
540 931	101296	01 05 01 02	1.69 kg	1	pc(s)	42
545 000	027367	03 05 01 03	10,50 g/m	100	m	224
545 001	141131	03 05 01 03	10,50 g/m	100	m	224
546 000	019959	03 06 01 01	451 g	1	pc(s)	207
546 001	019973	03 06 01 01	446 g	1	pc(s)	207
546 002	004016	03 06 01 01	177 g	1	pc(s)	207
546 025	004023	03 06 01 01	178 g	1	pc(s)	207
546 211	294493	03 06 01 01	552 g	1	pc(s)	207
549 000	025547	01 04 01 03	6.20 kg	1	pc(s)	52
549 001	025554	01 04 01 03	6.10 kg	1	pc(s)	52
549 050	128217	01 04 01 03	1.90 kg	1	pc(s)	52
549 051	128224	01 04 01 03	1.38 kg	1	pc(s)	52
549 090	128231	01 04 01 03	3.58 kg	1	pc(s)	53
549 091	128248	01 04 01 03	3 kg	1	pc(s)	53
552 010	021150	01 01 01 03	33 g	25	pc(s)	22
552 030	021563	01 01 01 03	196 g	25	pc(s)	22
554 011	030756	01 06 01 01	46 g/m	1	m	47
556 125	028517	01 06 01 01	762 g	24	pc(s)	167/181
556 130	028524	01 06 01 01	1.43 kg	12	pc(s)	167/181
557 125	509856	01 06 01 01	850 g	24	pc(s)	167/181
557 130	509863	01 06 01 01	1.44 kg	12	pc(s)	167/181
561 923	056923	01 50 50 01	29 g	1	pc(s)	173
562 001	019782	01 06 01 01	4 g	100	pc(s)	71
562 035	019744	01 06 01 01	3 g	100	pc(s)	71
562 050	019751	01 06 01 01	4 g	100	pc(s)	71
562 101	019799	01 06 01 01	3 g	100	pc(s)	71
562 135	019768	01 06 01 01	2 g	100	pc(s)	71
562 150	019775	01 06 01 01	4 g	100	pc(s)	71
562 250	019737	01 06 01 01	2 g	100	pc(s)	71

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562 440	019805	01 06 01 01	38 g	1	pc(s)	71
562 460	019812	01 06 01 01	57 g	1	pc(s)	71
563 010	027800	01 05 01 03	469 g	1	pc(s)	198
563 011	027732	01 05 01 03	13 g	200	pc(s)	199
563 012	027749	01 05 01 03	63 g	1	pc(s)	199
563 013	027756	01 05 01 03	32 g	100	pc(s)	199
563 014	027787	01 05 01 03	11 g	50	pc(s)	199
563 015	027794	01 05 01 03	59 g	10	pc(s)	199
563 016	027763	01 05 01 03	166 g	10	pc(s)	199
563 017	027770	01 05 01 03	370 g	10	pc(s)	199
563 018	083585	01 05 01 03	672 g	1	pc(s)	199
563 019	096998	01 05 01 03	65 g	1	pc(s)	199
563 020	027817	01 05 01 03	476 g	1	pc(s)	199
563 030	027824	01 05 01 03	444 g	1	pc(s)	199
563 040	082861	01 05 01 03	460 g	1	pc(s)	199
563 050	054707	01 05 01 03	226 g	1	pc(s)	198
563 105	027831	01 05 01 03	210 g	10	pc(s)	200
563 169	104839	01 05 01 04	76 g	50	pc(s)	208
563 200	056558	01 05 01 03	410 g	1	pc(s)	198
563 201	101234	01 05 01 03	397 g	1	pc(s)	198
572 000	021723	01 06 01 02	190 g	1	pc(s)	225
573 000	021617	01 06 01 01	25 kg/Stk	25	kg	189
578 370	110953	03 05 01 01	240 g	1	pc(s)	222
578 386	353329	03 05 01 01	2.23 kg	1	pc(s)	222
582 600	034730	03 05 01 02	5.88 kg	1	pc(s)	223
582 620	110960	03 05 01 02	3.77 kg	1	pc(s)	223
585 010	029620	03 05 01 03	211 g	1	pc(s)	224
585 025	029637	03 05 01 03	468 g	1	pc(s)	224
585 051	141155	03 05 01 03	740 g	1	pc(s)	224
585 200	029712	03 05 01 03	211 g	1	pc(s)	224
585 210	029729	03 05 01 03	1.33 kg	1	pc(s)	224
585 211	141162	03 05 01 03	1.33 kg	1	pc(s)	224
585 310	034679	03 05 01 03	468 g	1	pc(s)	224
585 320	148024	03 05 01 03	740 g	1	pc(s)	224
587 460	035263	03 05 01 03	368 g	1	pc(s)	223
588 000	027404	03 05 01 03	100 g	1	pc(s)	224
589 000	027411	03 05 01 03	292 g	1	pc(s)	224
590 000	507678	01 06 01 01	400 g	1	pc(s)	87/224
595 000	046535	01 06 01 02	329 g	1	pc(s)	225
596 000	046528	01 06 01 02	362 g	1	pc(s)	225
597 004	027701	01 06 01 02	5.95 kg	1	pc(s)	225
597 005	027718	01 06 01 02	15.70 kg	1	pc(s)	225
597 006	029606	01 06 01 02	42.80 kg	1	pc(s)	225
597 020	154957	01 06 01 02	155 g	1	pc(s)	165
597 032	155008	01 06 01 02	1.49 kg	1	pc(s)	117/141
597 032	155008	01 06 01 02	1.49 kg	1	pc(s)	158
597 101	143838	01 06 01 02	10 g/PAK	1	PAK	118/141
597 102	153127	01 06 01 02	3.30 g/PAK	1	PAK	158
597 103	463103	01 06 01 02	13 g	1	pc(s)	158
597 104	519336	01 06 01 02	2 g	1	pc(s)	118
597 120	142497	01 06 01 02	100 g	1	pc(s)	141
597 125	513945	01 06 01 02	277 g	1	pc(s)	118
597 126	519954	01 06 01 02	213 g	1	pc(s)	141
597 127	153110	01 06 01 02	412 g	1	pc(s)	158
597 130	155022	01 06 01 02	1 g	1	pc(s)	141
597 139	157941	01 06 01 02	172 g	1	pc(s)	141/158
597 150	519855	03 04 01 03	367 g	1	pc(s)	183
597 151	519862	03 04 01 03	573 g	1	pc(s)	183
597 152	519879	03 04 01 03	666 g	1	pc(s)	183
597 153	519909	03 04 01 03	449 g	1	pc(s)	183
597 154	519886	03 04 01 03	541 g	1	pc(s)	183
597 155	519893	03 04 01 03	525 g	1	pc(s)	183
597 220	144972	01 06 01 02	330 g	1	pc(s)	117/141
597 227	153103	01 06 01 02	699 g	1	pc(s)	158
597 230	155015	01 06 01 02	202 g	1	pc(s)	117/141
597 231	525207	01 06 01 02	182 g	1	pc(s)	117/141
597 320	154940	01 06 01 02	442 g	1	pc(s)	165
597 817	512597	01 06 01 02	400 g	1	pc(s)	118
599 101	694229950632	01 06 01 03	449 g	1	pc(s)	222
600 003	026957	03 04 01 03	46 kg	1	pc(s)	193
600 035	460003	03 04 01 03	5.78 kg	1	pc(s)	193
600 050	462854	03 04 01 03	5.39 kg	1	pc(s)	193
600 055	443433	03 04 01 03	5.36 kg	1	pc(s)	193
600 060	443440	03 04 01 03	5.54 kg	1	pc(s)	193
610 010	022010	03 04 01 01	786 g	1	pc(s)	187
610 020	054110	03 04 01 01	436 g	25	pc(s)	187
610 233	508897	03 08 06 01	68 g	50	pc(s)	195
610 234	260115	03 08 06 01	122 g	50	pc(s)	195
610 257	508880	03 08 06 01	54 g	50	pc(s)	195
610 258	260122	03 08 06 01	80 g	50	pc(s)	195
614 120	241435	03 08 01 01	1.53 kg	5	pc(s)	195
614 150	241527	03 08 01 01	1.85 kg	5	pc(s)	195
614 180	431478	03 08 01 01	2.26 kg	5	pc(s)	195
614 240	241596	03 08 01 01	3 kg	5	pc(s)	195
614 300	241657	03 08 01 01	3.80 kg	5	pc(s)	195
617 120	303058	03 08 01 01	2.18 kg	5	pc(s)	195
617 150	241701	03 08 01 01	2.73 kg	5	pc(s)	195
617 180	470934	03 08 01 01	3.33 kg	5	pc(s)	195
617 240	241718	03 08 01 01	4.35 kg	5	pc(s)	195
617 300	241428	03 08 01 01	5.44 kg	5	pc(s)	195
618 214	322950	03 03 01 01	2 kg	1	pc(s)	166
620 001	021938	03 04 01 02	36 g	100	pc(s)	189
620 002	066052	03 04 01 03	857 g	1	pc(s)	192
620 005	027039	03 04 01 03	1.07 kg	1	pc(s)	190
620 007	027084	03 04 01 03	1.08 kg	1	pc(s)	190
620 008	066151	03 04 01 03	1.44 kg	1	pc(s)	191
620 009	118119	03 04 01 03	2.80 kg	1	pc(s)	190
620 010	244764	03 04 01 03	2.31 kg	1	pc(s)	191
620 011	026636	03 04 01 01	315 g	20	pc(s)	187
620 015	026582	03 04 01 01	370 g	20	pc(s)	187
620 019	027008	03 04 01 03	1.98 kg	1	pc(s)	191
620 029	066113	03 04 01 03	1.43 kg	1	pc(s)	191
620 030	244818	03 04 01 03	800 g	1	pc(s)	191
620 031	244849	03 04 01 03	1.13 kg	1	pc(s)	191
620 101	021860	03 03 01 01	2.50 kg	6	pc(s)	186
620 151	021846	03 03 01 01	3.70 kg	6	pc(s)	186
620 902	021914	03 03 01 02	3.67 kg	6	pc(s)	186
620 903	342859	03 03 01 02	2.43 kg	6	pc(s)	186
620 915	026629	03 04 01 01	298 g	20	pc(s)	187
621 050	498976	03 03 01 04	1.21 kg	1	pc(s)	188
621 090	501133	03 03 01 04	3.99 kg	1	pc(s)	188
621 091	498945	03 03 01 04	316 g	1	pc(s)	188
621 092	501140	03 03 01 04	778 g	1	pc(s)	188
621 093	502383	03 03 01 04	529 g	1	pc(s)	189
621 094	500082	03 03 01 04	177 g	1	pc(s)	188
621 095	499959	03 03 01 04	2.15 kg	1	pc(s)	188
621 096	502734	03 50 50 01	20 g	1	pc(s)	189
621 097	502741	03 50 50 01	236 g	1	pc(s)	188
621 150	499065	03 03 01 04	3.66 kg	6	pc(s)	188
621 300	499089	03 03 01 04	7.66 kg	3	pc(s)	188

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625 001	021945	03 04 01 02	69 g	50	pc(s)	189
625 002	095380	03 04 01 03	810 g	1	pc(s)	192
625 005	027046	03 04 01 03	1.05 kg	1	pc(s)	190
625 007	027091	03 04 01 03	1.03 kg	1	pc(s)	190
625 008	066144	03 04 01 03	1.41 kg	1	pc(s)	191
625 009	118126	03 04 01 03	2.80 kg	1	pc(s)	190
625 010	157613	03 04 01 03	2.25 kg	1	pc(s)	191
625 011	026643	03 04 01 01	340 g	20	pc(s)	187
625 015	026599	03 04 01 01	383 g	20	pc(s)	187
625 019	027015	03 04 01 03	2.08 kg	1	pc(s)	191
625 029	066120	03 04 01 03	1.41 kg	1	pc(s)	191
625 030	244825	03 04 01 03	760 g	1	pc(s)	191
625 031	244856	03 04 01 03	1.44 kg	1	pc(s)	191
625 101	021877	03 03 01 01	3.72 kg	6	pc(s)	186
625 151	021853	03 03 01 01	5.72 kg	6	pc(s)	186
630 120	107427	03 04 01 01	152 g	25	pc(s)	187
630 129	107434	03 04 01 01	150 g	25	pc(s)	187
634 145	125735	03 07 01 01	1.20 kg	1	pc(s)	233
634 160	125728	03 07 01 01	1.60 kg	1	pc(s)	233
635 100	056640	03 02 01 01	2.53 kg	5	pc(s)	189
635 150	056657	03 02 01 01	3.75 kg	5	pc(s)	189
635 200	056664	03 02 01 01	5.28 kg	5	pc(s)	189
635 250	067011	03 02 01 01	6.20 kg	3	pc(s)	189
640 015	106864	03 04 01 01	389 g	1	pc(s)	187
644 000	030268	03 07 01 01	4.45 kg	1	pc(s)	233
646 000	078161	03 07 01 01	2.24 kg	1	pc(s)	189
648 005	129160	03 04 01 03	1.46 kg	1	pc(s)	192
648 009	315501	03 04 01 03	973 g	1	pc(s)	192
648 029	236059	03 04 01 03	1.60 kg	1	pc(s)	192
648 031	293182	03 04 01 03	1.51 kg	1	pc(s)	192
649 015	119376	03 04 01 01	300 g	20	pc(s)	187
649 150	126350	03 03 01 03	1.71 kg	6	pc(s)	189
690 001	500013	03 50 01 01	57.16 kg	1	pc(s)	186
723 199	151703	05 03 01 01	750 g	1	pc(s)	359
800 008	018716	02 01 01 01	394 g/m	127	m	12
800 010	018723	02 01 01 01	617 g/m	81	m	12
800 028	508446	02 01 01 01	394 g/m	50	m	12
800 108	018754	02 01 01 01	440 g/m	75	m	11
800 110	018761	02 01 01 01	680 g/m	50	m	11
800 310	131064	02 01 01 01	617 g/m	30	m	12
800 906	486829	02 01 01 01	641 g	10	pc(s)	12
800 908	486836	02 01 01 01	1.28 kg	10	pc(s)	12
800 910	253315	02 01 01 01	1.85 kg	10	pc(s)	12
800 911	273689	02 01 01 01	4.10 kg/Stk	1	pc(s)	12
801 050	018921	02 03 01 01	330 g/m	100	m	15
801 058	523166	02 03 01 01	660 g/m	20	m	15
801 059	523173	02 03 01 01	660 g/m	1	m	15
810 225	018815	02 02 01 01	400 g/m	100	m	13
810 304	019232	02 02 01 01	960 g/m	52	m	13
810 335	032880	02 02 01 01	840 g/m	50	m	13
810 404	048256	02 02 01 01	1.28 kg/m	40	m	13
810 405	032897	02 02 01 01	1.60 kg/m	30	m	13
810 503	534421	02 02 01 01	1.60 kg/m	30	m	12/240
810 504	456303	02 02 01 01	1.60 kg/m	30	m	13
814 335	442979	02 02 01 01	840 g/m	50	m	13
819 110	436008	01 07 01 01	630 g/m	400	m	129
819 131	223189	01 07 01 01	2.88 kg	1	pc(s)	129
819 132	223172	01 07 01 01	3.78 kg	1	pc(s)	129
819 135	141759	01 07 01 01	488 g/m	100	m	129
819 136	147140	01 07 01 01	630 g/m	100	m	129
819 137	152625	01 07 01 03	854 g/m	100	m	146
819 138	434523	01 07 01 01	488 g/m	500	m	129
819 142	152458	01 07 01 03	403 g	1	pc(s)	147
819 145	152533	01 07 01 01	344 g	1	pc(s)	129
819 146	152540	01 07 01 01	368 g	1	pc(s)	129
819 149	272057	01 07 01 03	757 g	1	pc(s)	147
819 160	152298	01 07 01 03	4.80 kg	1	pc(s)	146
819 161	281646	01 07 01 03	25.97 kg	1	pc(s)	146
819 163	280199	01 07 01 03	4.36 kg	1	pc(s)	146
819 165	272224	01 07 01 03	4.48 kg	1	pc(s)	146
819 185	249288	01 07 01 01	1.15 kg	1	pc(s)	132/149
819 186	249295	01 07 01 01	3.25 kg	1	pc(s)	132/149
819 197	222236	01 07 01 01	196 g	1	pc(s)	129
819 199	222274	01 07 01 01	184 g	1	pc(s)	130
819 220	244238	01 07 01 01	2.80 kg	1	pc(s)	128
819 223	157675	01 07 01 01	4 kg	1	pc(s)	128
819 226	260528	01 07 01 01	13.86 kg	1	pc(s)	129
819 227	157712	01 07 01 01	3.90 kg	1	pc(s)	129
819 235	477216	01 07 01 01	77 g	1	pc(s)	130
819 247	260900	01 07 01 01	6.80 kg	1	pc(s)	128
819 283	499621	01 07 01 04	422 g	1	pc(s)	116
819 288	236479	01 07 01 02	172 g	1	pc(s)	130
819 294	152571	01 07 01 01	701 g	1	pc(s)	130
819 296	492684	01 07 01 04	34 g	1	pc(s)	116
819 297	492691	01 07 01 04	29 g	1	pc(s)	116
819 298	492653	01 07 01 04	117 g	1	pc(s)	116
819 326	260511	01 07 01 01	8.40 kg	1	pc(s)	127
819 328	260504	01 07 01 01	8.80 kg	1	pc(s)	127
819 336	241237	01 07 01 01	9.60 kg	1	pc(s)	127
819 338	241244	01 07 01 01	10 kg	1	pc(s)	127
819 371	260498	01 07 01 01	17 kg	1	pc(s)	127
819 373	260481	01 07 01 01	17.90 kg	1	pc(s)	127
819 381	241954	01 07 01 01	18.50 kg	1	pc(s)	127
819 383	241961	01 07 01 01	19.10 kg	1	pc(s)	127
819 426	260474	01 07 01 01	11.30 kg	1	pc(s)	127
819 430	152236	01 07 01 03	15.40 kg	1	pc(s)	145
819 431	155442	01 07 01 03	17 kg	1	pc(s)	145
819 433	155459	01 07 01 03	21 kg	1	pc(s)	145
819 438	241251	01 07 01 01	12.50 kg	1	pc(s)	127
819 473	260450	01 07 01 01	37 kg	1	pc(s)	128
819 483	241978	01 07 01 01	38.20 kg	1	pc(s)	128
819 600	499645	01 07 01 04	470 g/m	100	m	114
819 605	499652	01 07 01 04	470 g/m	500	m	114
819 609	481794	01 07 01 04	4.25 kg	1	pc(s)	115
819 636	485815	01 07 01 04	4.56 kg	1	pc(s)	114
819 638	499935	01 07 01 04	4.57 kg	1	pc(s)	114
819 640	481763	01 07 01 04	153 g	10	pc(s)	115
819 642	499638	01 07 01 04	368 g	1	pc(s)	115
819 645	481770	01 07 01 04	314 g	1	pc(s)	115
819 646	511460	01 07 01 04	178 g	5	pc(s)	115
819 647	511477	01 07 01 04	181 g	5	pc(s)	115
819 648	511484	01 07 01 04	172 g	5	pc(s)	115
819 649	512498	01 07 01 04	38 g	5	pc(s)	115/130
819 672	494527	01 07 01 04	7.07 kg	1	pc(s)	113
819 673	494534	01 07 01 04	7.34 kg	1	pc(s)	113
819 674	494541	01 07 01 04	8.07 kg	1	pc(s)	113
819 675	494558	01 07 01 04	8.34 kg	1	pc(s)	113
819 680	494442	01 07 01 04	12.94 kg	1	pc(s)	113
819 682	494428	01 07 01 04	12.74 kg	1	pc(s)	113
819 685	494459	01 07 01 04	6.12 kg	1	pc(s)	113
819 687	494435	01 07 01 04	12.90 kg	1	pc(s)	113
819 688	499782	01 07 01 04	9.30 kg	1	pc(s)	114
819 690	494466	01 07 01 04	6.40 kg	1	pc(s)	113
819 730	243477	01 07 01 01	53 kg	1	pc(s)	128
819 735	499539	01 07 01 04	51.72 kg	1	pc(s)	114
819 760	240391	01 07 01 03	56.64 kg	1	pc(s)	145
819 799	499256	01 07 01 04	501 g	1	pc(s)	86

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819 895	515574	01 07 01 05	19 g	10	pc(s)	139/155
819 895	515574	01 07 01 05	19 g	10	Stk.	122
819 896	515581	01 07 01 05	54 g	10	pc(s)	139/155
819 896	515581	01 07 01 05	54 g	10	Stk.	122
819 897	515567	01 07 01 05	94 g	10	pc(s)	139/155
819 897	515567	01 07 01 05	94 g	10	Stk.	122
819 898	515550	01 07 01 05	32 g	10	pc(s)	139/155
819 898	515550	01 07 01 05	32 g	10	Stk.	122
819 997	504394	01 50 50 01	66 g	10	pc(s)	116/122
819 997	504394	01 50 50 01	66 g	10	pc(s)	130
819 998	494251	01 07 01 04	6 g	100	pc(s)	122/130
819 999	222779	01 07 01 01	15 g	50	pc(s)	122/130
819 999	222779	01 07 01 01	15 g	50	pc(s)	147
830 008	018785	02 01 01 02	448 g/m	100	m	11
830 038	035690	02 01 01 02	448 g/m	100	m	11
830 108	080430	02 01 01 02	448 g/m	20	m	11
830 208	106116	01 07 01 01	2.60 kg	1	pc(s)	164
830 218	106123	01 07 01 01	3.60 kg	1	pc(s)	164
831 225	018891	02 02 01 02	450 g/m	100	m	13
832 095	048324	02 03 01 02	845 g/m	50	m	15
832 120	129610	02 03 01 02	1.03 kg/m	25	m	15
832 192	018914	02 03 01 02	597 g/m	50	m	15
832 202	081048	02 03 01 02	597 g/m	50	m	15
832 202	081048	02 03 01 02	597 g/m	50	m	220
832 295	093447	02 03 01 02	845 g/m	50	m	15
832 320	129641	02 03 01 02	1.03 kg/m	25	m	15
832 739	018907	02 03 01 02	438 g/m	50	m	15
832 740	093454	02 03 01 02	438 g/m	100	m	15
832 838	335776	02 03 01 02	334 g/m	100	m	15
832 838	335776	02 03 01 02	334 g/m	100	m	220
832 839	093164	02 03 01 02	438 g/m	100	m	15
832 839	093164	02 03 01 02	438 g/m	100	m	220
833 008	151987	02 01 01 02	182 g/m	110	m	10
840 008	018730	02 01 01 04	135 g/m	148	m	10
840 010	018747	02 01 01 04	210 g/m	100	m	10
840 018	035706	02 01 01 04	135 g/m	148	m	10
840 028	131163	02 01 01 04	135 g/m	21	m	10
840 050	070141	02 03 01 04	133 g/m	100	m	15
840 108	080423	02 01 01 04	135 g/m	21	m	10
840 118	071483	02 01 01 04	200 g/m	100	m	10
840 128	160002	02 01 01 04	200 g/m	100	m	10
850 008	129627	02 03 01 03	235 g/m	100	m	15
850 010	129634	02 03 01 03	395 g/m	100	m	15
852 335	031067	02 02 01 01	840 g/m	25	m	13
854 335	439955	02 02 01 01	840 g/m	25	m	13
860 008	018808	02 01 01 03	395 g/m	125	m	11
860 010	019997	02 01 01 03	617 g/m	80	m	11/166
860 020	092662	02 01 01 03	617 g/m	20	m	11/166
860 050	139923	02 01 01 03	617 g/m	50	m	11/166
860 110	150256	02 01 01 03	624 g	5	pc(s)	48/166
860 115	101104	02 01 01 03	930 g	5	pc(s)	48/166
860 129	486782	02 01 01 03	1.24 kg	5	pc(s)	48
860 130	101111	02 01 01 03	1.80 kg	5	pc(s)	48/166
860 210	159365	02 02 01 03	830 g	5	pc(s)	48
860 215	101081	02 02 01 03	1.25 kg	5	pc(s)	48
860 230	101098	02 02 01 03	2.48 kg	5	pc(s)	48
860 240	159372	02 02 01 03	3.32 kg	5	pc(s)	48
860 315	150058	02 02 01 03	1.25 kg	5	pc(s)	48
860 325	093157	02 02 01 03	825 g/m	25	m	14
860 330	150065	02 02 01 03	2.50 kg	5	pc(s)	48
860 335	143388	02 02 01 03	827 g/m	60	m	14
860 404	276482	02 02 01 03	1.26 kg/m	40	m	14
860 405	276499	02 02 01 03	1.57 kg/m	30	m	14
860 430	227781	02 02 01 03	2 kg	5	pc(s)	48
860 900	143395	02 02 01 03	824 g/m	60	m	14
860 908	019362	02 01 01 03	395 g/m	125	m	11
860 910	019300	02 01 01 03	617 g/m	80	m	11
860 920	092679	02 01 01 03	617 g/m	20	m	11
860 925	093140	02 02 01 03	825 g/m	25	m	14
860 950	155596	02 01 01 03	617 g/m	50	m	11
870 008	509724[1)]	02 08 01 02	400 g/m	1	m	11
870 010	503586[1)]	02 08 01 02	620 g/m	1	m	11
870 013	503609[1)]	02 99 00 00	1.06 kg/m	100	m	11
870 014	503616[1)]	02 99 00 00	1.22 kg/m	100	m	11
870 016	503623[1)]	02 99 00 00	1.58 kg/m	100	m	11
900 050	107496	04 01 01 14	507 g	1	pc(s)	271
900 070	504521[1)]	04 01 01 05	509 g	1	pc(s)	265
900 071	504545[1)]	04 01 01 05	562 g	1	pc(s)	265
900 075	504538[1)]	04 01 01 05	511 g	1	pc(s)	265
900 076	504552[1)]	04 01 01 05	564 g	1	pc(s)	265
900 095	510838	04 01 01 05	511 g	1	pc(s)	265
900 220	106734	04 01 01 11	699 g	1	pc(s)	268
900 230	153783	04 01 01 07	1.49 kg	1	pc(s)	266
900 255	125773	04 01 01 09	194 g	1	pc(s)	266
900 261	094352	04 01 02 16	158 g	1	pc(s)	292
900 262	072572	04 01 02 16	158 g	1	pc(s)	292
900 263	094369	04 01 02 16	194 g	1	pc(s)	292
900 264	073661	04 01 02 16	157 g	1	pc(s)	292
900 270	106703	04 01 02 16	223 g	1	pc(s)	292
900 271	106710	04 01 02 16	224 g	1	pc(s)	292
900 411	107205	04 01 01 50	54 g	1	pc(s)	262/268
900 411	107205	04 01 01 50	54 g	1	pc(s)	292/306
900 417	120419	04 01 01 50	66 g	1	pc(s)	262/268
900 417	120419	04 01 01 50	66 g	1	pc(s)	292/306
900 418	159884	04 01 02 50	49 g	1	pc(s)	281/306
900 419	156821	04 01 02 50	39 g	1	pc(s)	262/292
900 419	156821	04 01 02 50	39 g	1	pc(s)	306
900 429	159891	04 01 02 50	59 g	1	pc(s)	281/306
900 430	157286	04 01 02 05	59 g	1	pc(s)	286
900 431	310827	04 01 02 05	46 g	1	pc(s)	286
900 432	157309	04 01 02 05	61 g	1	pc(s)	286
900 433	157316	04 01 02 05	48 g	1	pc(s)	286
900 435	292963	04 01 02 05	54 g	1	pc(s)	287
900 439	436053	04 01 02 05	105 g	1	pc(s)	286
900 443	394322	04 01 02 05	785 g	20	pc(s)	287
900 445	280380	04 01 02 05	58 g	1	pc(s)	286
900 446	292970	04 01 02 05	49 g	1	pc(s)	286
900 447	282216	04 01 02 05	130 g	1	pc(s)	287
900 448	293007	04 01 02 05	113 g	1	pc(s)	287
900 449	320031	04 01 02 05	128 g	1	pc(s)	287
900 450	157989	04 01 02 19	77 g	1	pc(s)	278
900 455	157996	04 01 02 19	143 g	1	pc(s)	278
900 458	320574	04 01 02 19	76 g	1	pc(s)	278
900 459	320581	04 01 02 19	143 g	1	pc(s)	278
900 460	244146	04 01 02 50	37 g	1	pc(s)	281/288
900 460	244146	04 01 02 50	37 g	1	pc(s)	306
900 461	260559	04 01 01 50	64 g	1	pc(s)	267/306
900 462	260566	04 01 01 50	81 g	1	pc(s)	267/306
900 471	067547	04 01 03 04	22 g	1	pc(s)	299
900 588	323933	04 01 04 03	31 g	4	pc(s)	303
900 589	109339	04 01 04 03	20 g	1	pc(s)	303
900 595	078208	04 01 04 03	58 g	1	pc(s)	301/305
900 610	048553	04 01 04 03	19 g	1	pc(s)	305
900 611	048560	04 01 04 03	38 g	1	pc(s)	305
900 615	086562	04 01 04 03	14 g	1	pc(s)	305
900 617	086593	04 01 04 03	9 g	1	pc(s)	305
900 760	156135	04 01 02 20	274 g	1	Stk.	285
900 761	156142	04 01 02 20	294 g	1	Stk.	285
900 762	156159	04 01 02 20	294 g	1	Stk.	285
900 765	156166	04 01 02 20	512 g	1	Stk.	285
900 766	156173	04 01 02 20	545 g	1	Stk.	285

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900 767	156180	04 01 02 20	551 g	1	Stk.	285
900 768	156197	04 01 02 20	556 g	1	Stk.	285
900 780	156203	04 01 02 20	368 g	1	Stk.	285
900 781	156210	04 01 02 20	390 g	1	Stk.	285
900 782	156227	04 01 02 20	389 g	1	Stk.	285
900 785	156234	04 01 02 20	693 g	1	pc(s)	285
900 786	156241	04 01 02 20	726 g	1	pc(s)	285
900 787	156258	04 01 02 20	732 g	1	pc(s)	285
900 788	156265	04 01 02 20	736 g	1	pc(s)	285
900 815	087996	04 01 04 03	29 g	1	pc(s)	305
900 839	153059	04 01 04 03	14 g	1	pc(s)	305
900 848	107816	04 01 04 03	34 g	1	pc(s)	305
900 849	473348	04 01 01 50	118 g	1	pc(s)	262
900 849	473348	04 01 01 50	118 g	1	pc(s)	268/305
900 850	460379	04 01 04 03	61 g	5	pc(s)	301/305
900 910	155046	04 01 02 10	426 g	1	pc(s)	295
900 913	492455	04 01 02 10	1.32 kg	1	pc(s)	295
900 920	155053	04 01 02 10	617 g	1	pc(s)	295
900 921	492462	04 01 02 10	1.88 kg	1	pc(s)	295
900 923	492400	04 01 02 10	1.74 kg	1	pc(s)	295
900 945	425118	04 01 02 10	230 g	1	pc(s)	295
902 314	151031	04 01 04 02	786 g	1	pc(s)	304
902 315	125759	04 01 04 02	1.83 kg	1	pc(s)	304
902 316	151048	04 01 04 02	1.92 kg	1	pc(s)	304
902 317	151055	04 01 04 02	5 g	1	pc(s)	304
902 471	108943	04 01 04 02	1.79 kg	1	pc(s)	304
902 472	108950	04 01 04 02	2.39 kg	1	pc(s)	304
902 485	045767	04 01 04 02	612 g	1	pc(s)	304
906 055	071513	04 02 10 02	1 kg	1	pc(s)	350
906 058	091658	04 02 10 02	899 g	1	pc(s)	350
906 100	106598	04 02 04 03	3.40 kg	1	pc(s)	334
906 101	106604	04 02 04 03	4.97 kg	1	pc(s)	334
906 102	106611	04 02 04 03	5.70 kg	1	pc(s)	334
906 103	106628	04 02 04 03	7.65 kg	1	pc(s)	334
907 208	107373	04 02 04 50	2 g	1	pc(s)	333
907 214	100879	04 02 04 02	66 g	1	pc(s)	333
907 216	106680	04 02 04 02	66 g	1	pc(s)	333
907 217	107342	04 02 04 50	2 g	1	pc(s)	333
907 218	107588	04 02 04 50	2 g	1	pc(s)	333
907 219	107595	04 02 04 50	2 g	1	pc(s)	332
907 400	107557	04 02 04 01	65 g	1	pc(s)	331
907 401	107564	04 02 04 01	69 g	1	pc(s)	331
907 421	107618	04 02 04 01	4 g	10	pc(s)	331
907 422	107625	04 02 04 01	4 g	10	pc(s)	331
907 423	107632	04 02 04 01	4 g	10	pc(s)	331
907 424	107649	04 02 04 01	4 g	10	pc(s)	331
907 425	107656	04 02 04 01	3 g	10	pc(s)	331
907 430	107670	04 02 04 01	4 g	10	pc(s)	332
907 441	107694	04 02 04 01	4 g	10	pc(s)	332
907 442	107700	04 02 04 01	3 g	10	pc(s)	332
907 443	107717	04 02 04 01	4 g	10	pc(s)	332
907 444	107724	04 02 04 01	3 g	10	pc(s)	332
907 445	118461	04 02 04 01	3 g	10	pc(s)	332
907 470	107663	04 02 04 01	4 g	10	pc(s)	332
907 496	150683	04 02 04 50	13 g	10	pc(s)	333
907 497	112995	04 02 04 50	16 g	1	pc(s)	333
907 498	107540	04 02 04 50	10 g	1	pc(s)	333
907 499	107533	04 02 04 50	45 g	1	pc(s)	332
907 991	112988	04 02 04 50	181 g	1	pc(s)	335
907 993	048584	04 02 04 50	60 g	1	pc(s)	335
907 994	033511	04 02 04 50	105 g	1	pc(s)	335
907 995	033528	04 02 04 50	228 g	1	pc(s)	335
907 996	033535	04 02 04 50	60 g	1	pc(s)	335
907 997	033542	04 02 04 50	48 g	1	pc(s)	335
908 010	148512	04 01 02 17	42 g	1	pc(s)	285
908 011	148482	04 01 02 17	37 g	1	pc(s)	285
908 012	148505	04 01 02 17	40 g	1	pc(s)	285
908 013	148536	04 01 02 17	57 g	1	pc(s)	285
908 014	148529	04 01 02 17	49 g	1	pc(s)	285
908 015	148543	04 01 02 17	60 g	1	pc(s)	285
908 070	148499	04 01 02 17	113 g	1	pc(s)	284
908 074	148567	04 01 02 17	123 g	1	pc(s)	284
908 076	148581	04 01 02 17	130 g	1	pc(s)	284
908 090	148550	04 01 02 17	117 g	1	pc(s)	285
908 094	148574	04 01 02 17	126 g	1	pc(s)	285
908 096	148598	04 01 02 17	134 g	1	pc(s)	285
908 190	148604	04 01 02 17	219 g	1	pc(s)	283
908 192	148628	04 01 02 17	238 g	1	pc(s)	283
908 195	148611	04 01 02 17	225 g	1	pc(s)	284
908 197	148635	04 01 02 17	243 g	1	pc(s)	284
908 203	148642	04 01 02 17	225 g	1	pc(s)	284
908 204	148666	04 01 02 17	259 g	1	pc(s)	284
908 208	148659	04 01 02 17	230 g	1	pc(s)	284
908 209	148673	04 01 02 17	266 g	1	pc(s)	284
908 214	267961	04 01 02 17	304 g	1	pc(s)	284
908 219	267978	04 01 02 17	311 g	1	pc(s)	284
908 300	148680	04 01 02 17	303 g	1	pc(s)	281
908 301	148727	04 01 02 17	363 g	1	pc(s)	281
908 305	148697	04 01 02 17	310 g	1	pc(s)	282
908 306	148734	04 01 02 17	370 g	1	pc(s)	282
908 314	148703	04 01 02 17	339 g	1	pc(s)	281
908 319	148710	04 01 02 17	347 g	1	pc(s)	282
908 340	148840	04 01 02 17	386 g	1	pc(s)	282
908 341	148864	04 01 02 17	423 g	1	pc(s)	282
908 342	148765	04 01 02 17	448 g	1	pc(s)	282
908 343	148789	04 01 02 17	399 g	1	pc(s)	283
908 344	148802	04 01 02 17	430 g	1	pc(s)	283
908 345	148857	04 01 02 17	394 g	1	pc(s)	283
908 346	148871	04 01 02 17	432 g	1	pc(s)	283
908 347	148772	04 01 02 17	456 g	1	pc(s)	283
908 348	148796	04 01 02 17	406 g	1	pc(s)	283
908 349	148819	04 01 02 17	438 g	1	pc(s)	283
908 350	148741	04 01 02 17	373 g	1	pc(s)	282
908 351	148826	04 01 02 17	319 g	1	pc(s)	282
908 355	148758	04 01 02 17	380 g	1	pc(s)	282
908 356	148833	04 01 02 17	325 g	1	pc(s)	282
908 505	228139	04 01 01 15	861 g	1	pc(s)	266
908 506	228146	04 01 01 15	882 g	1	pc(s)	266
909 230	117686	04 01 03 03	199 g	1	pc(s)	299
909 250	132566	04 01 03 03	970 g	1	pc(s)	300
909 251	132573	04 01 03 03	877 g	1	pc(s)	300
909 300	117723	04 02 07 01	224 g	1	pc(s)	342
909 310	117747	04 02 07 01	212 g	1	pc(s)	342
909 321	126152	04 02 07 01	216 g	1	pc(s)	342
909 703	085664	04 02 08 02	233 g	1	pc(s)	345
909 704	105690	04 02 08 02	86 g	1	pc(s)	345
909 705	105706	04 02 08 02	283 g	1	pc(s)	345
909 706	362437	04 02 08 02	222 g	1	pc(s)	345
909 710	118942	04 02 08 01	114 g	1	pc(s)	345
909 711	118980	04 02 08 01	116 g	1	pc(s)	345
910 099	037298	04 02 10 02	38 g	1	pc(s)	350
910 200	144019	04 01 04 01	140 g	1	pc(s)	303
910 486	124479	04 03 01 50	80 g	1	pc(s)	323/352
910 499	157149	04 03 01 50	180 g	1	pc(s)	301/315
910 499	157149	04 03 01 50	180 g	1	pc(s)	352/327
910 499	157149	04 03 01 50	180 g	1	pc(s)	323
910 508	111363	04 03 01 03	800 g	1	pc(s)	354
910 511	111424	04 03 01 01	1.32 kg	1	pc(s)	302/354
910 513	506310 [1)]	04 01 04 01	162 g	1	pc(s)	302
910 631	108196	04 01 01 11	114 g	1	pc(s)	269
910 641	093416	04 01 01 11	1 g	20	pc(s)	269
910 642	107878	04 01 01 11	80 g	1	pc(s)	269
910 652	114531	04 03 01 50	64 g	1	pc(s)	323/353
910 653	113008	04 03 01 02	1.06 kg	1	pc(s)	323/353
910 655	149250	04 03 01 02	835 g	1	pc(s)	323/353
910 694	350212	04 03 01 03	67 g	1	pc(s)	353

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910 695	118959	04 03 01 03	180 g	1	pc(s)	323/352
910 696	149359	04 03 01 03	54 g	1	pc(s)	323/352
910 697	123717	04 03 01 50	31 g/PAK	1	PAK	322/353
910 698	337053	04 03 01 03	67 g	1	pc(s)	353
910 710	424678	04 03 01 03	52 g	1	pc(s)	314/327
910 710	424678	04 03 01 03	52 g	1	pc(s)	352
910 797	428829	04 02 01 50	28 g	1	PAK	314/327
910 920	460263	04 03 01 03	380 g	1	pc(s)	300
910 921	460270	04 03 01 03	380 g	1	pc(s)	300
910 935	460676	04 03 01 50	101 g	1	pc(s)	300
910 936	460683	04 03 01 50	111 g	1	pc(s)	301
910 937	460690	04 03 01 50	193 g	1	pc(s)	301
910 938	467668	04 03 01 50	131 g	1	pc(s)	301
912 253	068360	04 01 03 01	563 g	1	pc(s)	298
912 254	073685	04 01 03 01	300 g	1	pc(s)	298
915 000	421271	04 01 07 01	1.02 kg	1	pc(s)	301
915 001	421301	04 01 07 01	1.01 kg	1	pc(s)	301
915 051	422247	04 01 07 01	820 g	1	pc(s)	302
915 105	498822	04 01 07 01	5.80 kg	1	pc(s)	302
915 109	422162	04 01 07 01	4.37 kg	1	pc(s)	302
915 111	422179	04 01 07 01	5.35 kg	1	pc(s)	302
915 113	422209	04 01 07 01	6.15 kg	1	pc(s)	302
915 115	422223	04 01 07 01	6.85 kg	1	pc(s)	302
915 117	422230	04 01 07 01	7.85 kg	1	pc(s)	302
915 120	498839	04 01 07 01	9.30 kg	1	pc(s)	302
918 401	074224	04 02 03 01	182 g	1	pc(s)	328
918 409	146709	04 02 03 01	110 g	1	pc(s)	329
918 411	093133	04 02 03 01	99 g	1	pc(s)	329
918 420	094895	04 02 03 01	212 g	1	pc(s)	329
918 421	094901	04 02 03 01	118 g	1	pc(s)	329
918 422	149267	04 02 03 01	97 g	1	pc(s)	329
919 010	071612	04 02 10 01	13 g	10	pc(s)	349
919 011	071605	04 02 10 01	28 g	10	pc(s)	349
919 012	071599	04 02 10 01	40 g	1	pc(s)	349
919 014	071575	04 02 10 01	5 g	10	pc(s)	349
919 015	071568	04 02 10 01	15 g	1	pc(s)	349
919 016	071551	04 02 10 01	481 g	1	pc(s)	349
919 030	103504	04 02 10 01	167 g	1	pc(s)	334/350
919 031	103511	04 02 10 01	2 g	20	pc(s)	334/350
919 032	103528	04 02 10 01	2 g	20	pc(s)	334/350
919 033	103535	04 02 10 01	5 g	20	pc(s)	334/350
919 034	103542	04 02 10 01	7 g	10	pc(s)	334/350
919 035	103559	04 02 10 01	12 g	10	pc(s)	334/350
919 036	103566	04 02 10 01	23 g	25	pc(s)	350
919 037	103573	04 02 10 01	50 g	20	pc(s)	350
919 038	103580	04 02 10 01	82 g	10	pc(s)	350
920 000	057494	04 01 05 01	127 g	1	pc(s)	206
920 211	120570	04 02 01 02	23 g	1	pc(s)	319
920 220	118331	04 02 01 02	36 g	1	pc(s)	318
920 222	118355	04 02 01 02	21 g	1	pc(s)	318
920 224	117785	04 02 01 02	37 g	1	pc(s)	318
920 225	118379	04 02 01 02	21 g	1	pc(s)	318
920 226	142121	04 02 01 02	23 g	1	pc(s)	318
920 240	118348	04 02 01 02	20 g	1	pc(s)	318
920 242	118362	04 02 01 02	21 g	1	pc(s)	318
920 243	126732	04 02 01 02	21 g	1	pc(s)	319
920 244	117792	04 02 01 02	21 g	1	pc(s)	318
920 245	118386	04 02 01 02	36 g	1	pc(s)	318
920 247	116078	04 02 01 02	43 g	1	pc(s)	318
920 249	127845	04 02 01 03	23 g	1	pc(s)	320
920 270	117549	04 02 01 02	22 g	1	pc(s)	318
920 271	117556	04 02 01 02	22 g	1	pc(s)	319
920 280	142138	04 02 01 05	22 g	1	pc(s)	321
920 288	137363	04 02 01 02	25 g	1	pc(s)	319
920 289	135840	04 02 01 02	22 g	1	pc(s)	319
920 296	340015	04 02 01 02	21 g	1	pc(s)	319
920 300	109179	04 02 01 01	34 g	1	pc(s)	315
920 301	109186	04 02 01 01	53 g	1	pc(s)	320
920 308	109209	04 02 01 02	22 g	1	pc(s)	322
920 309	109193	04 02 01 02	14 g	1	pc(s)	322
920 310	109124	04 02 01 02	25 g	1	pc(s)	316
920 314	261396	04 02 01 02	25 g	1	pc(s)	317
920 320	109032	04 02 01 02	24 g	1	pc(s)	316
920 322	109049	04 02 01 02	24 g	1	pc(s)	316
920 324	109056	04 02 01 02	38 g	1	pc(s)	316
920 325	109063	04 02 01 02	24 g	1	pc(s)	316
920 326	109070	04 02 01 02	24 g	1	pc(s)	316
920 327	109087	04 02 01 02	24 g	1	pc(s)	316
920 334	152229	04 02 01 02	23 g	1	pc(s)	318
920 336	118539	04 02 01 02	40 g	1	pc(s)	316
920 340	108967	04 02 01 02	23 g	1	pc(s)	316
920 342	108974	04 02 01 02	23 g	1	pc(s)	316
920 344	108981	04 02 01 02	37 g	1	pc(s)	316
920 345	108998	04 02 01 02	24 g	1	pc(s)	316
920 346	109001	04 02 01 02	24 g	1	pc(s)	316
920 347	109018	04 02 01 02	24 g	1	pc(s)	316
920 349	126404	04 02 01 03	25 g	1	pc(s)	320
920 350	109131	04 02 01 02	24 g	1	pc(s)	317
920 354	109148	04 02 01 02	24 g	1	pc(s)	317
920 362	120587	04 02 01 02	24 g	1	pc(s)	317
920 364	109155	04 02 01 02	25 g	1	pc(s)	317
920 370	109117	04 02 01 02	24 g	1	pc(s)	317
920 371	109094	04 02 01 02	24 g	1	pc(s)	317
920 375	109100	04 02 01 02	24 g	1	pc(s)	317
920 381	109025	04 02 01 05	23 g	1	pc(s)	321
920 384	109162	04 02 01 05	22 g	1	pc(s)	321
920 388	137370	04 02 01 02	28 g	1	pc(s)	317
920 389	118447	04 02 01 02	30 g	1	pc(s)	317
920 395	118157	04 02 01 50	12 g/PAK	1	PAK	322
920 398	126572	04 02 01 50	5.60 g/PAK	1	PAK	322/352
920 538	125285	04 02 01 05	20 g	1	pc(s)	321
922 020	463561	04 02 07 50	42 g	1	pc(s)	343
922 220	433953	04 02 07 03	64 g	1	pc(s)	343
922 400	137349	04 02 07 03	220 g	1	pc(s)	343
923 019	033177	04 01 05 02	1.70 kg	1	pc(s)	220/356
923 021	036161	04 01 05 01	185 g	1	pc(s)	206/356
923 023	074262	04 01 05 01	185 g	1	pc(s)	206/356
923 025	110397	04 01 05 03	137 g	1	pc(s)	221/357
923 035	110403	04 01 05 03	163 g	1	pc(s)	221/357
923 045	110410	04 01 05 03	190 g	1	pc(s)	221/357
923 060	038899	04 01 05 02	725 g	1	pc(s)	220/356
923 061	038905	04 01 05 02	750 g	1	pc(s)	220/356
923 062	038912	04 01 05 02	781 g	1	pc(s)	220/356
923 100	108325	04 01 05 02	289 g	1	pc(s)	221/357
923 101	108332	04 01 05 02	1.98 kg	1	pc(s)	221/357
923 110	092426	05 03 01 01	46 g	10	pc(s)	359
923 116	085978	05 03 01 01	42 g	10	pc(s)	359
923 117	093478	05 03 01 01	42 g	10	pc(s)	359
923 118	104969	05 03 01 01	38 g	10	pc(s)	359
923 119	104976	05 03 01 01	38 g	10	pc(s)	359
923 211	150904	04 01 05 03	109 g	1	pc(s)	221/357
923 214	150911	04 01 05 03	107 g	1	pc(s)	22/357
923 218	150928	04 01 05 03	99 g	1	pc(s)	221/357
923 222	150935	04 01 05 03	95 g	1	pc(s)	221/357
923 226	150942	04 01 05 03	92 g	1	pc(s)	221/357
923 230	150959	04 01 05 03	180 g	1	pc(s)	221/357
923 233	150966	04 01 05 03	174 g	1	pc(s)	221/357
923 236	150973	04 01 05 03	167 g	1	pc(s)	221/357
923 239	150980	04 01 05 03	162 g	1	pc(s)	221/357
923 242	150997	04 01 05 03	158 g	1	pc(s)	221/357
923 311	150775	04 01 05 03	105 g	1	pc(s)	221/357
923 314	150782	04 01 05 03	103 g	1	pc(s)	221/357
923 318	150799	04 01 05 03	101 g	1	pc(s)	221/357
923 322	150805	04 01 05 03	96 g	1	pc(s)	221/357
923 326	150812	04 01 05 03	91 g	1	pc(s)	221/357

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923 330	150829	04 01 05 03	178 g	1	pc(s)	221/357
923 333	150836	04 01 05 03	172 g	1	pc(s)	221/357
923 336	150843	04 01 05 03	168 g	1	pc(s)	221/357
923 339	150850	04 01 05 03	159 g	1	pc(s)	221/357
923 342	150867	04 01 05 03	158 g	1	pc(s)	221/357
923 348	150874	04 01 05 03	144 g	1	pc(s)	221/357
923 356	150881	04 01 05 03	262 g	1	pc(s)	221/357
923 362	150898	04 01 05 03	244 g	1	pc(s)	221/357
923 401	237766	04 01 06 04	12.15 kg	1	pc(s)	358
923 402	442269	04 01 06 04	3.59 kg	1	pc(s)	358
923 403	442962	04 01 06 04	207 g	1	pc(s)	358
924 017	045934	04 02 09 01	30 g	1	pc(s)	343
924 328	100008	04 01 03 50	15 g	1	pc(s)	298
924 329	099234	04 01 03 50	12 g	1	pc(s)	298
924 335	071773	04 01 03 02	122 g	1	pc(s)	298
924 336	071681	04 01 03 50	13 g	1	pc(s)	298
924 350	076709	04 01 03 04	34 g	1	pc(s)	299
924 370	081321	04 01 03 02	71 g	1	pc(s)	298
924 389	073692	04 01 03 02	36 g	1	pc(s)	299
924 395	076334	04 01 03 02	67 g	1	pc(s)	299
924 396	091016	04 01 03 02	32 g	1	pc(s)	299
925 001	047365	04 02 07 02	10 g	1	pc(s)	342
926 304	157125	04 02 01 01	45 g	1	pc(s)	315
927 010	410114	04 02 01 06	14 g	1	pc(s)	312
927 014	473010	04 02 01 06	14 g	1	pc(s)	313
927 022	410121	04 02 01 06	14 g	1	pc(s)	313
927 024	410138	04 02 01 06	15 g	1	pc(s)	313
927 025	410145	04 02 01 06	14 g	1	pc(s)	313
927 027	468689	04 02 01 06	14 g	1	pc(s)	313
927 042	410152	04 02 01 06	14 g	1	pc(s)	313
927 044	410169	04 02 01 06	14 g	1	pc(s)	313
927 045	410176	04 02 01 06	14 g	1	pc(s)	313
927 047	468672	04 02 01 06	14 g	1	pc(s)	313
927 070	410183	04 02 01 06	14 g	1	pc(s)	313
927 071	410190	04 02 01 06	14 g	1	pc(s)	313
927 074	468573	04 02 01 06	14 g	1	pc(s)	313
927 075	468580	04 02 01 06	14 g	1	pc(s)	313
927 084	410206	04 02 01 06	14 g	1	pc(s)	314
927 090	466531	04 02 01 06	14 g	1	pc(s)	314
927 210	405585	04 02 01 06	33 g	1	pc(s)	311
927 214	473003	04 02 01 06	33 g	1	pc(s)	312
927 222	405592	04 02 01 06	34 g	1	pc(s)	311
927 224	405608	04 02 01 06	34 g	1	pc(s)	311
927 225	405615	04 02 01 06	34 g	1	pc(s)	311
927 227	468658	04 02 01 06	34 g	1	pc(s)	311
927 242	405622	04 02 01 06	34 g	1	pc(s)	311
927 244	405639	04 02 01 06	34 g	1	pc(s)	311
927 245	405646	04 02 01 06	34 g	1	pc(s)	311
927 247	468665	04 02 01 06	34 g	1	pc(s)	311
927 270	405653	04 02 01 06	34 g	1	pc(s)	311
927 271	405660	04 02 01 06	34 g	1	pc(s)	312
927 274	468559	04 02 01 06	34 g	1	pc(s)	311
927 275	468566	04 02 01 06	34 g	1	pc(s)	312
927 284	405677	04 02 01 06	35 g	1	pc(s)	312
927 290	466524	04 02 01 06	36 g	1	pc(s)	312
927 305	454699	04 02 01 50	12 g	10	pc(s)	315
927 318	470644	04 02 01 50	32 g	1	pc(s)	314/327
927 408	463653	04 02 03 06	52 g	1	pc(s)	326
927 910	411739	04 02 02 06	33 g	1	pc(s)	325
927 922	411951	04 02 02 06	33 g	1	pc(s)	325
927 924	411968	04 02 02 06	33 g	1	pc(s)	325
927 925	411975	04 02 02 06	33 g	1	pc(s)	325
927 942	411777	04 02 02 06	33 g	1	pc(s)	325
927 944	411784	04 02 02 06	33 g	1	pc(s)	325
927 945	411807	04 02 02 06	33 g	1	pc(s)	325
927 954	485730	04 02 03 06	58 g	1	pc(s)	326
927 970	411982	04 02 02 06	33 g	1	pc(s)	325
927 971	411999	04 02 02 06	33 g	1	pc(s)	326
927 984	412002	04 02 02 06	33 g	1	pc(s)	326
927 987	485754	04 02 02 06	32 g	1	pc(s)	326
927 988	485747	04 02 02 06	32 g	1	pc(s)	326
927 989	485761	04 02 02 06	32 g	1	pc(s)	326
928 430	261389	04 02 03 02	110 g	1	pc(s)	328
928 440	280809	04 02 03 02	134 g	1	pc(s)	328
929 010	039940	04 02 08 01	68 g	1	pc(s)	345
929 039	135185	04 02 08 03	24 g	1	pc(s)	346
929 042	091030	04 02 08 03	39 g	1	pc(s)	346
929 043	091047	04 02 08 03	90 g	1	pc(s)	346
929 044	091054	04 02 08 03	86 g	1	pc(s)	346
929 045	091061	04 02 08 03	266 g	1	pc(s)	346
929 047	091085	04 02 08 03	467 g	1	pc(s)	346
929 095	113398	04 02 08 50	90 g	1	pc(s)	347
929 096	107212	04 02 08 50	203 g	1	pc(s)	347
929 100	102170	04 02 06 01	244 g	1	pc(s)	339
929 121	118935	04 02 06 01	109 g	1	pc(s)	339
929 126	242258	04 02 06 01	96 g	1	pc(s)	340
929 146	157156	04 02 08 03	471 g	1	pc(s)	346
929 148	157163	04 02 08 03	448 g	1	pc(s)	346
929 161	472921	04 02 06 01	180 g	1	pc(s)	339
929 166	472914	04 02 06 01	167 g	1	pc(s)	340
929 199	103313	04 02 06 50	350 g	1	pc(s)	340
929 200	344082	04 02 06 50	6 g	1	pc(s)	340/347
929 221	342866	04 02 06 01	606 g	1	pc(s)	339
929 309	472938	04 02 06 01	13 g	1	pc(s)	340
929 335	228672	04 02 06 50	1.38 kg	1	pc(s)	340
929 497	104143	04 02 08 50	2 g	1	pc(s)	347
929 498	104136	04 02 08 50	2 g	1	pc(s)	347
929 499	104129	04 02 08 50	2 g	1	pc(s)	347
929 921	098169	04 02 05 01	218 g	1	pc(s)	337
929 941	098152	04 02 05 01	173 g	1	pc(s)	337
929 950	137387	04 02 05 03	222 g	1	pc(s)	338
929 951	137394	04 02 05 03	222 g	1	pc(s)	338
929 960	098145	04 02 05 01	172 g	1	pc(s)	337
929 961	101784	04 02 05 02	169 g	1	pc(s)	337
929 962	101791	04 02 05 02	169 g	1	pc(s)	337
929 963	101807	04 02 05 02	172 g	1	pc(s)	337
929 964	101814	04 02 05 02	169 g	1	pc(s)	337
929 965	360778	04 02 05 01	171 g	1	pc(s)	337
929 969	127418	04 02 05 03	255 g	1	pc(s)	338
929 970	127425	04 02 05 03	248 g	1	pc(s)	338
929 971	120761	04 02 05 01	272 g	1	pc(s)	337
929 982	098695	04 02 05 50	36 g	1	pc(s)	338
929 984	098688	04 02 05 50	30 g	1	pc(s)	338
929 996	098244	04 02 05 50	13 g	1	pc(s)	338
941 110	137899	04 01 01 04	275 g	1	pc(s)	265
941 115	289208	04 01 01 04	285 g	1	pc(s)	265
941 116	373235	04 01 01 04	285 g	1	pc(s)	265
941 200	138209	04 01 01 04	250 g	1	pc(s)	264
941 205	289185	04 01 01 04	260 g	1	pc(s)	264
941 206	373839	04 01 01 04	260 g	1	pc(s)	264
941 300	133556	04 01 01 04	386 g	1	pc(s)	263
941 305	275317	04 01 01 04	361 g	1	pc(s)	263
941 306	328068	04 01 01 04	362 g	1	pc(s)	263
941 310	131798	04 01 01 04	480 g	1	pc(s)	264
941 315	275324	04 01 01 04	448 g	1	pc(s)	264
941 316	328075	04 01 01 04	450 g	1	pc(s)	264
941 400	133563	04 01 01 04	525 g	1	pc(s)	263
941 405	275331	04 01 01 04	428 g	1	pc(s)	263
941 406	328082	04 01 01 04	429 g	1	pc(s)	263
942 310	484108	04 01 02 01	344 g	1	pc(s)	274
942 341	477186	04 01 02 24	378 g	1	pc(s)	272
942 400	484115	04 01 02 01	408 g	1	pc(s)	274
942 405	477124	04 01 02 01	351 g	1	pc(s)	274
942 440	477148	04 01 02 24	377 g	1	pc(s)	272

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950 102	105621	04 01 02 13	184 g	1	pc(s)	292
950 112	105638	04 01 02 13	196 g	1	pc(s)	292
950 530	152960	04 01 02 09	300 g	1	pc(s)	294
950 531	152953	04 01 02 09	275 g	1	pc(s)	294
950 535	154988	04 01 02 09	310 g	1	pc(s)	294
950 536	154995	04 01 02 09	285 g	1	pc(s)	294
952 010	108356	04 01 02 01	43 g	1	pc(s)	278/280
952 010	108356	04 01 02 01	43 g	1	pc(s)	290
952 011	109773	04 01 02 01	32 g	1	pc(s)	280/290
952 012	109780	04 01 02 01	35 g	1	pc(s)	278/280
952 012	109780	04 01 02 01	35 g	1	pc(s)	290
952 013	109797	04 01 02 01	46 g	1	pc(s)	278/280
952 013	109797	04 01 02 01	46 g	1	pc(s)	290
952 014	108363	04 01 02 01	50 g	1	pc(s)	278/280
952 014	108363	04 01 02 01	50 g	1	pc(s)	290
952 015	109803	04 01 02 01	53 g	1	pc(s)	278/280
952 015	109803	04 01 02 01	53 g	1	pc(s)	290
952 016	109810	04 01 02 01	64 g	1	pc(s)	280/290
952 017	113329	04 01 02 01	63 g	1	pc(s)	278/280
952 017	113329	04 01 02 01	63 g	1	pc(s)	291
952 018	119482	04 01 02 01	36 g	1	pc(s)	280/290
952 022	376533	04 01 02 24	43 g	1	pc(s)	273/290
952 024	377356	04 01 02 24	52 g	1	pc(s)	273/290
952 025	127357	04 01 02 04	34 g	1	pc(s)	280/291
952 027	127364	04 01 02 04	40 g	1	pc(s)	280/291
952 028	387843	04 01 02 24	52 g	1	pc(s)	273
952 029	127371	04 01 02 04	44 g	1	pc(s)	280/291
952 030	108530	04 01 02 06	111 g	1	pc(s)	287
952 035	108547	04 01 02 06	114 g	1	pc(s)	287
952 041	141841	04 01 02 07	53 g	1	pc(s)	291/294
952 044	141858	04 01 02 07	62 g	1	pc(s)	291/294
952 048	327733	04 01 02 22	51 g	1	pc(s)	291/293
952 049	327740	04 01 02 22	60 g	1	pc(s)	291/293
952 050	108370	04 01 02 01	38 g	1	pc(s)	277/291
952 051	126442	04 01 02 07	49 g	1	pc(s)	291/294
952 054	127975	04 01 02 07	52 g	1	pc(s)	291/294
952 056	149106	04 01 02 08	71 g	1	pc(s)	294
952 060	108387	04 01 02 06	37 g	1	pc(s)	287/291
952 070	108493	04 01 02 02	130 g	1	pc(s)	279
952 071	109834	04 01 02 02	107 g	1	pc(s)	279
952 072	109858	04 01 02 02	109 g	1	pc(s)	279
952 073	109872	04 01 02 02	119 g	1	pc(s)	279
952 074	108516	04 01 02 02	123 g	1	pc(s)	279
952 075	109896	04 01 02 02	142 g	1	pc(s)	279
952 076	109919	04 01 02 02	136 g	1	pc(s)	279
952 077	119680	04 01 02 02	137 g	1	pc(s)	280
952 078	119468	04 01 02 02	109 g	1	pc(s)	279
952 080	127296	04 01 02 04	107 g	1	pc(s)	280
952 081	318182	04 01 02 01	38 g	1	pc(s)	278/291
952 082	127319	04 01 02 04	113 g	1	pc(s)	280
952 083	376540	04 01 02 24	51 g	1	pc(s)	273/291
952 084	127333	04 01 02 04	117 g	1	pc(s)	280
952 085	127302	04 01 02 04	111 g	1	pc(s)	280
952 087	127326	04 01 02 04	116 g	1	pc(s)	280
952 089	127340	04 01 02 04	121 g	1	pc(s)	280
952 090	108509	04 01 02 02	119 g	1	pc(s)	279
952 091	109841	04 01 02 02	110 g	1	pc(s)	279
952 092	109865	04 01 02 02	113 g	1	pc(s)	279
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952 094	108523	04 01 02 02	140 g	1	pc(s)	279
952 095	109902	04 01 02 02	140 g	1	pc(s)	279
952 096	109926	04 01 02 02	160 g	1	pc(s)	279
952 097	119697	04 01 02 02	140 g	1	pc(s)	280
952 098	119475	04 01 02 02	123 g	1	pc(s)	279
952 100	376526	04 01 02 24	128 g	1	pc(s)	273
952 110	108417	04 01 02 01	242 g	1	pc(s)	277
952 111	119420	04 01 02 01	232 g	1	pc(s)	277
952 113	387874	04 01 02 24	130 g	1	pc(s)	273
952 115	108424	04 01 02 01	228 g	1	pc(s)	277
952 116	119413	04 01 02 01	236 g	1	pc(s)	277
952 121	376663	04 01 02 24	250 g	1	pc(s)	273
952 122	387867	04 01 02 24	252 g	1	pc(s)	273
952 130	128521	04 01 02 01	247 g	1	pc(s)	277
952 135	128538	04 01 02 01	253 g	1	pc(s)	277
952 181	318175	04 01 02 01	228 g	1	pc(s)	277
952 185	318151	04 01 02 01	228 g	1	pc(s)	277
952 200	108394	04 01 02 01	229 g	1	pc(s)	276
952 201	123915	04 01 02 01	211 g	1	pc(s)	276
952 205	108400	04 01 02 01	232 g	1	pc(s)	277
952 206	123922	04 01 02 01	217 g	1	pc(s)	277
952 220	376656	04 01 02 24	241 g	1	pc(s)	273
952 300	108431	04 01 02 01	334 g	1	pc(s)	275
952 302	113305	04 01 02 01	386 g	1	pc(s)	278
952 303	120709	04 01 02 01	355 g	1	pc(s)	275
952 305	108448	04 01 02 01	328 g	1	pc(s)	275
952 307	113312	04 01 02 01	388 g	1	pc(s)	278
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952 316	119406	04 01 02 01	436 g	1	pc(s)	276
952 318	124011	04 01 02 01	306 g	1	pc(s)	275
952 319	124035	04 01 02 01	350 g	1	pc(s)	275
952 320	126794	04 01 02 01	416 g	1	pc(s)	276
952 323	133235	04 01 02 01	381 g	1	pc(s)	276
952 325	126800	04 01 02 01	425 g	1	pc(s)	276
952 328	133242	04 01 02 01	390 g	1	pc(s)	276
952 330	376649	04 01 02 24	354 g	1	pc(s)	272
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952 381	318144	04 01 02 01	405 g	1	pc(s)	276
952 385	318137	04 01 02 01	415 g	1	pc(s)	276
952 400	108455	04 01 02 01	414 g	1	pc(s)	275
952 403	128569	04 01 02 01	417 g	1	pc(s)	275
952 404	128545	04 01 02 01	474 g	1	pc(s)	275
952 405	108462	04 01 02 01	453 g	1	pc(s)	275
952 408	128576	04 01 02 01	426 g	1	pc(s)	275
952 409	128552	04 01 02 01	482 g	1	pc(s)	275
952 440	376625	04 01 02 24	449 g	1	pc(s)	272
952 510	126428	04 01 02 07	340 g	1	pc(s)	293
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952 514	224964	04 01 02 07	499 g	1	pc(s)	293
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952 519	224971	04 01 02 07	509 g	1	pc(s)	293
952 520	149069	04 01 02 08	501 g	1	pc(s)	294
952 525	149076	04 01 02 08	521 g	1	pc(s)	294
952 565	327719	04 01 02 22	322 g	1	pc(s)	293
952 567	327726	04 01 02 22	350 g	1	pc(s)	293
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952 610	149816	04 01 02 12	18 g	72	pc(s)	289
952 614	149847	04 01 02 12	18 g	72	pc(s)	289
952 641	146334	04 01 02 12	18 g	72	pc(s)	289
952 643	150737	04 01 02 12	18 g	72	pc(s)	289
952 644	149892	04 01 02 12	18 g	72	pc(s)	289
952 650	149823	04 01 02 12	18 g	72	pc(s)	289
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952 741	146341	04 01 02 12	18 g	72	pc(s)	289
952 743	150744	04 01 02 12	18 g	72	pc(s)	289
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952 910	266865	04 01 02 12	18 g	72	pc(s)	290
952 918	308336	04 01 02 14	112 g	1	pc(s)	281/291
952 920	322622	04 01 02 23	161 g	1	pc(s)	274
952 923	322639	04 01 02 23	167 g	1	pc(s)	274
952 926	322646	04 01 02 23	72 g	1	pc(s)	274/290
952 927	322653	04 01 02 23	78 g	1	pc(s)	274/290
952 938	264014	04 01 02 14	207 g	1	pc(s)	281
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952 941	228177	04 01 02 12	18 g	72	pc(s)	290
952 948	323919	04 01 02 12	18 g	72	pc(s)	290
952 949	323926	04 01 02 12	18 g	72	pc(s)	290
952 951	228184	04 01 02 12	18 g	72	pc(s)	290
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953 011	109636	04 01 03 01	27 g	1	pc(s)	297
953 012	109643	04 01 03 01	27 g	1	pc(s)	297
953 013	109650	04 01 03 01	25 g	1	pc(s)	297
953 014	109667	04 01 03 01	26 g	1	pc(s)	297
953 020	117440	04 01 03 01	59 g	1	pc(s)	297
953 021	353077	04 01 03 01	49 g	1	pc(s)	297
953 200	108301	04 01 03 01	81 g	1	pc(s)	296
953 201	109674	04 01 03 01	80 g	1	pc(s)	296
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953 204	109704	04 01 03 01	79 g	1	pc(s)	296
953 205	108318	04 01 03 01	84 g	1	pc(s)	296
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953 405	115774	04 01 03 01	151 g	1	pc(s)	297
953 406	353060	04 01 03 01	151 g	1	pc(s)	297
956 011	400887	04 01 01 01	167 g	1	pc(s)	262
956 020	510616	04 01 01 01	148 g	1	pc(s)	262
956 030	510609	04 01 01 01	229 g	1	pc(s)	262
956 031	410275	04 01 01 01	307 g	1	pc(s)	262
956 040	510593	04 01 01 01	294 g	1	pc(s)	262
956 115	400924	04 01 01 01	284 g	1	pc(s)	262
956 205	510579	04 01 01 01	271 g	1	pc(s)	261
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961 105	118683	04 01 01 14	320 g	1	pc(s)	271
961 110	118560	04 01 01 08	317 g	1	pc(s)	267
961 115	118577	04 01 01 08	321 g	1	pc(s)	267
961 120	118614	04 01 01 08	340 g	1	pc(s)	267
961 122	118652	04 01 01 08	358 g	1	pc(s)	270
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972 145	158658	04 01 02 15	172 g	1	pc(s)	288
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Notes

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*** GTIN (EAN code)**
In the catalogue, you will find the GTIN (EAN code) next to the Part No. For reasons of clarity, only the individual GTIN part is specified.

The country and DEHN code (40 13364) must be put in front of this number.

[1)] The country and DEHN code (69 42299) must be put in front of this number.

Abbreviations:

PG	Product Group
PU	Packing Unit
SU	Sales Unit (Piece, Meter, Millimeter, Kilogram, Gram, Liter, Set or Pair)
Pc(s)	Piece(s)
m	Meter
mm	Millimeter
kg	Kilogram
g	Gram
Ltr	Liter
Pa	Pair
Pak	Set
Weight	Weight per sales unit

Conversion Table

Conversion Table

Description	Part No.	Length	Weight	Weight	Length
Round wire **St/tZn**, 8 mm	**800 008**	1 m	393 g	1 kg	2.54 m
Round wire **St/tZn**, 10 mm	**800 010 / 800 310**	1 m	617 g	1 kg	1.62 m
Round wire **St/tZn**, with PVC sheath,, 8 mm	**800 108**	1 m	440 g	1 kg	2.30 m
Round wire **St/tZn**, with PVC sheath,, 10 mm	**800 110**	1 m	680 g	1 kg	1.48 m
Round wire **Al**, semi-rigid/soft, 8 mm	**840 008 / 840 018 840 108 / 840 028**	1 m	135 g	1 kg	7.40 m
Round wire **StSt (V2A) / (V4A)**, 8 mm	**860 008 / 860 908**	1 m	395 g	1 kg	2.54 m
Round wire **StSt (V2A) / (V4A)**, 10 mm	**860 010 / 860 020 860 910 / 860 920**	1 m	617 g	1 kg	1.62 m
Round wire **Cu**, semi-rigid/soft, 8 mm	**830 008 / 830 108 830 038**	1 m	448 g	1 kg	2.22 m
Strip **St/tZn**, 20 x 2.5 mm, Z500	**810 225**	1 m	400 g	1 kg	2.50 m
Strip **St/tZn**, 30 x 3.5 mm, Z500	**810 335 / 852 335**	1 m	840 g	1 kg	1.19 m
Strip **St/tZn**, 30 x 4 mm, Z500	**810 304**	1 m	960 g	1 kg	1.04 m
Strip **St/tZn**, 40 x 4 mm, Z500	**810 404**	1 m	1.280 kg	1 kg	0.78 m
Strip **St/tZn**, 40 x 5 mm, Z500	**810 405**	1 m	1.560 kg	1 kg	0.64 m
Strip **StSt (V2A) / (V4A)**, 30 x 3.5 mm	**860 335 / 860 325 860 900 / 860 925 861 325 / 861 335**	1 m	825 g	1 kg	1.21 m
Strip **StSt (V4A)** 40 x 4 mm	**860 404**	1 m	1.248 kg	1 kg	0.80 m
Strip **StSt (V4A)** 40 x 5 mm	**860 405**	1 m	1.560 kg	1 kg	0.64 m
Strip **Cu**, 20 x 2.5 mm	**831 225**	1 m	450 g	1 kg	2.22 m

Abbreviations / Symbols / Recommended values

Materials:

Abbreviation	Description
Al	Aluminium
AlMgSi	Aluminium magnesium silicon wrought alloy
Cu	Copper, electrical copper
Cu/bronze	Copper / Bronze
Cu/gal Sn	Copper, tin-coated
EVA Ethylen	Ethylene vinyl acetate copolymer
GRP	Glass-fibre reinforced plastic
GCI	Grey cast iron
K	Plastic material / Polyethylene / Polyamide / Polystyrene
Ms	Brass
Ms/gal Cu	Brass, copper-coated
Ms/gal Sn	Brass, tin-coated
StSt	Stainless steel Material No.: 1.4301 (Material No.: ASTM/AISI 304) Material No.: 1.4303 (Material No.: ASTM/AISI 305) Material No.: 1.4307 (Material No.: ASTM/AISI 304L)
StSt (V4A)	Stainless steel Material No.: 1.4401 (Material No.: ASTM/AISI 316) Material No.: 1.4404 (Material No.: ASTM/AISI 316L) Material No.: 1.4571 (Material No.: ASTM/AISI 316Ti)
StSt/gal Cu	Stainless steel, copper-coated
PA	Polyamide
PC	Polycarbonate
PE	Polyethylene
PP	Polypropylene
PS	Polystyrene
PVC	Polyvinyl chloride
ABS	Acrylonitrile butadiene styrene
RG	Red brass
Sn	Tin
St/bare	Steel (black)
St/gal Zn	Steel, galvanised
St/tZn	Steel, hot dip galvanised
St/Cu	Steel, copper-coated
MCI	Malleable cast iron
MCI/tZn	Malleable cast iron, hot dip galvanised
UP	Polyester (unsaturated)
XLPE	Cross-linked polyethylene
ZDC	Zinc die casting

Material combinations to prevent contact corrosion

air-termination systems / down conductors:	Construction parts:					
	Steel	Aluminium	Copper	StSt	Titanium	Tin
Steel (St/tZn)	yes	yes	no	yes	yes	yes
Aluminium	yes	yes	no	yes	yes	yes
Copper	no	no	yes	yes	no	yes
StSt	yes	yes	yes	yes	yes	yes
Titanium	yes	yes	no	yes	yes	yes
Tin	yes	yes	yes	yes	yes	yes

Conductor types:

Abbreviation	Conductor types
Fl	Flat conductor (strip)
Rd	Round conductor (round wire)

Key to symbols:

Screws	
	Half-round wood screw
	Countersunk head wood screw
	Wood screw with threaded head
	Cheese head screw
	Truss head screw
	Knurled screw
	Flat head screw
	Rounded head screw

Screw heads	
	Slot
	Hexagon
	Hexagon with slot
	Cross recessed
	Star drive
	Combined slot

Symbols	
	Test according to EN 62561-1 Please find more information on our website.
	Wind load calculation according to Eurocode (Catalogue information for Germany)
	HVI check
	New products

Recommended values:

Screw	Tightening torque
M5 / M6	≥ 4 Nm
M8	≥ 10 Nm
M10	≥ 20 Nm
M12	≥ 25 Nm
M16	≥ 25 Nm

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Lightning Protection / Earthing
Safety Equipment

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