



# Surge protection for emergency alarm systems

White Paper



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# Surge protection for emergency alarm systems

## White Paper



Emergency alarm systems (fire or burglar alarm systems) should actively report dangerous situations and remain passive when there is no danger. Malfunctioning (no alert in case of danger or an alarm when there is no danger) is both unwanted and expensive. False alarms produce costs to the tune of several hundred million euros each year. However, false alarms are also disruptive in other ways:

- ➔ If there is a spate of false alarms, the operator can no longer rely on the system and may question the point of such a system and the associated investment.
- ➔ Security staff start to ignore the alarm messages.
- ➔ Neighbours are disturbed by acoustic alarms.
- ➔ Emergency services (e.g. fire brigade) are called out unnecessarily
- ➔ If fire extinguishing systems are triggered, business operations are interrupted

All these factors cause unnecessary costs and can be prevented if possible causes of false alarms are recognised at an early design stage and eliminated by taking suitable preventive measures. For this purpose, the German Insurance Association (GDV) published the VdS 2833 guideline, which describes lightning and surge protection for emergency alarm systems. Coordinated lightning and surge protection prevents false alarms or destruction by atmospheric discharges or switching overvoltages and increases the availability of the systems.

The installer and operator should refer to the VdS guideline when designing, configuring and defining individual measures for those emergency alarm systems which are not required by any building legislation.

Many of today's emergency alarm systems have an increased surge immunity according to IEC 61000-4-5 (EN 61000-4-5) to transient overvoltages on the primary lines, secondary lines and mains voltage cables. Nevertheless, only external and internal lightning protection measures provide comprehensive protection against damage resulting from lightning strikes and surges (**Figures 1 to 3**).

### Monitoring principles

Various monitoring principles are used for emergency alarm systems:

- ➔ **Pulse polling technology**  
Information from the detector which has triggered the alarm is digitally transmitted. This allows one to identify the detector and its exact location (**Figure 1**).
- ➔ **Analogue ring**  
The addressable detectors define each detector in a ring. Line interruptions or short-circuits do not compromise the function (**Figure 2**).

### ➔ DC circuit technology

According to the closed-circuit principle, every alarm line is permanently monitored. If a detector in a line is triggered, the line is interrupted and an alarm produced in the alarm panel. However, it is only possible to identify the alarm line, not the individual detector (**Figure 3**).

Irrespective of the monitoring principle implemented, all cables extending between the different areas of the emergency alarm system must be integrated in the lightning and surge protection concept of the overall system.

### Recommended protection

The BLITZDUCTOR XT, type BXT ML2 BE, should be installed to protect two-wire alarm lines (approval from the manufacturer required, please contact DEHN SE + Co KG) and allows the connection of the earth drain wire by means of an EMC spring terminal. For cables with more than two wires, a four-wire version of type BXT ML4 BE is available. Surge protective devices are selected according to the voltage of the alarm lines, which is typically between 12 and 48 V (**Table 1**). The low internal resistance of BLITZDUCTOR arresters is also a clear advantage since the maximum resistances of the alarm lines may not be exceeded.

It is important to ensure that the nominal current of the surge protective devices is not exceeded at the outputs of the alarm panel (acoustic and visual alarm).

A telephone dialler is generally used if the alarm panel is connected to the exchange line of a fixed-line operator e.g. Deutsche Telekom. BLITZDUCTOR XT, type BXT ML2 BD 180, is ideally suited for this purpose. The power supply system can be protected using DEHNguard modular surge protective devices (**Table 1**).

Emergency alarm systems, which must be approved by the German Insurance Association (VdS approval), must comply with VDS 2095 (fire alarm systems), VDS 2311 (burglar alarm systems) and VDS 2833 (surge protective devices for emergency alarm systems).

The Executive Board or Executive Director of a company is, as a rule, ultimately responsible for health and safety. Legally, a system operator is a layman and, as such, unable to assess whether risks may arise from a technical solution. For this reason, it is the electricians providing the technical solutions who have a duty to ensure, in each individual case, that the solution provided really does fulfil the actual requirements.

# Surge protection for emergency alarm systems

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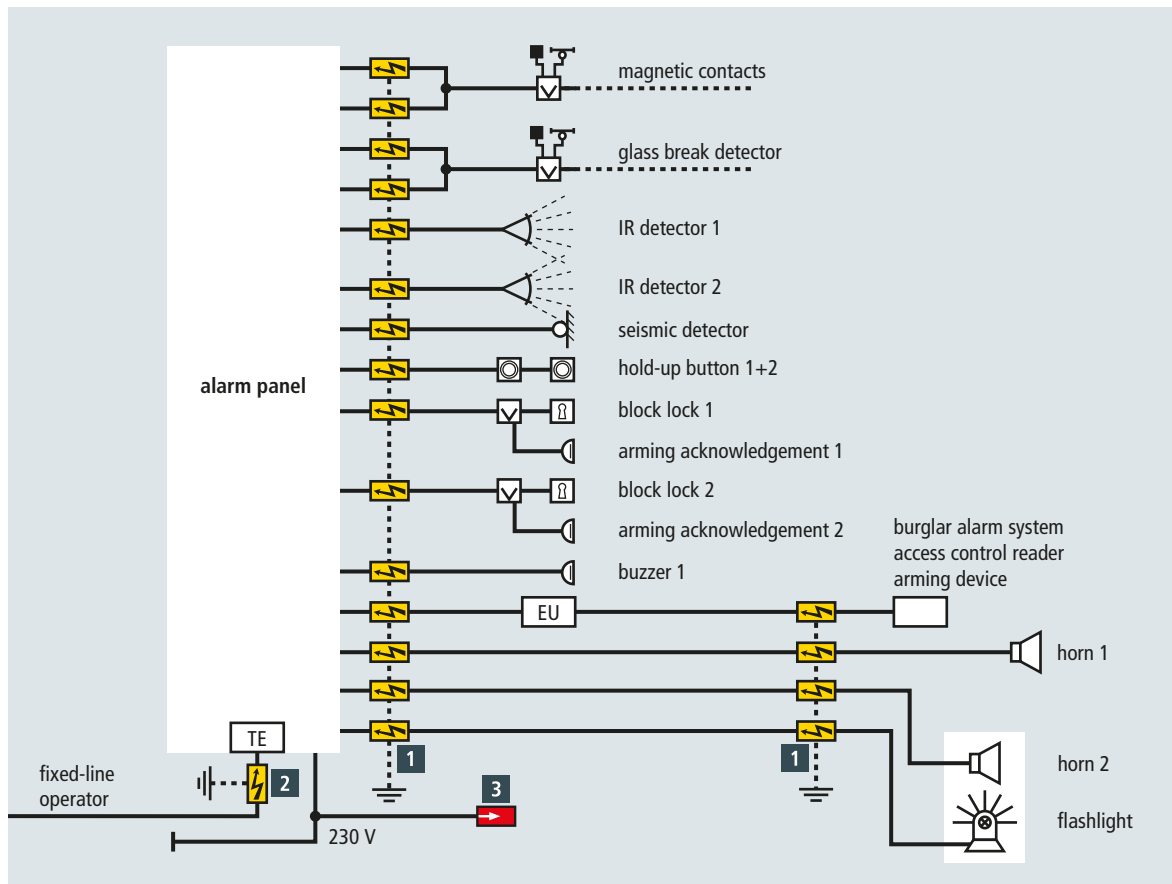


Figure 1 Lightning and surge protection for a burglar alarm system with pulse polling technology

	Protection for...	Surge protective device	Part No.
<b>Combined arresters for information technology systems at the boundaries from LPZ 0<sub>A</sub> (0<sub>B</sub>) ↔ LPZ 1 or area 0/A (0/B) ↔ area 1</b>			
1	Alarm line groups, external alarms with 24 V technology (in this case max. 0.75 A)	BXT ML2 BE S 24 (2 cores + earth drain wire) BXT ML4 BE 24 (4 cores) + BXT BAS + SAK BXT LR (for earth drain wire)	920 224 920 324 +920 300 +920 395
		BXT ML4 BD 48 + BXT BAS	920 345 +920 300
2	Exchange line U <sub>K0</sub> of the fixed-line operator	BXT ML2 BD 180 + BXT BAS	920 247 +920 300
<b>Surge arresters for power supply systems at the boundaries from LPZ 0<sub>B</sub> ↔ LPZ 1 or area 0/B ↔ area 1</b>			
3	AC TN-S system AC TT system	DG M TN 275 DG M TT 2P 275	952 200 952 110

Table 1 Combined arresters and surge arresters in Figures 1 to 3

# Surge protection for emergency alarm systems

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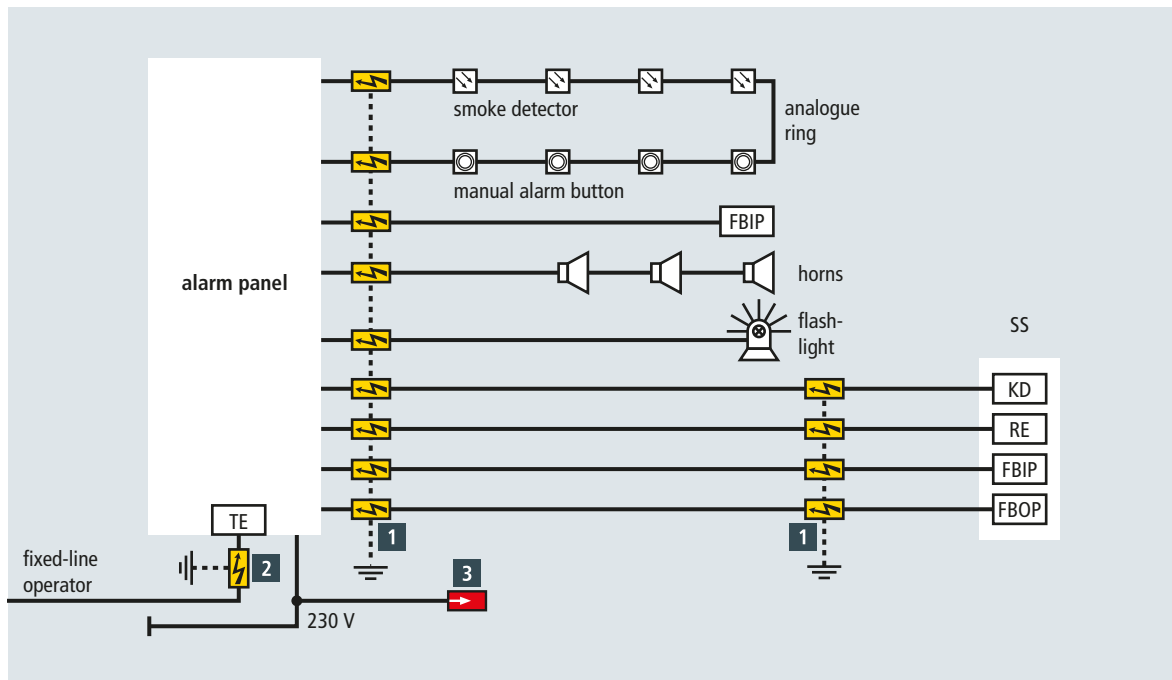


Figure 2 Lightning and surge protection for a fire alarm system with analogue ring technology

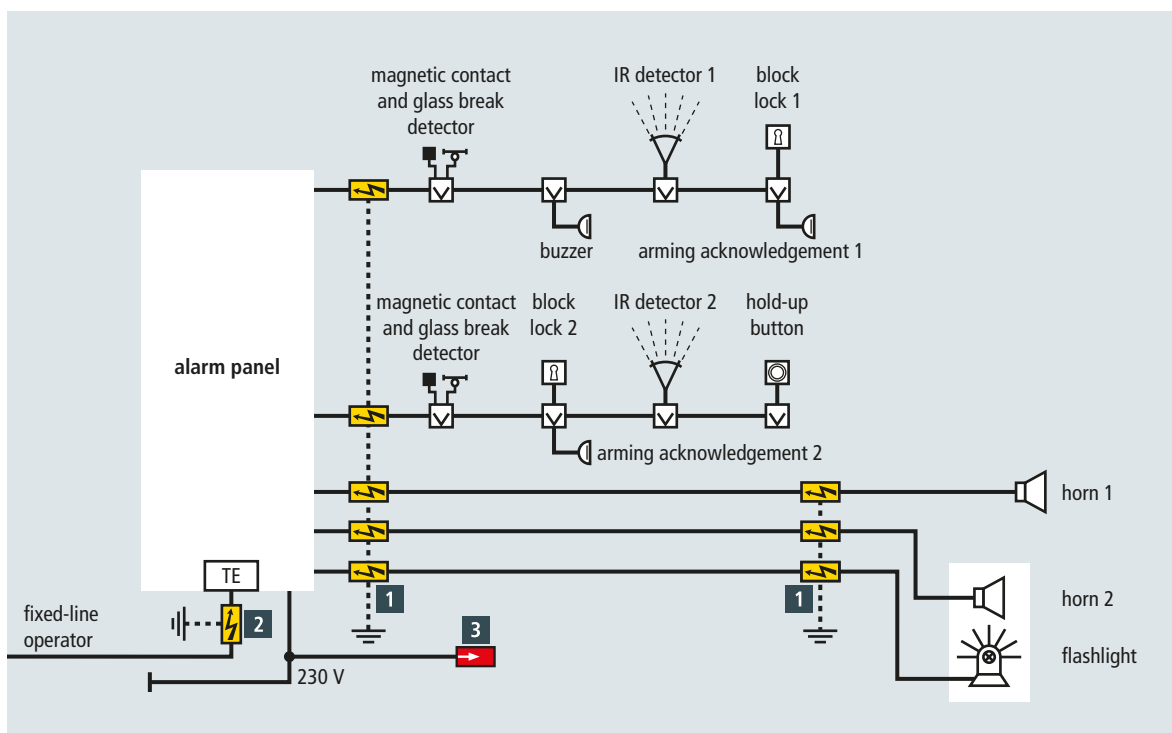


Figure 3 Lightning and surge protection for a burglar alarm system with DC circuit technology

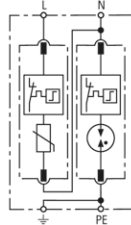
## DEHNguard

### DG M TT 2P 275 (952 110)

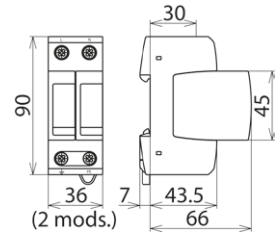
- Prewired complete unit consisting of a base part and plug-in protection modules
- High discharge capacity due to heavy-duty zinc oxide varistors / spark gaps
- High reliability due to "Thermo Dynamic Control" SPD monitoring device



Figure without obligation



Basic circuit diagram DG M TT 2P 275



Dimension drawing DG M TT 2P 275

Modular surge arrester for use in single-phase TT and TN systems (1+1 configuration).

Type	DG M TT 2P 275
Part No.	952 110
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Energy coordination with terminal equipment ( $\leq 10$ m)	type 2 + type 3
Nominal voltage (a.c.) ( $U_N$ )	230 V (50 / 60 Hz)
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 $\mu$ s) ( $I_n$ )	20 kA
Max. discharge current (8/20 $\mu$ s) ( $I_{max}$ )	40 kA
Lightning impulse current (10/350 $\mu$ s) [N-PE] ( $I_{imp}$ )	12 kA
Voltage protection level [L-N]/[N-PE] ( $U_P$ )	$\leq 1.5$ / $\leq 1.5$ kV
Voltage protection level [L-N] / [N-PE] at 5 kA ( $U_P$ )	$\leq 1$ / $\leq 1.5$ kV
Follow current extinguishing capability [N-PE] ( $I_f$ )	100 A <sub>rms</sub>
Response time [L-N] ( $t_A$ )	$\leq 25$ ns
Response time [N-PE] ( $t_A$ )	$\leq 100$ ns
Max. mains-side overcurrent protection	125 A gG
Short-circuit withstand capability for max. mains-side overcurrent protection ( $I_{SCCR}$ )	50 kA <sub>rms</sub>
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. – safe failure
Temporary overvoltage (TOV) [N-PE] ( $U_T$ ) – Characteristic	1200 V / 200 ms – withstand
Operating temperature range ( $T_U$ )	-40 °C ... +80 °C
Operating state / fault indication	green / red
Number of ports	1
Cross-sectional area (min.)	1.5 mm <sup>2</sup> solid / flexible
Cross-sectional area (max.)	35 mm <sup>2</sup> stranded / 25 mm <sup>2</sup> flexible
For mounting on	35 mm DIN rails acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IP 20
Capacity	2 module(s), DIN 43880
Approvals	KEMA, VDE, UL
Extended technical data:	-----
Voltage protection level [L-PE] ( $U_P$ )	1.5 kV
Weight	242 g
Customs tariff number (Comb. Nomenclature EU)	85363030
GTIN	4013364108417
PU	1 pc(s)

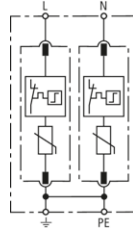
## DEHNguard

### DG M TN 275 (952 200)

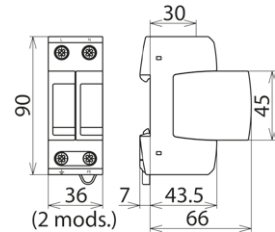
- Prewired complete unit consisting of a base part and plug-in protection modules
- High discharge capacity due to heavy-duty zinc oxide varistors / spark gaps
- High reliability due to "Thermo Dynamic Control" SPD monitoring device



Figure without obligation



Basic circuit diagram DG M TN 275



Dimension drawing DG M TN 275

Modular surge arrester for use in single-phase TN systems.

Type	DG M TN 275
Part No.	952 200
SPD according to EN 61643-11 / IEC 61643-11	type 2 / class II
Energy coordination with terminal equipment ( $\leq 10$ m)	type 2 + type 3
Nominal voltage (a.c.) ( $U_N$ )	230 V (50 / 60 Hz)
Max. continuous operating voltage (a.c.) ( $U_C$ )	275 V (50 / 60 Hz)
Nominal discharge current (8/20 $\mu$ s) ( $I_n$ )	20 kA
Max. discharge current (8/20 $\mu$ s) ( $I_{max}$ )	40 kA
Voltage protection level [L-PE]/[N-PE] ( $U_P$ )	$\leq 1.5$ / $\leq 1.5$ kV
Voltage protection level [L-PE] / [N-PE] at 5 kA ( $U_P$ )	$\leq 1$ / $\leq 1$ kV
Response time ( $t_A$ )	$\leq 25$ ns
Max. mains-side overcurrent protection	125 A gG
Short-circuit withstand capability for max. mains-side overcurrent protection ( $I_{SCCR}$ )	50 kA <sub>rms</sub>
Temporary overvoltage (TOV) ( $U_T$ ) – Characteristic	335 V / 5 sec. – withstand
Temporary overvoltage (TOV) ( $U_T$ ) – Characteristic	440 V / 120 min. – safe failure
Operating temperature range ( $T_U$ )	-40 °C ... +80 °C
Operating state / fault indication	green / red
Number of ports	1
Cross-sectional area (min.)	1.5 mm <sup>2</sup> solid / flexible
Cross-sectional area (max.)	35 mm <sup>2</sup> stranded / 25 mm <sup>2</sup> flexible
For mounting on	35 mm DIN rails acc. to EN 60715
Enclosure material	thermoplastic, red, UL 94 V-0
Place of installation	indoor installation
Degree of protection	IP 20
Capacity	2 module(s), DIN 43880
Approvals	KEMA, VDE, UL
Weight	229 g
Customs tariff number (Comb. Nomenclature EU)	85363030
GTIN	4013364108394
PU	1 pc(s)

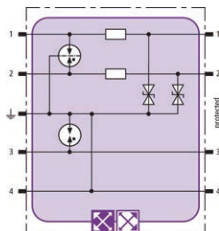
## BLITZDUCTOR XT

### BXT ML2 BE S 24 (920 224)

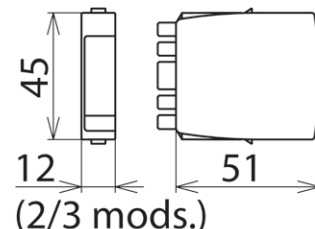
- LifeCheck SPD monitoring function
- Optimal protection of two single lines and the cable shield
- For use in conformity with the lightning protection zone concept at the boundaries from  $0_A -2$  and higher



Figure without obligation



Basic circuit diagram BXT ML2 BE S 24



Dimension drawing BXT ML2 BE S 24

Space-saving combined lightning current and surge arrester module with LifeCheck feature 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.

Type	BXT ML2 BE S 24
Part No.	920 224
SPD monitoring system	LifeCheck
SPD class	<b>TYPE 1 P</b>
Nominal voltage ( $U_N$ )	24 V
Max. continuous operating voltage (d.c.) ( $U_c$ )	33 V
Max. continuous operating voltage (a.c.) ( $U_c$ )	23.3 V
Nominal current at 45 °C ( $I_L$ )	0.75 A
D1 Total lightning impulse current (10/350 $\mu$ s) ( $I_{imp}$ )	9 kA
D1 Lightning impulse current (10/350 $\mu$ s) per line ( $I_{imp}$ )	2.5 kA
C2 Total nominal discharge current (8/20 $\mu$ s) ( $I_n$ )	20 kA
C2 Nominal discharge current (8/20 $\mu$ s) per line ( $I_n$ )	10 kA
Voltage protection level line-line for $I_{imp}$ D1 ( $U_p$ )	$\leq 102$ V
Voltage protection level line-PG for $I_{imp}$ D1 ( $U_p$ )	$\leq 66$ V
Voltage protection level line-line at 1 kV/ $\mu$ s C3 ( $U_p$ )	$\leq 90$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 ( $U_p$ )	$\leq 45$ V
Series resistance per line	1.8 ohm(s)
Cut-off frequency line-PG ( $f_c$ )	6.8 MHz
Capacitance line-line (C)	$\leq 0.5$ nF
Capacitance line-PG (C)	$\leq 1.0$ nF
Operating temperature range ( $T_U$ )	-40 °C ... +80 °C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	BXT BAS / BSP BAS 4 base part
Earthing via	BXT BAS / BSP BAS 4 base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
Approvals	CSA, EAC, ATEX, IECEx, CSA & USA Hazloc, SIL
SIL classification	up to SIL3 <sup>*</sup>
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc
CSA & USA Hazloc approvals (1)	2516389: Class I Div. 2 GP A, B, C, D T4
CSA & USA Hazloc approvals (2)	2516389: Class I Zone 2, AEx nA IIC T4
Weight	37 g
Customs tariff number (Comb. Nomenclature EU)	85363010
GTIN	4013364117785
PU	1 pc(s)

<sup>\*</sup>For more detailed information, please visit [www.dehn-international.com](http://www.dehn-international.com).

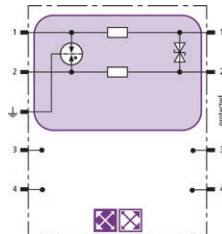
## BLITZDUCTOR XT

### BXT ML2 BD 180 (920 247)

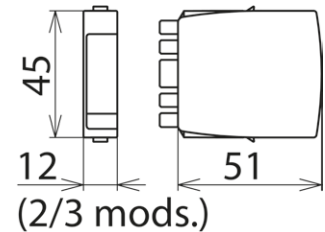
- LifeCheck SPD monitoring function
- Optimal protection of one pair
- For installation in conformity with the lightning protection zone concept at the boundaries from  $0_A - 2$  and higher



Figure without obligation



Basic circuit diagram BXT ML2 BD 180



Dimension drawing BXT ML2 BD 180

Space-saving combined lightning current and surge arrester module with LifeCheck feature 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 monitoring system	LifeCheck
SPD class	<b>TYPE 1P2</b>
Nominal voltage ( $U_N$ )	180 V
Max. continuous operating voltage (d.c.) ( $U_c$ )	180 V
Max. continuous operating voltage (a.c.) ( $U_c$ )	127 V
Nominal current at 45 °C ( $I_L$ )	0.75 A
D1 Total lightning impulse current (10/350 $\mu$ s) ( $I_{imp}$ )	5 kA
D1 Lightning impulse current (10/350 $\mu$ s) per line ( $I_{imp}$ )	2.5 kA
C2 Total nominal discharge current (8/20 $\mu$ s) ( $I_n$ )	20 kA
C2 Nominal discharge current (8/20 $\mu$ s) per line ( $I_n$ )	10 kA
Voltage protection level line-line for $I_{imp}$ D1 ( $U_p$ )	$\leq 270$ V
Voltage protection level line-PG for $I_{imp}$ D1 ( $U_p$ )	$\leq 550$ V
Voltage protection level line-line at 1 kV/ $\mu$ s C3 ( $U_p$ )	$\leq 250$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 ( $U_p$ )	$\leq 550$ V
Series resistance per line	1.8 ohm(s)
Cut-off frequency line-line ( $f_c$ )	25.0 MHz
Capacitance line-line (C)	$\leq 240$ pF
Capacitance line-PG (C)	$\leq 16$ pF
Operating temperature range ( $T_U$ )	-40 °C ... +80 °C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	BXT BAS / BSP BAS 4 base part
Earthing via	BXT BAS / BSP BAS 4 base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
Approvals	CSA, EAC, ATEX, IECEx, CSA & USA Hazloc, SIL
SIL classification	up to SIL3 <sup>*)</sup>
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc
CSA & USA Hazloc approvals (1)	2516389: Class I Div. 2 GP A, B, C, D T4
CSA & USA Hazloc approvals (2)	2516389: Class I Zone 2, AEx nA IIC T4
Weight	43 g
Customs tariff number (Comb. Nomenclature EU)	85363010
GTIN	4013364116078
PU	1 pc(s)

<sup>\*)</sup> For more detailed information, please visit [www.dehn-international.com](http://www.dehn-international.com).



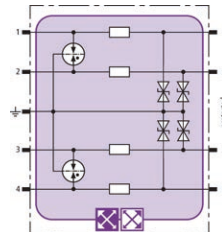
## BLITZDUCTOR XT

### BXT ML4 BE 24 (920 324)

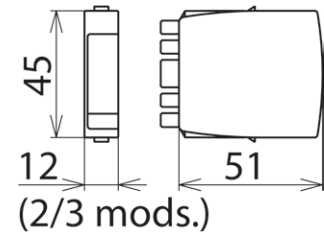
- LifeCheck SPD monitoring function
- Optimal protection of four single lines
- For installation in conformity with the lightning protection zone concept at the boundaries from  $0_A - 2$  and higher



Figure without obligation



Basic circuit diagram BXT ML4 BE 24



Dimension drawing BXT ML4 BE 24

Space-saving combined lightning current and surge arrester module with LifeCheck feature 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.

Type	BXT ML4 BE 24
Part No.	920 324
SPD monitoring system	LifeCheck
SPD class	<b>TYPE 1</b> <b>PI</b>
Nominal voltage ( $U_N$ )	24 V
Max. continuous operating voltage (d.c.) ( $U_c$ )	33 V
Max. continuous operating voltage (a.c.) ( $U_c$ )	23.3 V
Nominal current at 45 °C ( $I_L$ )	0.75 A
D1 Total lightning impulse current (10/350 $\mu$ s) ( $I_{imp}$ )	10 kA
D1 Lightning impulse current (10/350 $\mu$ s) per line ( $I_{imp}$ )	2.5 kA
C2 Total nominal discharge current (8/20 $\mu$ s) ( $I_n$ )	20 kA
C2 Nominal discharge current (8/20 $\mu$ s) per line ( $I_n$ )	10 kA
Voltage protection level line-line for $I_{imp}$ D1 ( $U_p$ )	$\leq 102$ V
Voltage protection level line-PG for $I_{imp}$ D1 ( $U_p$ )	$\leq 66$ V
Voltage protection level line-line at 1 kV/ $\mu$ s C3 ( $U_p$ )	$\leq 90$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 ( $U_p$ )	$\leq 45$ V
Series resistance per line	1.8 ohm(s)
Cut-off frequency line-PG ( $f_c$ )	6.8 MHz
Capacitance line-line (C)	$\leq 0.5$ nF
Capacitance line-PG (C)	$\leq 1.0$ nF
Operating temperature range ( $T_U$ )	-40 °C ... +80 °C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	BXT BAS / BSP BAS 4 base part
Earthing via	BXT BAS / BSP BAS 4 base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
Approvals	CSA, UL, EAC, ATEX, IECEx, CSA & USA Hazloc, SIL
SIL classification	up to SIL3 <sup>*)</sup>
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc
CSA & USA Hazloc approvals (1)	2516389: Class I Div. 2 GP A, B, C, D T4
CSA & USA Hazloc approvals (2)	2516389: Class I Zone 2, AEx nA IIC T4
Weight	38 g
Customs tariff number (Comb. Nomenclature EU)	85363010
GTIN	4013364109056
PU	1 pc(s)

<sup>\*)</sup> For more detailed information, please visit [www.dehn-international.com](http://www.dehn-international.com).

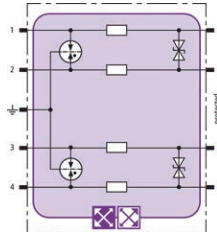
## BLITZDUCTOR XT

### BXT ML4 BD 48 (920 345)

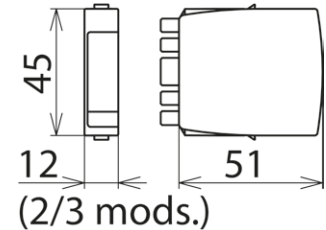
- LifeCheck SPD monitoring function
- Optimal protection of two pairs
- For installation in conformity with the lightning protection zone concept at the boundaries from  $0_A -2$  and higher



Figure without obligation



Basic circuit diagram BXT ML4 BD 48



Dimension drawing BXT ML4 BD 48

Space-saving combined lightning current and surge arrester module with LifeCheck feature 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.

Type	BXT ML4 BD 48
Part No.	920 345
SPD monitoring system	LifeCheck
SPD class	<b>TYPE 1 P</b>
Nominal voltage ( $U_N$ )	48 V
Max. continuous operating voltage (d.c.) ( $U_c$ )	54 V
Max. continuous operating voltage (a.c.) ( $U_c$ )	38.1 V
Nominal current at 45 °C ( $I_L$ )	1.0 A
D1 Total lightning impulse current (10/350 $\mu$ s) ( $I_{imp}$ )	10 kA
D1 Lightning impulse current (10/350 $\mu$ s) per line ( $I_{imp}$ )	2.5 kA
C2 Total nominal discharge current (8/20 $\mu$ s) ( $I_n$ )	20 kA
C2 Nominal discharge current (8/20 $\mu$ s) per line ( $I_n$ )	10 kA
Voltage protection level line-line for $I_{imp}$ D1 ( $U_p$ )	$\leq 80$ V
Voltage protection level line-PG for $I_{imp}$ D1 ( $U_p$ )	$\leq 550$ V
Voltage protection level line-line at 1 kV/ $\mu$ s C3 ( $U_p$ )	$\leq 70$ V
Voltage protection level line-PG at 1 kV/ $\mu$ s C3 ( $U_p$ )	$\leq 550$ V
Series resistance per line	1.0 ohm(s)
Cut-off frequency line-line ( $f_c$ )	8.7 MHz
Capacitance line-line (C)	$\leq 0.7$ nF
Capacitance line-PG (C)	$\leq 16$ pF
Operating temperature range ( $T_U$ )	-40 °C ... +80 °C
Degree of protection (with plugged-in protection module)	IP 20
Pluggable into	BXT BAS / BSP BAS 4 base part
Earthing via	BXT BAS / BSP BAS 4 base part
Enclosure material	polyamide PA 6.6
Colour	yellow
Test standards	IEC 61643-21 / EN 61643-21, UL 497B
Approvals	CSA, UL, EAC, ATEX, IECEx, CSA & USA Hazloc, SIL
SIL classification	up to SIL3 <sup>*</sup>
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc
IECEx approvals	DEK 11.0032X: Ex nA IIC T4 Gc
CSA & USA Hazloc approvals (1)	2516389: Class I Div. 2 GP A, B, C, D T4
CSA & USA Hazloc approvals (2)	2516389: Class I Zone 2, AEx nA IIC T4
Weight	24 g
Customs tariff number (Comb. Nomenclature EU)	85363010
GTIN	4013364108998
PU	1 pc(s)

<sup>\*</sup>For more detailed information, please visit [www.dehn-international.com](http://www.dehn-international.com).

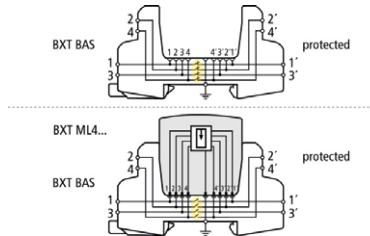
## BLITZDUCTOR XT

### BXT BAS (920 300)

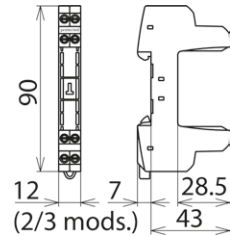
- Four-pole version for universal use with all types of BSP and BXT / BXTU protection modules
- No signal interruption if the protection module is removed
- Universal design without protection elements



Figure without obligation



Basic circuit diagram with and without plugged-in module



Dimension drawing 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 Part No.	BXT BAS 920 300
Operating temperature range (T <sub>U</sub> )	-40 °C ... +80 °C
Degree of protection	IP 20
For mounting on	35 mm DIN rails acc. to EN 60715
Connection (input / output)	screw / screw
Signal disconnection	no
Cross-sectional area, solid	0.08-4 mm <sup>2</sup>
Cross-sectional area, flexible	0.08-2.5 mm <sup>2</sup>
Tightening torque (terminals)	0.4 Nm
Earthing via	35 mm DIN rails acc. to EN 60715
Enclosure material	polyamide PA 6.6
Colour	yellow
ATEX approvals	DEKRA 11ATEX0089 X: II 3 G Ex nA IIC T4 Gc <sup>*)</sup>
IECEX approvals	DEK 11.0032X: Ex nA IIC T4 Gc <sup>*)</sup>
Approvals	CSA, UL, EAC, ATEX, IECEX <sup>*)</sup>
Weight	34 g
Customs tariff number (Comb. Nomenclature EU)	85369010
GTIN	4013364109179
PU	1 pc(s)

<sup>\*)</sup> only in connection with an approved protection module

## BLITZDUCTOR XT

### SAK BXT LR (920 395)

- Capable of carrying lightning current
- Low-impedance flat conductor
- Flexible spring terminal

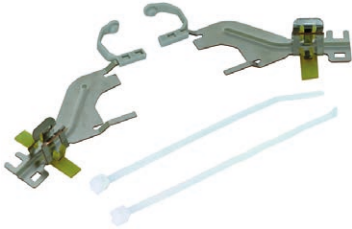
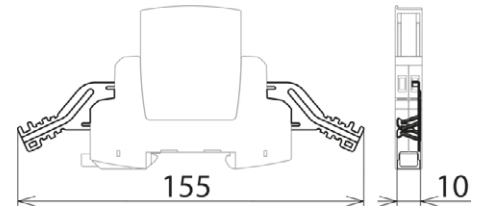


Figure without obligation



Dimension drawing SAK BXT LR

Two spring terminals for the protected and unprotected side of a BLITZDUCTOR BSP / 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. Suitable for BXT(U) ML2 ...S ... / BSP M2 ... types.

Type Part No.	SAK BXT LR 920 395
D1 Lightning impulse current (10/350 µs)	5 kA
Plugs into	terminal BXT BAS / BSP BAS 4
Clamping range	3-10 mm
Colour	bare surface
Accessories	insulating caps, cable ties, insulating strips
Weight	12 g/Sa
Customs tariff number (Comb. Nomenclature EU)	85389099
GTIN	4013364118157
PU	1 Sa

[www.dehn-international.com/partners](http://www.dehn-international.com/partners)



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