Surge Protection

New products and updates valid as of April 1, 2019
Everything new in a nutshell
As a supplement to the current “Surge Protection” catalogue, this brochure offers you a quick overview of the latest products and most important new features.

What is the point of surge protection?
Surge protective devices (SPDs) protect electrical equipment and systems from damage caused by overvoltages and establish equipotential bonding. This optimises the availability of systems and devices and improves safety when dealing with electricity.

With Red/Line products you protect power technology, with Yellow Line products data, information and measuring and control technology.

DEHN protects.
For more than 100 years, DEHN products have provided reliable protection against the dangers posed by lightning and surges.

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Only a click away
Our online product catalogue gives you quick and easy access to our complete product range. Particularly practical: from the product page, all relevant information sheets, CAD data, tender specifications and installation instructions are only one click away.

www.dehn-international.com

DEHNshield

• Application-optimised and prewired combined lightning current and surge arrester for TT and TN-S systems
• Compact design due to space-saving spark gap technology with a width of only one module / pole
• Fulfils the minimum requirements on the lightning current discharge capacity according to IEC 60364-5-53
• Allows compact lightning equipotential bonding including protection of terminal equipment
• Discharge capacity up to 50 kA (10/350 μs)
• Operating state / fault indication by green/red indicator flag in the inspection window
• High follow current extinguishing capacity (Ith = 25 kA rms)

DEHNshield TNC 255: Application-optimised combined lightning current and surge arrester for TT and TN-S systems
DEHNshield TNS 255: Application-optimised combined lightning current and surge arrester for TN-S systems
DEHNshield TT 255: Application-optimised combined lightning current and surge arrester for TT and TN-S systems (3+1 configuration)
DEHNshield TN 255: Application-optimised combined lightning current and surge arrester for single-phase TN systems
DEHNshield TT 2P 255: Application-optimised combined lightning current and surge arrester for single-phase TT and TN systems (1+1 configuration)
DEHNshield ... FM: With remote signalling contact for monitoring device (floating changeover contact)

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); FM version with floating remote signalling contact.

DEHNshield TNC Basic FM
Application-optimised and prewired combined lightning current and surge arrester for TN-C systems; with floating remote signalling contact.
## DEHNshield

### DEHNshield TNS (FM)

<table>
<thead>
<tr>
<th>Type DSH</th>
<th>TNS 255</th>
<th>TNS 255 FM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>341 460</td>
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</table>

- SPD according to EN 61643-11 / IEC 61643-11 type 1 + type 2 / class I + class II
- Max. continuous operating voltage (a.c.) (Uc) 255 V (50 / 60 Hz) 255 V (50 / 60 Hz)
- Lightning impulse current (10/350 µs) [L1+L2+L3+N-PE] (Iimp) 12.5 kA 12.5 kA
- Voltage protection level [L-PE]/[N-PE] (Uimp) ≤ 1.5 kV ≤ 1.5 kV
- Max. mains-side overcurrent protection 160 A gG 160 A gG
- Approvals KEMA, VDE, UL KEMA, VDE
- Type of remote signalling contact –– changeover contact

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- Approvals VDE
- Type of remote signalling contact –– changeover contact

### Combined Arresters – Type 1 + Type 2

- Application-optimised and prewired combined lightning current and surge arrester for TT and TN-S systems with a nominal voltage of 230 V (3+1 configuration); FM version with floating remote signalling contact.

- Application-optimised and prewired combined lightning current and surge arrester for TN-S systems; with floating remote signalling contact.

- 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); FM version with floating remote signalling contact.
Surge protection with ACI technology: The highest level of safety

The new ACI technology improves the safety of your electrical systems. The integrated switch/spark gap combination reduces complexity and has a firm grip on future requirements.

Your advantages with DEHNguard ACI:

- Safe dimensioning: eliminate mistakes
- Connection cross-section of just 6 mm²: easier to install
- TOV withstand: increase availability
- Future energy structure: fulfil requirements
- Zero leakage current: increase arrester lifetime

DEHNguard modular with Advanced Circuit Interruption (safe dimensioning)

- New technology “Advanced Circuit Interruption” (ACI) integrated in the protection module, consists of a switch/spark gap combination
- Due to ACI technology no external backup fuse required
- Small connection cross-sections (6 mm²) absolutely sufficient
- TOV withstand also at 440 V (AC)
- High system reliability, no tripping of 32 A gG fuses
- Zero leakage current due to galvanic isolation by ACI switch unit
- Energy coordination with other arresters of the RedLine product family

WINNER 2019
SSB INNOVATION AWARD

For protecting low voltage consumer’s installations against surges. For installation in conformity with the lightning protection zone concept at the boundaries from 0B – 1 and higher.

DEHNguard M TNC ACI 275 FM: Modular surge arrester with integrated ACI technology for TN-C systems
DEHNguard M TN5 ACI 275 FM: With integrated ACI technology for TN-S systems
DEHNguard M TT ACI ... FM: With integrated ACI technology for TT and TN-S systems (3+1 configuration)
DEHNguard M TN ACI 275 FM: With integrated ACI technology for 230 V TN systems
DEHNguard M TT 2P ACI ... FM: With integrated ACI technology for 230 V TT and TN systems (1+1 configuration)
DEHNguard S ACI ... FM: Single-pole, modular surge arrester with integrated ACI technology
DEHNguard M/S ... ACI ... FM: With remote signalling contact for monitoring device (floating changeover contact)

The new modular surge arrester of the DEHNguard ACI product family provides safety at the highest level. This is down to ACI technology (Advanced Circuit Interruption) which replaces the backup fuse with a switch/spark-gap combination connected in series with a high capacity varistor.

At the end of the service life of the ACI surge arrester, the new technology reduces any fault current to such an extent that not even the smallest fuses in the system are tripped. This means much greater availability and operational safety for the system in comparison with standard type 2 arresters with external fuses.

The new internal arrester backup fuse has further advantages:

- Safe dimensioning: eliminate mistakes
- Connection cross-section of just 6 mm²: easier to install
- TOV withstand: increase availability
- Future energy structure: fulfil requirements
- Zero leakage current: increase arrester lifetime

The construction of DEHNguard ACI means that there are no leakage currents. This prevents premature ageing of the protective device and avoids wasting time and money on troubleshooting and repairing unnecessary damage.

TOV withstand: Increase availability
Temporary overvoltages (e.g. caused by loss of neutral) can destroy conventional surge protective devices. The new DEHNguard ACI has a much better TOV withstand and provides protection without device failure even at 440 V (AC). This increases the availability of your system and avoids wasting time and money on troubleshooting and repairing unnecessary damage.

Zero leakage current: Increase service lifetime
The construction of DEHNguard ACI means that there are no leakage currents. This prevents premature ageing of the protective device and avoids wasting time and money on replacing them ahead of schedule. DEHNguard ACI arresters also contribute towards operational safety because they prevent the accidental tripping of the insulation monitoring.

Transition in the energy sector: Fulfil future requirements
With ACI arresters you are safely equipped for the future – even if network parameters change, e.g., as a result of renewable power generation. Isolated grids and storage systems are changing the short-circuiting conditions.

DEHNguard ACI – Maximum system availability
System downtimes caused by an upstream safety device tripping or being switched back on are a thing of the past. This means much greater availability and operational safety for the system in comparison with standard type 2 arresters with external fuses.

Find out more:
www.dehn/acie
# Surge Arresters – Type 2

DEHNguard modular with Advanced Circuit Interruption (safe dimensioning)

<table>
<thead>
<tr>
<th>Type</th>
<th>DG MOD ACI 275</th>
<th>DG MOD ACI 385</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>952 024</td>
<td>952 028</td>
</tr>
<tr>
<td>Max. continuous operating voltage (a.c.) [L-N]</td>
<td>275 V</td>
<td>385 V</td>
</tr>
</tbody>
</table>

**Spark-Gap-Based Protection Module for DEHNguard M ACI**

<table>
<thead>
<tr>
<th>Type</th>
<th>DG MOD HA NPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>952 022</td>
</tr>
<tr>
<td>Max. continuous operating voltage (a.c.) [L-N]</td>
<td>275 V</td>
</tr>
</tbody>
</table>

**DEHNguard ME/SE DC ... (FM)**

Modular combined arrester for DC applications, with floating remote signalling contact.

## Accessories for DEHNguard modular with Advanced Circuit Interruption (safe dimensioning)

### Combined Switch / Spark Gap Protection Module for DEHNguard ACI

<table>
<thead>
<tr>
<th>Type</th>
<th>DG MOD A ACI</th>
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### N-PE Spark-Gap-Based Protection Module for DEHNguard M ACI

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## Surge Arresters – Type 2

**DEHNguard modular with Advanced Circuit Interruption (safe dimensioning)**

**Accessories**

### Spark-Gap-Based Protection Module for DEHNguard ACI

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**DEHNguard ME DC ... (FM)**

Modular combined arrester for DC applications, with floating remote signalling contact.

### Spark-Gap-Based Protection Module for DEHNguard ME DC

<table>
<thead>
<tr>
<th>Type</th>
<th>DG MOD DC Y 500</th>
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<tbody>
<tr>
<td>Part No.</td>
<td>972 051</td>
</tr>
<tr>
<td>Max. continuous operating voltage (a.c.) [L-N]</td>
<td>950 V</td>
</tr>
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</table>

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## General Accessories

### Impulse Counter IPC P3

<table>
<thead>
<tr>
<th>Type</th>
<th>IPC P3</th>
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<tbody>
<tr>
<td>Part No.</td>
<td>955 511</td>
</tr>
<tr>
<td>Response threshold for impulse currents (rise time ≥ 8 µs)</td>
<td>0.9 – 1.0 kV</td>
</tr>
<tr>
<td>LCD display</td>
<td>electronic counter 0-999</td>
</tr>
<tr>
<td>Power supply</td>
<td>3 V lithium battery (CR17335) included in delivery, replaceable, battery life of c. 3 years</td>
</tr>
<tr>
<td>Setting device</td>
<td>button on the device for setting the counter (e.g. after replacing a battery)</td>
</tr>
<tr>
<td>Resetting device</td>
<td>button on the device for resetting the counter to 0</td>
</tr>
<tr>
<td>Dimensions (sensor)</td>
<td>inner Ø 7/8 mm</td>
</tr>
<tr>
<td>Accessories included in delivery</td>
<td>3 V lithium battery (CR17335); cable tie (for fixing the sensor)</td>
</tr>
</tbody>
</table>
SPDs for Telecommunication and Data Networks

DEHNpatch outdoor CLE IP66

- Indoor / outdoor applications (IP 66)
- GB/T Ethernet applications and structured cabling systems according to class E up to 250 MHz
- Power over Ethernet IEEE 802.3 (up to PoE++ / 4PPoE)
- For installation in conformity with the lightning protection concept at the boundaries from 0A – 2 and higher

Safe in rain, ice, snow, sand and dust

DEHNpatch outdoor: the installation of surge protective devices for outdoor ethernet applications has never been easier.

Surge arrester DEHNpatch outdoor

- Functional enclosure for reliable operation in rough environments (IP 66)
- No additional EB conductor needed when mounted on a metal structure
- Easily mounted with the universal mounting bracket
- High protection capacity – lightning current discharge capacity of in total 4 kA (10/350 μs)

For quick answers to your questions, contact:

Partners worldwide:
International customer service:
+49 9181 906-1462
international@dehn.de

For technical questions:
+49 9181 906 1740
its@dehn.de

Selecting specific products – further product catalogue

DEHN protects. – Your one-stop supplier of system solutions for surge protection, lightning protection/earthing and safety equipment.

You can download all our catalogues here:
www.dehn-international.com/downloads