MCF Compact, V50 and V20

The team against surge voltages
Top of the agenda at the BET Test Centre is the expert testing of OBO’s surge voltage and lightning protection systems. This also includes the testing of new developments, as well as the modifications to existing OBO lightning protection components, surge protective devices and lightning arresters.
# Safety with surge protective devices

Surge protective devices (SPDs) increase safety and prevent dangerous surge voltage from entering the building via the power and telecommunication lines. The SPDs reduce the surge voltage to a level which is not dangerous to terminals. This means they prevent short circuits and the resulting risk of fire.

## Surge voltage damage

Damage from surge voltages occurs not only from direct lightning strikes, which can cause significant destruction. Serious damage to electronic devices and systems is more commonly caused by surge voltages from lightning strikes within a radius of two kilometres.

Building insurance generally offers protection against the costs of a direct lightning strike. For example, it will cover damage to the roof, masonry and also surge damage to permanently installed electrical installations, such as the heating controller. Surge damage to portable terminals such as computers, coffee machines or the TV is covered by the contents insurance. However, the insurance cannot prevent the annoyance when the devices fail. Additionally, the result of lightning strikes and the subsequent surge voltages can lead to costs from data loss and from loss of production.

## Standards

### IEC 60364-4-44 - Surge protection

**Required since October 2016**

When is surge protection required?
- In every new electrical installation
- In every new or extended building
- Insurance companies demand surge protection

### IEC 62305 - Lightning protection

When is a lightning protection system required?
- State building regulations (e.g. for schools, etc.)
- Risk analysis according to IEC 62305-2
- Insurance companies demand surge protection in general

## Conclusion

Surge voltages endanger electronic devices and data. Surge protection is required for new buildings or modifications. This provides safety and protection for electrical installations and buildings.
Type classes of surge protective devices

Type 1 + 2 combination arrester
Used at the feed point of the building

Type 2 surge protection
Used in main/sub distribution boards and switching cabinets.
MCF Compact
Lightning protection class I-IV
Fulfils the requirement of 100 kA (10/350) per SPD.

Office, commercial
and residential
buildings

MCF Compact
Lightning protection class I - III

Office, commercial
and residential
buildings

V50
Lightning protection class III-IV
Fulfils the requirement of 50 kA (10/350) per SPD.

Office, commercial
and residential
buildings

V50
Lightning protection class III

Main and sub-distribution board

V20
Used in main/sub distribution boards and switching cabinets.
MCF-NAR combination arrester

- Tested according to VDE 0675-6-11 (EN 61643-11)
- Mounting on 40 mm busbars, TN and TT system
- Voltage protection level ≤1.5 kV to protect the terminals, with coordinated use for type 3 SPDs
- Lightning protection equipotential bonding according to VDE 0185-305 (IEC 62305)
- Lightning current discharge capacity up to 75 kA (10/350) 3-pin and up to 100 kA (10/350) 3+NPE
- Fulfils the requirements of VDE 0100-534 (IEC 60364-5-53)
- Follow current interrupt rating up to 50 kA and max. pre-fuse up to 315 A gL/gG
- Visual display without power consumption
- Fulfils the requirements for use in main power supply systems before the meter

Matching adapter for voltage tapping
LightningController Compact MCF100

- Type 1 + 2 SPD: \( I_{\text{imp}} = 25 \text{ kA per pole and up to 100 kA in total} \)
- Usable in buildings with lightning protection class 1-4
- Compact design, only 105 mm wide: Space savings of up to 25% for TNS and TT applications
- Protection level: < 1.5 kV, usable in coordination with type 3 SPD
- Safe up to mains following current of 50 kA
- Universally usable for industry, offices, commercial and residential buildings
- Quality according to EN 61643-11 certified by an external testing institute
- Corresponds to the pre-meter requirements VDE-AR-N 4100
- Usable for system protection up to 315 A without separate fusing
- Remote signalling, potential-free changeover contact
- Operating instructions always available online via QR code
V50 combination arrester

- Type 1 + 2 SPD: Imp = 12.5 kA per pole and up to 50 kA in total
- Usable in buildings with lightning protection class III + IV
- Protection level: < 1.3 kV, usable in coordination with type 3 SPD
- Quality according to EN 61643-11 certified by an external testing institute
- Universally usable for offices, commercial and residential buildings
- Can be installed universally through 90° labelling
- System protection up to 160 A usable without separate fusing
- Locking function with vibration protection
- Voltage variants: 150 V, 280 V, 320 V, 385 V
- Optional remote signalling, potential-free changeover contact
- Variants in one to four-pole versions
- Operating instructions always available online via QR code
Surge arrester V20

- Type 2 SPD: In = 20 kA (L-N) / 40 kA (N-PE), up to 60 kA
- Protection level: < 1.5 kV, usable in coordination with type 3 SPD
- Exceeds the increased requirements according to VDE 0100-443
- Quality according to EN 61643-11 certified by an external testing institute
- Universally usable for industry, offices, commercial and residential buildings
- Locking function with vibration protection
- System protection up to 160 A usable without separate fusing
- Can be installed universally through 90° labelling
- Voltage variants: 75 V, 150 V, 280 V, 320 V, 385 V, 440 V, 550 V
- Optional remote signalling, potential-free changeover contact
- Variants in one to four-pole versions
- Operating instructions always available online via QR code

Universal installation position

T2
OBO checklist

☑ Complete lightning and surge protection
As a manufacturer, OBO offers both components for external lightning protection and earthing as well as for equipotential bonding and surge protection.

☑ Support
For us, active customer proximity means offering help and advice whenever we are needed:
Customer Service Germany
Service hotline: +49 (0)2371 7899-2000
Fax: +49 (0)2373 89-1238
E-mail: export@obo.de
www.obo-bettermann.com

☑ Brochures and selection aids
The OBO lightning protection guide and brochures offer support in the planning of lightning and surge protection systems.

☑ Seminars and workshops
At the OBO Campus and also on-site, we are available to pass on our practical knowledge to you through seminars and planner days.

☑ Expertise
At the BET Test Centre, highly qualified specialists test the OBO lightning protection components and surge protection devices in accordance with the relevant standards.

☑ Certified
External tests, e.g. by VDE, ÖVE, KEMA and UL, are available for many products.

☑ Warranty
OBO offers a high level of quality and surge protection devices with a 5-year warranty.
<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage</th>
<th>Pole</th>
<th>Protection rating</th>
<th>Pack</th>
<th>Weight</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCF25-NAR-TNC</td>
<td>255 V</td>
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<td>IP20</td>
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<td>5096950</td>
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<td>MCF25-NAR-TNC+FS</td>
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<td>IP20</td>
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<td>107.504</td>
<td>5096961</td>
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</table>

**Connection options**

**LightningController - MCF25-NAR-TNC**
- Lightning surge current (10/350 μs) \( I_{\text{imp}} \) 8.5 kA
- Nominal discharge current (8/20 μs) \( I_{\text{ULN}} \) 20 kA
- Protection level \( U_{\text{a}} \) 1.5 kV
- Lightning surge current (10/350) \( I_{\text{max}} \) 25 kA

**LightningController - MCF25-NAR-TNC+FS**
- Lightning surge current (10/350 μs) \( I_{\text{imp}} \) 8.5 kA
- Nominal discharge current (8/20 μs) \( I_{\text{ULN}} \) 20 kA
- Protection level \( U_{\text{a}} \) 1.5 kV
- Lightning surge current (10/350) \( I_{\text{max}} \) 25 kA

**LightningController - MCF30-NAR-TT**
- Lightning surge current (10/350 μs) \( I_{\text{imp}} \) 7.5 kA
- Nominal discharge current (8/20 μs) \( I_{\text{ULN}} \) 20 kA
- Protection level \( U_{\text{a}} \) 1.5 kV
- Lightning surge current (10/350) \( I_{\text{max}} \) 30 kA
**LightningController - MCF30-NAR-TT+FS**

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
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<tbody>
<tr>
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</table>

**Connection options**

**LightningController - MCF38-NAR-TNC**

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
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<tbody>
<tr>
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<td>3</td>
<td>F20</td>
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<td>5096971</td>
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</table>

**Connection options**

**LightningController - MCF38-NAR-TNC+FS**

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCF38-NAR-TNC+FS</td>
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<td>3</td>
<td>F20</td>
<td>1</td>
<td>102.000</td>
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</table>

**Connection options**
### LightningController - MCF50-NAR-TT

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
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<tbody>
<tr>
<td>MCF50-NAR-TT</td>
<td>255</td>
<td>3+N/PE</td>
<td>IP20</td>
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<td>106.700</td>
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</tr>
</tbody>
</table>

**Connection options**

- Lightning surge current (10/350 μs)  \( I_{imp} \): 12.5 kA
- Nominal discharge current (8/20 μs)  \( I_{L,N} \): 20 kA
- Protection level: 1.5 kV
- Lightning surge current (10/350)  \( I_{max} \): 50 kA

### LightningController - MCF50-NAR-TT+FS

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCF50-NAR-TT+FS</td>
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<td>3+N/PE</td>
<td>IP20</td>
<td>1</td>
<td>107.500</td>
<td>5096977</td>
</tr>
</tbody>
</table>

**Connection options**

- Lightning surge current (10/350 μs)  \( I_{imp} \): 12.5 kA
- Nominal discharge current (8/20 μs)  \( I_{L,N} \): 20 kA
- Protection level: 1.5 kV
- Lightning surge current (10/350)  \( I_{max} \): 50 kA

### LightningController - MCF75-NAR-TNC

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCF75-NAR-TNC</td>
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<td>3</td>
<td>IP20</td>
<td>1</td>
<td>100.800</td>
<td>5096982</td>
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</tbody>
</table>

**Connection options**

- Lightning surge current (10/350 μs)  \( I_{imp} \): 25 kA
- Nominal discharge current (8/20 μs)  \( I_{L,N} \): 25 kA
- Protection level: 1.5 kV
- Lightning surge current (10/350)  \( I_{max} \): 75 kA
### LightningController - MCF75-NAR-TNC+FS

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCF75-NAR-TNC+FS</td>
<td>255</td>
<td>3</td>
<td>IP20</td>
<td>1</td>
<td>102.000</td>
<td>5096983</td>
</tr>
</tbody>
</table>

**Connection options**

**MCF75-NAR-TNC+FS**
- Lightning surge current (10/350 μs): \( I_{\text{imp}} \)
- Nominal discharge current (8/20 μs): \( I_{\text{L/N}} \)
- Protection level: \( U_{\text{p}} \)
- Lightning surge current (10/350): \( I_{\text{total}} \)

### LightningController - MCF100-NAR-TT

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCF100-NAR-TT</td>
<td>255</td>
<td>3+N/PE</td>
<td>IP20</td>
<td>1</td>
<td>107.200</td>
<td>5096985</td>
</tr>
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</table>

**Connection options**

**MCF100-NAR-TT**
- Lightning surge current (10/350 μs): \( I_{\text{imp}} \)
- Nominal discharge current (8/20 μs): \( I_{\text{L/N}} \)
- Protection level: \( U_{\text{p}} \)
- Lightning surge current (10/350): \( I_{\text{total}} \)

### LightningController - MCF100-NAR-TT+FS

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCF100-NAR-TT+FS</td>
<td>255</td>
<td>3+N/PE</td>
<td>IP20</td>
<td>1</td>
<td>107.600</td>
<td>5096988</td>
</tr>
</tbody>
</table>

**Connection options**

**MCF100-NAR-TT+FS**
- Lightning surge current (10/350 μs): \( I_{\text{imp}} \)
- Nominal discharge current (8/20 μs): \( I_{\text{L/N}} \)
- Protection level: \( U_{\text{p}} \)
- Lightning surge current (10/350): \( I_{\text{total}} \)
Main distributor

Voltage tap for MCF-NAR series

<table>
<thead>
<tr>
<th>Type</th>
<th>Nominal voltage AC (50/60 Hz)</th>
<th>Protection rating</th>
<th>Pack</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
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</thead>
<tbody>
<tr>
<td>MCF-NAR-SMG</td>
<td>230</td>
<td>IP20</td>
<td>1</td>
<td>5.850</td>
<td>5096900</td>
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</tbody>
</table>

Adapter for voltage tap in power-side connection compartment

- Simple and space-saving voltage taps for the termination point meter position (APZ) and the space for additional applications (RfZ)
- With spring contacts for easy connection of wires
- Includes 2 plug sockets
- Safety screw to prevent unwanted loosening
- Replaceable 5 A fine-wire fuse with a breaking capacity of 50 kA
- Fuse holder 6.3 x 32 mm

MCF, Type 1+2 combination arrester

LightningController Compact - MCF75

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCF75-3+FS</td>
<td>250</td>
<td>3</td>
<td>IP20</td>
<td>1</td>
<td>75.000</td>
<td>5096981</td>
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</table>

Connection options

- MCF75-3+FS
  - Lightning surge current (10/350 μs) \( I_{imp} \) 25 kA
  - Nominal discharge current (8/20 μs) \( I_{ULN} \) 35 kA
  - Protection level \( U_l \) 1.5 kV
  - Lightning surge current (10/350) \( I_{max} \) 75 kA

LightningController Compact - MCF100

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCF100-3+NPE+FS</td>
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<td>3-N/PE</td>
<td>IP20</td>
<td>1</td>
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<td>5096987</td>
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Connection options

- MCF100-3+NPE+FS
  - Lightning surge current (10/350 μs) \( I_{imp} \) 25 kA
  - Nominal discharge current (8/20 μs) \( I_{ULN} \) 35 kA
  - Protection level \( U_l \) 1.5 kV
  - Lightning surge current (10/350) \( I_{max} \) 100 kA
### Combination arrester V50, 1-pole 280 V

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V50-1-280</td>
<td>280</td>
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<td>P20</td>
<td>1</td>
<td>16.400</td>
<td>5093500</td>
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</table>

**V50-1-280**

- Lightning surge current (10/350 µs) \( I_{\text{pp}} \): 12.5 kA
- Nominal discharge current (8/20 µs) \( I_{\text{L-N}} \): 30 kA
- Lightning surge current (10/350) \( I_{\text{ref}} \): — kA
- Protection level \( U_p \): 1.3 kV

### Combination arrester V50, 1-pole with FS 280 V

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V50-1+FS-280</td>
<td>280</td>
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<td>P20</td>
<td>1</td>
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<td>5093502</td>
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</table>

**V50-1+FS-280**

- Lightning surge current (10/350 µs) \( I_{\text{pp}} \): 12.5 kA
- Nominal discharge current (8/20 µs) \( I_{\text{L-N}} \): 30 kA
- Lightning surge current (10/350) \( I_{\text{ref}} \): — kA
- Protection level \( U_p \): 1.3 kV

### Combination arrester V50, 1-pole + NPE 280 V

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V50-1+NPE-280</td>
<td>280</td>
<td>1+NPE</td>
<td>P20</td>
<td>1</td>
<td>32.929</td>
<td>5093522</td>
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**V50-1+NPE-280**

- Lightning surge current (10/350 µs) \( I_{\text{pp}} \): 12.5 kA
- Nominal discharge current (8/20 µs) \( I_{\text{L-N}} \): 30 kA
- Lightning surge current (10/350) \( I_{\text{ref}} \): 25 kA
- Protection level \( U_p \): 1.3 kV
**V50, type 1 + 2 combination arrester**

**Combination arrester V50, 1-pole + NPE with FS 280 V**

**Connection options**

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack</th>
<th>Weight (kg/100 pc.)</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V50-1+NPE+FS-280</td>
<td>280</td>
<td>1+N/PE</td>
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**Combination arrester V50, 3-pole 280 V**

**Connection options**

<table>
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<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack</th>
<th>Weight (kg/100 pc.)</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V50-3-280</td>
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**Combination arrester V50, 3-pole with FS 280 V**

**Connection options**

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack</th>
<th>Weight (kg/100 pc.)</th>
<th>Item no.</th>
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<tbody>
<tr>
<td>V50-3+FS-280</td>
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</table>
## Combination arrester V50, 3-pole + NPE 280 V

<table>
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<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
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<tr>
<td>V50-3+NPE-280</td>
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<td>1</td>
<td>58.800</td>
<td>5093526</td>
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</table>

**Connection options**

### V50-3+NPE-280
- Lightning surge current (10/350 μs) \(I_{\text{lp}}\): 12.5 kA
- Nominal discharge current (8/20 μs) \(I_{\text{n/L}}\): 30 kA
- Lightning surge current (10/350) \(I_{\text{tot}}\): 50 kA
- Protection level \(U_p\): 1.3 kV

## Combination arrester V50, 3-pole + NPE with FS 280 V

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V50-3+NPE+FS-280</td>
<td>280</td>
<td>3-N/PE</td>
<td>IP20</td>
<td>1</td>
<td>59.300</td>
<td>5093533</td>
</tr>
</tbody>
</table>

**Connection options**

### V50-3+NPE+FS-280
- Lightning surge current (10/350 μs) \(I_{\text{lp}}\): 12.5 kA
- Nominal discharge current (8/20 μs) \(I_{\text{n/L}}\): 30 kA
- Lightning surge current (10/350) \(I_{\text{tot}}\): 50 kA
- Protection level \(U_p\): 1.3 kV

## Combination arrester V50, 4-pole 280 V

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V50-4-280</td>
<td>280</td>
<td>4</td>
<td>IP20</td>
<td>1</td>
<td>61.000</td>
<td>5093513</td>
</tr>
</tbody>
</table>

**Connection options**

### V50-4-280
- Lightning surge current (10/350 μs) \(I_{\text{lp}}\): 12.5 kA
- Nominal discharge current (8/20 μs) \(I_{\text{n/L}}\): 30 kA
- Lightning surge current (10/350) \(I_{\text{tot}}\): 50 kA
- Protection level \(U_p\): 1.3 kV
V50, type 1 + 2 combination arrester

**Combination arrester V50, 4-pole with FS 280 V**

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V50-4+FS-280</td>
<td>280</td>
<td>4</td>
<td>IP20</td>
<td>1</td>
<td>61.500</td>
<td>5093518</td>
</tr>
</tbody>
</table>

**Connection options**

- Lightning surge current (10/350 μs) \(I_{\text{imp}}\) 12.5 kA
- Nominal discharge current (8/20 μs) \(I_{\text{L-N}}\) 30 kA
- Lightning surge current (10/350) \(I_{\text{max}}\) 50 kA
- Protection level \(U_p\) 1.3 kV

**Plug-in arrester V50 280 V**

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V50-0-280</td>
<td>280</td>
<td>1</td>
<td>IP20</td>
<td>1</td>
<td>8.500</td>
<td>5093508</td>
</tr>
</tbody>
</table>

**Plug-in arrester NPE-C50**

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C50-0-255</td>
<td>255</td>
<td>N/PE</td>
<td>IP20</td>
<td>1</td>
<td>7.215</td>
<td>5095609</td>
</tr>
</tbody>
</table>

**V20, type 2 surge protection device**

**Surge arrester V20, 1-pole, 280 V**

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V20-1-280</td>
<td>280</td>
<td>1</td>
<td>IP20</td>
<td>1</td>
<td>12.900</td>
<td>5095161</td>
</tr>
</tbody>
</table>

**Connection options**

- Nominal discharge current (8/20 μs) \(I_{\text{L-N}}\) 20 kA
- Arrester surge current (8/20 μs) \(I_{\text{max}}\) 40 kA
- Protection level \(U_p\) 1.3 kV
### Surge arrester V20, 1-pole with remote signalling, 280 V

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V20-1+FS-280</td>
<td>280</td>
<td>1</td>
<td>IP20</td>
<td>1</td>
<td>13.100</td>
<td>5095281</td>
</tr>
</tbody>
</table>

**Connection options**

Nominal discharge current (8/20 µs) \( I_{\text{L-N}} \) 20 kA
Arrester surge current (8/20 µs) \( I_{\text{total}} \) 40 kA
Protection level \( U_p \) 1.3 kV

### Surge arrester V20, 1-pole + NPE, 280 V

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V20-1+NPE-280</td>
<td>280</td>
<td>1+N/PE</td>
<td>IP20</td>
<td>1</td>
<td>24.300</td>
<td>5095281</td>
</tr>
</tbody>
</table>

**Connection options**

Nominal discharge current (8/20 µs) \( I_{\text{L-N}} \) 20 kA
Arrester surge current (8/20 µs) \( I_{\text{total}} \) 60 kA
Protection level \( U_p \) 1.3 kV

### Surge arrester V20, 1-pole + NPE and remote signalling, 280 V

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V20-1+NPE+FS-280</td>
<td>280</td>
<td>1+N/PE</td>
<td>IP20</td>
<td>1</td>
<td>24.600</td>
<td>5095331</td>
</tr>
</tbody>
</table>

**Connection options**

Nominal discharge current (8/20 µs) \( I_{\text{L-N}} \) 20 kA
Arrester surge current (8/20 µs) \( I_{\text{total}} \) 60 kA
Protection level \( U_p \) 1.3 kV

### Surge arrester V20, 3-pole, 280 V

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V20-3-280</td>
<td>280</td>
<td>3</td>
<td>IP20</td>
<td>1</td>
<td>36.000</td>
<td>5095163</td>
</tr>
</tbody>
</table>

**Connection options**

Nominal discharge current (8/20 µs) \( I_{\text{L-N}} \) 20 kA
Arrester surge current (8/20 µs) \( I_{\text{total}} \) 120 kA
Protection level \( U_p \) 1.3 kV
V20, type 2 surge protection device

Surge arrester V20, 3-pole with remote signalling, 280 V

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V20-3+FS-280</td>
<td>280</td>
<td>3</td>
<td>IP20</td>
<td>1</td>
<td>36.400</td>
<td>5095283</td>
</tr>
</tbody>
</table>

Connection options

V20-3+FS-280
Nominal discharge current (8/20 µs) \( I_{\text{L/N}} \) 20 kA
Arrester surge current (8/20 µs) [total] \( I_{\text{um}} \) 120 kA
Protection level \( U_p \) 1.3 kV

Surge arrester V20, 3-pole + NPE, 280 V

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V20-3+NPE-280</td>
<td>280</td>
<td>3+N/PE</td>
<td>IP20</td>
<td>1</td>
<td>45.800</td>
<td>5095253</td>
</tr>
</tbody>
</table>

Connection options

V20-3+NPE-280
Nominal discharge current (8/20 µs) \( I_{\text{L/N}} \) 20 kA
Arrester surge current (8/20 µs) [total] \( I_{\text{um}} \) 60 kA
Protection level \( U_p \) 1.3 kV

Surge arrester V20, 3-pole + NPE and remote signalling, 280 V

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V20-3+NPE+FS-280</td>
<td>280</td>
<td>3+N/PE</td>
<td>IP20</td>
<td>1</td>
<td>46.300</td>
<td>5095333</td>
</tr>
</tbody>
</table>

Connection options

V20-3+NPE+FS-280
Nominal discharge current (8/20 µs) \( I_{\text{L/N}} \) 20 kA
Arrester surge current (8/20 µs) [total] \( I_{\text{um}} \) 60 kA
Protection level \( U_p \) 1.3 kV

Surge arrester V20, 4-pole, 280 V

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V20-4-280</td>
<td>280</td>
<td>4</td>
<td>IP20</td>
<td>1</td>
<td>47.000</td>
<td>5095164</td>
</tr>
</tbody>
</table>

Connection options

V20-4-280
Nominal discharge current (8/20 µs) \( I_{\text{L/N}} \) 20 kA
Arrester surge current (8/20 µs) [total] \( I_{\text{um}} \) 160 kA
Protection level \( U_p \) 1.3 kV
Surge arrester V20, 4-pole with remote signalling, 280 V

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V20-4+FS-280</td>
<td>280</td>
<td>4</td>
<td>IP20</td>
<td>1</td>
<td>47.500</td>
<td>5095284</td>
</tr>
</tbody>
</table>

V20-4+FS-280
Nominal discharge current (8/20 µs) \(I_{\text{nom}}\) 20 kA
Arrester surge current (8/20 µs) \(I_{\text{tot}}\) 160 kA
Protection level \(U_{\text{p}}\) 1.3 kV

Connection options

Plug-in arrester V20 280 V

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V20-0-280</td>
<td>280</td>
<td>1</td>
<td>IP20</td>
<td>1</td>
<td>5.000</td>
<td>5095364</td>
</tr>
</tbody>
</table>

Plug-in arrester C20

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. continuous voltage AC V</th>
<th>Pole version</th>
<th>Protection rating</th>
<th>Pack Piece</th>
<th>Weight kg/100 pc.</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C20-0-255</td>
<td>255</td>
<td>N/PE</td>
<td>IP20</td>
<td>1</td>
<td>3.680</td>
<td>5095600</td>
</tr>
</tbody>
</table>
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Safely conducted

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- Formation of equipotential areas
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