## Contents

**Lightning and surge protection for low voltage facilities**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quick selection guide</td>
<td>C.2</td>
</tr>
<tr>
<td>Type I and II lightning arrester</td>
<td>C.8</td>
</tr>
<tr>
<td>Type I and II lightning arrester for use upstream of the electrical meter</td>
<td>C.12</td>
</tr>
<tr>
<td>Type I and II lightning arrester for use downstream of the electrical meter</td>
<td>C.21</td>
</tr>
<tr>
<td>Type I and II lightning arrester for use upstream of the electrical meter</td>
<td>C.25</td>
</tr>
<tr>
<td>Type I and II lightning arrester for use downstream of the electrical meter</td>
<td>C.28</td>
</tr>
<tr>
<td>Lightning arresters in industrial networks</td>
<td>C.35</td>
</tr>
<tr>
<td>Type II surge protection</td>
<td>C.36</td>
</tr>
<tr>
<td>Lightning and surge protection for photovoltaic systems on the DC side</td>
<td>C.58</td>
</tr>
<tr>
<td>Type III surge protection for end devices</td>
<td>C.64</td>
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### Quick selection guide

#### Product quick selection, power supply

**Type I**

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<th>Product</th>
<th>Version</th>
<th>Rated voltage</th>
<th>Discharge capacity</th>
<th>Protection level</th>
<th>Follow current suppression capability</th>
<th>Blow-out encapsulated</th>
<th>Max. backup fuse</th>
<th>Signalling</th>
<th>Overall width</th>
<th>Order No.</th>
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<td>50 kA</td>
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<td>no fallow current</td>
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<td>250 A</td>
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<td><strong>Discharge capacity limp (10/350)</strong></td>
<td><strong>Protection level typ.</strong></td>
<td><strong>Follow current suppression capability typ.</strong></td>
<td><strong>Blow-out/encapsulated</strong></td>
<td><strong>Max. backup fuse A gl/gG</strong></td>
<td><strong>Signalling contact</strong></td>
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## Quick selection guide

### Product quick selection, power supply

#### Type II

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<th>Discharge capacity (10/350)</th>
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**C.4**

1366910000 - 2013
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<th>Protection level</th>
<th>Follow current suppression capability</th>
<th>blow-out/encapsulated</th>
<th>Max. backup fuse</th>
<th>Signalling contact</th>
<th>Overall width</th>
<th>Order No.</th>
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**Quick selection guide**

Lightning and surge protection for low voltage facilities

13689100000 – 2013
## Product quick selection, power supply

**Type III**

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<th>Version</th>
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<th>Discharge capacity/limp (10/350)</th>
<th>Protection level typ.</th>
<th>Follow current suppression capability Ili</th>
<th>Blow-out/encapsulated</th>
<th>Max. backup fuse A gl/gG</th>
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## Lightning and surge protection for photovoltaic systems

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<th>Protection level</th>
<th>Follow current suppression capability</th>
<th>Blow-out/encapsulated</th>
<th>Max. backup fuse</th>
<th>Signalling contact</th>
<th>Overall width</th>
<th>Order No.</th>
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<td>encapsulated</td>
<td>135 A</td>
<td>1 CO</td>
<td>6 TE</td>
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Type I

Lightning / surge protection for type I with spark gaps and varistor technology: VPU I

Weidmüller’s VPU I series offers type I surge protection featuring varistor technology with a leakage current capacity of 12.5 kA to 50 kA (10/350 μs). The pluggable, self-monitoring surge arresters of up to 25 kA are optionally available as 1-, 2-, 3- or 4-pole versions – with or without a remote signalling contact. VPU II devices can be rotated through 180° and thereby simplify installation with cross-connection bridges to the RCD. Since the devices can rotate, PE connections can take the shortest routes possible.

The advantages for you:
- Rotate 180° and remote signalling function
- Suitable for various types of mains voltages (TN/TT)
- Tested in compliance with IEC 61643-11 and EN 61643-11
- Convenient installation in sub-distribution boards and electrical cabinets
- Designed for use in buildings according to lightning protective level III/IV for 12.5 kA and I/II for 25 kA
- Very low residual voltage (<1.3 kV), thus also suitable as Type II surge protection

Lightning conductors with spark gap for lightning protection or equipotential bonding providing Surge protection type I

According to the requirements of Type I (DIN VDE 0675 part 6) and Type I according to IEC 61643-11: the lightning arrester should be used in the transition zone between protective zones (LP) 0 and 1 (acc. to IEC 1312-1) for lightning protection equipotential bonding. In combination with several lightning protectors, the surge protection is used in the mains forms TN, TT and IT. When lightning strikes, the triggered air gap protector provides the necessary equipotential bonding between the building lightning protection and the earthing system of the power supply.

VPU I LCF 30 kA and 50 kA

Lightning and surge protection for installation before the electric meter in the highest lightning protection level (LPL)

The VPU I LCF 30 kA and 50 kA line of lightning and surge protectors for power are installed before the meter. The arrester protects the low-voltage consumer and electronic devices from any direct lightning effects and couplings. VPU I LCF 30 kA and 50 kA are fully compliant with IEC 61643-11 and are approved according to type I and type II requirements and type 1 / type 2 as laid down in EN 61643-11. With this product line, Weidmüller provides type I surge protection in varistor gas discharge technology with a leakage current capacity of 30 kA and 50 kA (10/350 μs), offering impressive freedom from leakage current and high protection properties.

The VPU I LCF 12.5 kA is a “compact” solution for protective Types III/IV and is sufficient for use before the meter. With protection Type I, it is critical that this is used with one phase and the VPU I LCF 30 kA or 50 kA is the solution. When using two modules (L/N), the 50 kA required is attained in accordance with the requirements of various standards.
**Electrical connection for building installation**

The type 1 VPU I series lightning arrester is connected between the external conductors (L1, L2, L3) and N/PE. The N/PE spark gap is produced with the VPU I LCF N-PE 50 kA or 100 kA. Cables as short as possible should be used. The maximum permissible operating voltage UC is 280 V AC. Decoupling to downstream type II arresters is not necessary. Please note the installation instructions.

**Electrical connection for industrial installations**

The PU 1 TSG+ 50 kA/330 V or 440 V type I lightning arrester is connected between the phase conductors (L1, L2, L3) and N/PE. A Weidmüller PU 1 TSG 50 kA is used to provide the N-PE sparkover gap. The lines for this should be kept as short as possible. The triggered and blowout PU 1 TSG+ 50 kA devices can be clipped to TS 35 rails in electrical cabinets or distribution boards. Owing to the emissions given off when the sparkover gap is tripped, a safety clearance of min. 100 mm must be maintained between this and any current-conducting components. In addition, it must not be bolted directly to a mounting plate.

**Energy co-ordination**

The maximum permissible operating voltage Uc is 330 or 440 V AC. Decoupling from downstream type II arresters is unnecessary because triggered sparkover gaps with a low sparkover voltage are used. **Important:** for Uc 330 V, PU II is used with 280 V and for Uc 440 V, the PU II with 550 V. Please follow the installation instructions.

**Checking operation, maintenance and approvals**

All arresters based on varistor technology have large status windows. If the status window is red, the corresponding arrester must be changed. With the VPU I LCF 30 and 50 kA products, the entire unit must be replaced in the event of an error message or a red status window. The "PU I TSG+" surge protection modules are checked by means of visual inspection. A function display, which lights up at 120 V AC and higher, a mains voltage failure and failure of the ignition electronics. Frequent checking is advisable during storms. The triggered spark gaps result in a very low protection level of less than 1.5 kV with high leakage currents.

The connection is designed for the following cross-sections:
- solid wire: 10...16 mm²
- stranded wire: 10...50 mm²

25 mm² for PU 1 TSG or PU I TSG+

The operating temperature range is –40 °C...+70 °C.
Combination of spark gaps and varistor arrestors

Unlike standard spark gaps, the Weidmüller spark gaps PU I TSG+ and PU 1 TSG feature electronic triggering. This ignites the spark gap sufficiently early so that the following arrester Type II (VPU-II series) is relieved. There is no need to decouple to downstream type II arresters because triggered spark gaps with a low activation voltage are used.

PU I TSG+ and PU 1 TSG differ in terms of secondary current discharge. The PU I TSG+ splits the arc voltage over several chambers. As soon as the total arc voltage exceeds the mains voltage available, the secondary current is discharged. With the PU 1 TSG, the secondary current is discharged in the next zero crossing of the mains voltage.

This used to be the usual solution, because the arresters were not co-ordinated.

However, present day solutions no longer require restricting because they are co-ordinated with one another.
Dimensional drawing VPU I
Width: 17.5 mm (1 x TE)

Dimensional drawing PU I TSG+
Width: 36 mm
VPU I lightning and surge protection  
Maximum type I protection from lightning and surges

With the increase in limit values in standards, the introduction of IEC/EN 61643-11 in 2012 places great emphasis on the need for all-round, reliable surge protection.

Our response to these new requirements is the new VPU lightning and surge protection series. Based on a combined varistor gas discharge technology, this forward-looking series of products is currently the first on the market to fulfil the new international standards and will therefore give your plant the highest protection.

However, you will not just be protecting your plant, but also your planning processes. Conformity with standards for at least 5 years means that you can minimise your planning iteration steps and the redesigns associated with them.

Many intelligent product features help installers during installation and maintenance specialists during their servicing of the lightning and surge protection system.

Equipped in this way, the VPU series provides a long-lasting, safe and forward-looking lightning and surge protection solution for your plant. See for yourself.

Solutions for PV photovoltaics  
VPU I variants can be used in photovoltaic systems in accordance with IEC 50539-11.

Flexible positioning in the control cabinet  
According to IEC 62305, the line path from the surge protection module to the PE connection may only be 50 cm. The fact that you can rotate the base through 180° means that you have the highest degree of flexibility during installation, without impacting on overall visibility.
Rapid status messaging
The remote signaling contact with PUSH IN connection can be quickly connected and provides reliable information on the status of the protective function.

Faster to assemble
The optimised mounting rail clip enables easy and quick assembly and removal, without the need for tools.

Best overview
The large, central, status window provides highly visible information on the status of the protective function.

Firmly locked in position
You can hear and feel the arrester lock into the base. This enables it to comply with the exacting requirements on vibration resistance set by wind turbine plant manufacturers.
Type I and II lightning arrester

- No-leakage-current version suitable for use upstream of the electrical meter.
- Suitable with 35 kA or 50 kA (10/350 μs) for lightning protection level I, II, III and IV (LPL I/II/III/IV).
- Tested according to IEC 61643-11 for Type I and II surge protection.
- Can also be used as Type II surge protection.

VPU 1 I/R LCF 280 V / 50 kA

1-phase

VPU 1 I/R LCF 400 V / 50 kA

1-phase

Technical data

- Rated voltage (AC)
- Highest continuous current (AC)
- Temporary surge voltage (over-voltage) - TOV
- Requirements category acc. to IEC 61643-11
- Lightning test current Iimp (10/350 μs) wire-PE
- Discharge current Ioff (8/20μs) wire-PE
- Short-circuit resistance Ioff (8/20μs) wire-PE
- Total discharge current Itotal (8/20μs) wire-PE
- PE conductor current IPE
- Short-circuit strength with max. back-up fuse
- Sparkover time
- Drop-out time

Connection according to IEC 947-7-1

- Solid
- Stranded
- Stripping length
- Tightening torque

Approvals

- IEC61643-11, EN61643-11

Dimensions / Signalling contact info

- Clamping range (nominal / min. / max.) mm²
- Height x width x depth mm
- Signalling contact

Ordering data

- Type Qty. Order No.

Accessories

- Type Qty. Order No.
**Type I and II lightning arrester**

- No-leakage-current version suitable for use upstream of the electrical meter.
- Suitable with 35 kA or 50 kA (10/350 μs) for lightning protection level I, II, III and IV (LPL I/II/III/IV).
- Tested according to IEC 61643-11 for Type I and II surge protection.
- Can also be used as Type II surge protection.

**Technical data**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage (AC)</td>
<td>230 V, 280 V, 335 V</td>
</tr>
<tr>
<td>Highest continuous current (AC)</td>
<td>35 kA, 25 kA, 125 A</td>
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<tr>
<td>Temporary surge voltage (over-voltage) - TOV</td>
<td>≤ 100 ns</td>
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<tr>
<td>Requirements category acc. to IEC 61643-11</td>
<td>Type I, Type II</td>
</tr>
<tr>
<td>Lightning test current Iimp</td>
<td>≤ 2.5 kV</td>
</tr>
<tr>
<td>Short-circuit resistance Iimp</td>
<td>≤ 25 kA, ≤ 100 mA</td>
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<tr>
<td>Total discharge current Iimp</td>
<td>≤ 315 A gi</td>
</tr>
<tr>
<td>Short-circuit strength with max. back-up fuse</td>
<td>≤ 2.5 kV</td>
</tr>
<tr>
<td>Sparkover time</td>
<td>100 ns to 315 μs</td>
</tr>
<tr>
<td>Drop-out time</td>
<td>100 ns to 315 μs</td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>-40 °C to 70 °C</td>
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<tr>
<td>Connection according to IEC 947-7-1</td>
<td>Solid, Stranded, Stripping length, Tightening torque</td>
</tr>
<tr>
<td>Approvals</td>
<td>IEC61643-11, EN61643-11</td>
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**Dimensions / Signalling contact info**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamping range</td>
<td>4...16 mm², 2.5...50 mm²</td>
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<tr>
<td>Height x width x depth</td>
<td>15 mm x 2...3 mm</td>
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<tr>
<td>Total discharge current</td>
<td>≤ 25 kA, ≤ 100 mA</td>
</tr>
<tr>
<td>PE conductor current</td>
<td>≤ 315 A gi</td>
</tr>
<tr>
<td>Sparkover time</td>
<td>100 ns to 315 μs</td>
</tr>
<tr>
<td>Drop-out time</td>
<td>100 ns to 315 μs</td>
</tr>
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**Ordering data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU I 1 LF 280V/35kA</td>
<td>1</td>
<td>1351360000</td>
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<td>VPU I 1 LF 280V/35kA</td>
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**Accessories**

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<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note</td>
<td></td>
</tr>
</tbody>
</table>
Type I and II lightning arrester

- No-leakage-current version suitable for use upstream of the electrical meter
- Pluggable arrester
- Suitable with 25 kA (10/350 μs) for lightning protection level I, II, III and IV (LPD L/I/II/III/IV)
- Tested according to IEC 61643-11 for Type I and II surge protection
- Can also be used as Type II surge protection

Type I and II lightning arrester for use upstream of the electrical meter

VPU I 3/R LCF 280 V / 25 kA

- **Technical data**
  - Nominal voltage (Ue): 230 V, 280 V, 440 V
  - Type I, Type II
  - 25 kA
  - 100 kA
  - 250 A Pe
  - ≤ 100 ms
  - ≤ 20 ms
  - ≤ 10 μs
  - ≤ 500 μs
  - ≥ 100 ns
  - ≤ 1.0 kV
  - Installation housing: 6 TE, Insta IP 20
  - Black, Arrester red
  - Ambient temperature (operational): -40...+70 °C
  - Approvals: IEC 61643-11, E

VPU I 4/R LCF 280 V / 25 kA

- **Technical data**
  - Nominal voltage (Ue): 230 V, 280 V, 335 V
  - Type I, Type II
  - 25 kA
  - 100 kA
  - 250 A pl
  - ≤ 100 ms
  - ≤ 20 ms
  - ≤ 1.0 kV
  - Installation housing: 8 TE, Insta IP 20
  - Black, Arrester red
  - Ambient temperature (operational): -40...+70 °C
  - Approvals: IEC 61643-11, E

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### Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type I 3/R LCF 280 V / 25 kA</th>
<th>Type I 4/R LCF 280 V / 25 kA</th>
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<tbody>
<tr>
<td>Nominal voltage (Ue)</td>
<td>230 V, 280 V, 440 V</td>
<td>230 V, 280 V, 335 V</td>
</tr>
<tr>
<td>Type</td>
<td>Type I, Type II</td>
<td>Type I, Type II</td>
</tr>
<tr>
<td>Nominal current (IN)</td>
<td>25 kA</td>
<td>25 kA</td>
</tr>
<tr>
<td>Surge current (Iimp)</td>
<td>100 kA</td>
<td>25 kA</td>
</tr>
<tr>
<td>Sparkover time (gL)</td>
<td>≤ 100 ms</td>
<td>≤ 100 ms</td>
</tr>
<tr>
<td>Short-circuit strength (IL)</td>
<td>≤ 20 ms</td>
<td>≤ 20 ms</td>
</tr>
<tr>
<td>Protection level</td>
<td>Type II</td>
<td>Type II</td>
</tr>
<tr>
<td>Optical function display</td>
<td>Presence</td>
<td>Presence</td>
</tr>
<tr>
<td>Installation housing</td>
<td>6 TE, Insta IP 20</td>
<td>8 TE, Insta IP 20</td>
</tr>
<tr>
<td>Color</td>
<td>Black, Arrester red</td>
<td>Black, Arrester red</td>
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<tr>
<td>Ambient temperature (Operational)</td>
<td>-40...+70 °C</td>
<td>-40...+70 °C</td>
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</tbody>
</table>

### Ordering data

#### VPU I 3/R LCF 280 V / 25 kA

- **Type**: VPU I 3 LCF 280V/25KA
- **Qty.**: 1
- **Order No.**: 1351690000

#### VPU I 4/R LCF 280 V / 25 kA

- **Type**: VPU I 4 LCF 280V/25KA
- **Qty.**: 1
- **Order No.**: 1351700000

### Accessories

- **Pluggable spare arrester VPU I 0 LCF 280 V/25 kA-1351540000**
- **Pluggable spare arrester VPU I 0 LCF 280 V/25 kA-1351540000**
### Type I and II lightning arrester

- No-leakage-current version suitable for use upstream of the electrical meter
- Pluggable arrester
- Suitable with 25 kA (10/350 μs) for lightning protection level I, II, III and IV (LPL I/II/III/IV)
- Tested according to IEC 61643-11 for Type I and II surge protection
- Can also be used as Type II surge protection

#### Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>Rated voltage (AC)</td>
<td>230 V</td>
</tr>
<tr>
<td>Highest continuous current (AC)</td>
<td>280 V</td>
</tr>
<tr>
<td>Temporary surge voltage (over-voltage) - TOV</td>
<td>440 V</td>
</tr>
<tr>
<td>Requirements category acc. to IEC 61643-11</td>
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<tr>
<td>Lightning test current (I_{tmp}) (10/350 μs)</td>
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<tr>
<td>Short-circuit strength with max. back-up fuse</td>
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<tr>
<td>PE conductor current (I_{PE})</td>
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<tr>
<td>Protection level UP</td>
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<tr>
<td>Discharge current (I_{max})</td>
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<tr>
<td>Connection according to IEC 947-7-1 Solid</td>
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<tr>
<td>Stranded</td>
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<tr>
<td>Stripping length</td>
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<tr>
<td>Tightening torque</td>
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<tr>
<td>Approvals</td>
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<tr>
<td>Approvals</td>
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<tr>
<td>Standards</td>
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#### Connection according to IEC 947-7-1

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<tr>
<td>Stranded</td>
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<td>Stripping length</td>
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<tr>
<td>Tightening torque</td>
<td></td>
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<tr>
<td>Approvals</td>
<td></td>
</tr>
<tr>
<td>Approvals</td>
<td></td>
</tr>
<tr>
<td>Standards</td>
<td></td>
</tr>
</tbody>
</table>

#### Dimensions / Signalling contact info

| Clamping range (nominal / min. / max.) mm² | 2.5...16 mm² |
| Height x width x depth mm                  | 2...3 mm     |

#### Ordering data

**VPU I 3+1/R LCF 280 V / 25 kA**

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty</th>
<th>Order No.</th>
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</thead>
<tbody>
<tr>
<td>no remote sig. contact</td>
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</tr>
<tr>
<td>with remote signalling (R)</td>
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<td>1351780000</td>
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<tr>
<td>16 / 2.5 / 69</td>
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<td></td>
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<tr>
<td>No</td>
<td></td>
<td>250 V 1A 10D</td>
</tr>
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</table>

**VPU I 1+1 LCF 280 V / 25 kA**

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>no remote sig. contact</td>
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<td></td>
</tr>
<tr>
<td>with remote signalling (R)</td>
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<td>1351790000</td>
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<tr>
<td>16 / 2.5 / 69</td>
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<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>250 V 1A 10D</td>
</tr>
</tbody>
</table>

#### Accessories

**Pluggable spare arrester L VPU I 1 LCF 280 V / 25 kA 1351540000**

**Pluggable spare arrester L VPU I 1 LCF 280 V / 25 kA 1351540000**
Type I and II lightning arrester for use upstream of the electrical meter

- No-leakage-current version suitable for use upstream of the electrical meter
- Pluggable arrester
- Suitable with 25 kA (10/350 μs) for lightning protection level I, II, III and IV (LPL I/II/III/IV)
- Tested according to IEC 61643-11 for Type I and II surge protection
- Can also be used as Type II surge protection

Technical data

- Rated voltage (AC)
- Highest continuous current (AC)
- Temporary surge voltage (over-voltage) - TOV
- Requirements category acc. to IEC 61643-11
- Lightning test current Iimp, (10/350 μs)
- Discharge current Ie, (8/20μs) wire-wire
- Discharge current If, (8/20μs) wire-PE
- Short-circuit resistance Zmax
- Total discharge current Itotal
- Rated load current Ii, PE
- PE conductor current IPE
- Short-circuit strength with max. back-up fuse
- Sparkover time
- Drop-out time

Connection according to IEC 947-7-1

- Solid connection
- Stranded connection
- Stripping length
- Tightening torque

Approvals

- Standards

Dimensions / Signalling contact info

- Clamping range (nominal / min. / max.) mm²
- Height x width x depth mm
- Signalling contact

Ordering data

- Type Qty. Order No.
- no remote sig. contact with remote signalling (R)

Accessories

- Pluggable spare arrester VPU I 0 LCF 280 V/25 kA-1351540000

VPU I 2/R LCF 280 V / 25 kA

1-phase

- 230 V
- 280 V
- 440 V
- Type I, Type II
- 25 kA
- 25 kA
- 100 kA
- 25 kA
- 50 kA
- 125 A
- 0 μA
- 25 kAup
- ≤ 100 ns
- 250 A gl.
- ≤ 1.6 kV
- green = OK, red = arrester is defective - replace
- Installation housing 4TE, Insta IP 20
- Black, Arrester red
- 40 °C ... +70 °C
- 2.5...16 mm²
- 2.5...50 mm²
- 15 mm
- 2...3 Nm

IEC61643-11, EN61643-11

VPU I 1/R LCF 280 V / 25 kA

1-phase

- 230 V
- 280 V
- 440 V
- Type I, Type II
- 25 kA
- 25 kA
- 100 kA
- 25 kA
- 25 kA
- 125 A
- 0 μA
- 25 kAup
- ≤ 100 ns
- 250 A gl.
- ≤ 1.6 kV
- green = OK, red = arrester is defective - replace
- Installation housing 2TE, Insta IP 20
- Black, Arrester red
- 40 °C ... +70 °C
- 2.5...16 mm²
- 2.5...50 mm²
- 15 mm
- 2...3 Nm

IEC61643-11, EN61643-11

Pluggable spare arrester VPU I 0 LCF 280 V/25 kA-1351540000

Pluggable spare arrester VPU I 0 LCF 280 V/25 kA-1351540000

1366910000 - 2013
Lightning and surge protection for low voltage facilities

Type I lightning arrester

- This space-saving, encapsulated lightning arrester can switch mains follow currents and discharge currents of max. 50 kA (10/350 μs). It is possible to install in lightning protection level I and II.
- The pluggable arrester always guarantees proper readability. It also ensures that the shortest path is taken to the system’s earth potential.
- The arrester’s status display enables defective arresters to be quickly located and replaced.

Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
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<td>Rated voltage (AC)</td>
<td>240 V / 415 V</td>
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<tr>
<td>Highest continuous current (AC)</td>
<td>350 V</td>
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<tr>
<td>Temporary surge voltage (over-voltage) - TOV</td>
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</tr>
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<td>Requirements category acc. to IEC 61643-11</td>
<td>Type I</td>
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<tr>
<td>Lightning test current Iimp</td>
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<tr>
<td>Total discharge current Itotal</td>
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<tr>
<td>Temporary surge voltage over-voltage</td>
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<tr>
<td>PE conductor current Ipe</td>
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<td>Short-circuit strength with max. back-up fuse</td>
<td>50 kA</td>
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<tr>
<td>Leakage current at U0</td>
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<td>Sparkover time / Drop-out time</td>
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<td>Fusing</td>
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<td>Protection level U0 (typical)</td>
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<tr>
<td>Optical function display</td>
<td>green = OK; red = arrester is defective - replace</td>
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<tr>
<td>Design</td>
<td>Installation housing: 6 TE, Insta IP 20</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td>Black</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>-40 °C...+80 °C</td>
<td></td>
</tr>
<tr>
<td>Connection according to IEC 947-7-1</td>
<td>Solid</td>
<td></td>
</tr>
<tr>
<td>Stripping length</td>
<td>2.5...25 mm2</td>
<td></td>
</tr>
<tr>
<td>Connection according to IEC 947-7-1</td>
<td>Stranded</td>
<td></td>
</tr>
<tr>
<td>Tightening torque</td>
<td>4...4.5 mm</td>
<td></td>
</tr>
<tr>
<td>Approvals</td>
<td>CE, cULus, GOSTME25</td>
<td></td>
</tr>
<tr>
<td>Approvals</td>
<td>IEC61643-11, EN61643-11</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions / Signalling contact info

<table>
<thead>
<tr>
<th>Width x depth</th>
<th>min.</th>
<th>max.</th>
<th>Size</th>
<th>Height</th>
<th>mm2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25</td>
<td>2.5</td>
<td>/ 36</td>
<td>97</td>
<td>144</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>2.5</td>
<td>/ 36</td>
<td>97</td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>250 V</td>
<td>1 A</td>
<td>100</td>
<td>250 V</td>
<td>1 A</td>
</tr>
</tbody>
</table>

Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PU I3+1 TSG+ 350 V 1.5 kV</td>
<td>1</td>
<td>8960510000</td>
</tr>
<tr>
<td>PU I3 TSG+ 350 V 1.5 kV</td>
<td>1</td>
<td>8960490000</td>
</tr>
</tbody>
</table>

Accessories

<table>
<thead>
<tr>
<th>Note</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pluggable spare arrester: LN: PU I O TSG+ 350 V 1.5 kV 8960520000</td>
<td></td>
</tr>
<tr>
<td>NPE: PU I N/P TSG+ 350 V 1.5 kV 1060400000</td>
<td></td>
</tr>
</tbody>
</table>

Pluggable spare arrester: LN: PU I O TSG+ 350 V 1.5 kV 8960520000 NPE: PU I N/P TSG+ 350 V 1.5 kV 1060400000
Type I lightning arrester

- This space-saving, encapsulated lightning arrester can switch mains follow currents and discharge currents of max. 50 kA (10/350 μs). It is possible to install in lightning protection level I and II.
- The pluggable arrester always guarantees proper readability. It also ensures that the shortest path is taken to the system's earth potential.
- The arrester's status display enables defective arresters to be quickly located and replaced.

Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage (AC)</td>
<td>240 V / 415 V</td>
</tr>
<tr>
<td>Highest continuous current (AC)</td>
<td>350 V</td>
</tr>
<tr>
<td>Type I</td>
<td></td>
</tr>
<tr>
<td>Type II</td>
<td></td>
</tr>
<tr>
<td>PE conductor current</td>
<td>415 V</td>
</tr>
<tr>
<td>Short-circuit strength with max. back-up fuse</td>
<td>150 V</td>
</tr>
<tr>
<td>Total discharge current</td>
<td>25 kA</td>
</tr>
<tr>
<td>Peak limiting current</td>
<td>125 A</td>
</tr>
<tr>
<td>Sparkover time</td>
<td>0.01 μs</td>
</tr>
<tr>
<td>Drop-out time</td>
<td>≤ 100 ns</td>
</tr>
<tr>
<td>Protection level U0 (typical)</td>
<td>315 A pl</td>
</tr>
<tr>
<td>Optical function display</td>
<td>1500 V</td>
</tr>
<tr>
<td>Installation housing</td>
<td>Green = OK; red = arrester is defective - replace</td>
</tr>
</tbody>
</table>

Connection according to IEC 947-7-1

- Solid
- Stranded
- Stripping length
- Tightening torque

Approvals

- Approvals
- Standards

Dimensions / Signalling contact info

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamping range</td>
<td>25 / 2.5 / 36</td>
</tr>
<tr>
<td>Height</td>
<td>97 / 36 / 72.5</td>
</tr>
<tr>
<td>Width</td>
<td>250 V 1 A 10D</td>
</tr>
<tr>
<td>Depth</td>
<td></td>
</tr>
</tbody>
</table>

Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PU I 1 TSG+ 350 V 1.5 kV</td>
<td>1</td>
<td>8960480000</td>
</tr>
</tbody>
</table>

Accessibility

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pluggable spare arrester</td>
<td>PU I 1 TSG+ 350 V 1.5 kV</td>
</tr>
<tr>
<td>PE: PU I 0 PE TSG+ 350 V 1.5 kV</td>
<td>8960520000</td>
</tr>
<tr>
<td>PE: PU I 0 PE TSG+ 350 V 1.5 kV</td>
<td>8960520000</td>
</tr>
<tr>
<td>PE: PU I 0 PE TSG+ 350 V 1.5 kV</td>
<td>8960520000</td>
</tr>
</tbody>
</table>

Lightning and surge protection for low voltage facilities
Type I and II lightning arrester

- Suitable with 25 kA (10/350 μs) for lightning protection level I, III and IV (LPL I/III/IV)
- Pluggable arrester
- Tested according to IEC 61643-11 for Type I and II surge protection
- Can also be used as Type II surge protection
- Field of application downstream of the main electrical meter

Technical data

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage (AC)</td>
<td>400 V, 440 V, 620 V</td>
</tr>
<tr>
<td>Highest continuous current (AC)</td>
<td>25 kA, 50 kA, 100 kA</td>
</tr>
<tr>
<td>Temporary surge voltage (over-voltage) - TOV</td>
<td>≤ 25 kA, ≤ 25 kA, ≤ 25 kA</td>
</tr>
<tr>
<td>Lightning test current $I_{\text{imp}}$ (10/350 μs)</td>
<td>100 kA</td>
</tr>
<tr>
<td>Discharge current $I_d$ (8/20μs) wire-PE</td>
<td>25 kA, 25 kA, 25 kA</td>
</tr>
<tr>
<td>Short-circuit resistance $I_{\text{sh}}$ (max.)</td>
<td>≤ 3.9 kΩ, ≤ 3.9 kΩ</td>
</tr>
<tr>
<td>Total discharge current $I_{\text{out}}$</td>
<td>0 μA</td>
</tr>
<tr>
<td>PE conductor current $I_{\text{PE}}$</td>
<td>25 kA, 25 kA, 0 μA</td>
</tr>
<tr>
<td>Short-circuit strength with max. back-up fuse</td>
<td>≤ 25 ns, ≤ 25 ns</td>
</tr>
<tr>
<td>Sparkover time / Drop-out time</td>
<td>250 μs, 250 μs</td>
</tr>
<tr>
<td>Fusing</td>
<td>≤ 1.9 kV, ≤ 1.9 kV</td>
</tr>
<tr>
<td>Protection level $I_{\text{p}}$ (typical)</td>
<td>-70 °C, -70 °C</td>
</tr>
<tr>
<td>Optical function display</td>
<td>-40 °C, -40 °C</td>
</tr>
<tr>
<td>Design</td>
<td>-TE, Insta IP 20</td>
</tr>
<tr>
<td>Colour</td>
<td>-red, -blue</td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>-40 %, -40 %</td>
</tr>
</tbody>
</table>

Connection according to IEC 947-7-1

<table>
<thead>
<tr>
<th>Connection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4...16 mm²</td>
<td>4...16 mm²</td>
</tr>
<tr>
<td>2.5...50 mm²</td>
<td>2.5...50 mm²</td>
</tr>
<tr>
<td>15 mm</td>
<td>15 mm</td>
</tr>
<tr>
<td>2...3 mm</td>
<td>2...3 mm</td>
</tr>
</tbody>
</table>

Approvals

- IEC61643-11, EN61643-11

Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU I 3+1/R 400 V / 25 kA</td>
<td>1</td>
<td>1351890000</td>
</tr>
<tr>
<td>VPU I 3+1R 400 V/25kA</td>
<td>1</td>
<td>1351880000</td>
</tr>
</tbody>
</table>

Accessories

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pluggable spare arrester L N</td>
<td>VPU I 10 280 V/25 kA-1351790000, LPL I/III/LPL I</td>
</tr>
<tr>
<td>VPU I 440 V/100 kA-135190000</td>
<td></td>
</tr>
</tbody>
</table>

Note: 
- No remote sig. contact with remote signalling (R)

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU I 1+1/R 400 V / 25 kA</td>
<td>1</td>
<td>1351840000</td>
</tr>
<tr>
<td>VPU I 1+1R 400 V/25kA</td>
<td>1</td>
<td>1351830000</td>
</tr>
</tbody>
</table>

Note:
- No remote sig. contact with remote signalling (R)
Type I and II lightning arrester for use downstream of the electrical meter

**Technical data**
- Rated voltage (AC)
- Highest continuous current (AC)
- Temporary surge voltage (over-voltage) - TOV
- Requirements category acc. to IEC 61643-11
- Lightning test current $I_{imp}$ (10/350 μs)
- Discharge current $I_{d}$ (8/20μs) wire-wire
- Discharge current $I_{w}$ (8/20μs) wire-PE
- Short-circuit resistance $I_{eff}$
- Total discharge current $I_{total}$
- PE conductor current $I_{PE}$
- Short-circuit strength with max. back-up fuse
- Sparkover time $t_{sz}$
- Drop-out time $t_{do}$
- Protection level UP
- Optical function display
- Design
- Colour
- Ambient temperature (operational)

**Connection according to IEC 947-7-1**
- Solid
- Stranded
- Stripping length
- Tightening torque
- Approvals

**Standards**
- IEC 61643-11, EN 61643-11

**Dimensions / Signalling contact info**
- Clamping range (nominal / min. / max.) mm²
- Height x width x depth mm
- Signalling contact

**Ordering data**
- No remote sig. contact
- With remote signalling (R)

**Accessories**
- Pluggable spare arrester
**Type I and II lightning arrester**

**N-PE path**

Suitable for 230/400 V mains systems

- Pluggable arrester
- High energy absorption with short time to sparkover
- Installation in distribution board

---

### Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>VPU I 1 N-PE 260 V / 50 kA</th>
<th>VPU I 1 N-PE 260 V / 100 kA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage (AC)</td>
<td>230 V</td>
<td>230 V</td>
</tr>
<tr>
<td>260 V</td>
<td>260 V</td>
<td></td>
</tr>
<tr>
<td>1200 V</td>
<td>1200 V</td>
<td></td>
</tr>
<tr>
<td>Temporary surge voltage (over-voltage)</td>
<td>Type I, Type II</td>
<td></td>
</tr>
<tr>
<td>50 kA</td>
<td>100 kA</td>
<td></td>
</tr>
<tr>
<td>50 kA</td>
<td>100 kA</td>
<td></td>
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<tr>
<td>50 kA</td>
<td>100 kA</td>
<td></td>
</tr>
<tr>
<td>Rated load current</td>
<td>0 µA</td>
<td>0 µA</td>
</tr>
<tr>
<td>≤ 100 ms</td>
<td>≤ 100 ms</td>
<td></td>
</tr>
<tr>
<td>Not required</td>
<td>Not required</td>
<td></td>
</tr>
<tr>
<td>≤ 1.5 kV</td>
<td>≤ 2 kV</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Installation housing</td>
<td>1TE, Insta IP 20</td>
<td></td>
</tr>
<tr>
<td>40 °C...+70 °C</td>
<td>40 °C...+70 °C</td>
<td></td>
</tr>
<tr>
<td>2...16 mm²</td>
<td>2...16 mm²</td>
<td></td>
</tr>
<tr>
<td>2...50 mm²</td>
<td>2...50 mm²</td>
<td></td>
</tr>
<tr>
<td>15 mm</td>
<td>15 mm</td>
<td></td>
</tr>
<tr>
<td>2...3 Nm</td>
<td>2...3 Nm</td>
<td></td>
</tr>
<tr>
<td>IEC61643-11, EN61643-11</td>
<td>IEC61643-11, EN61643-11</td>
<td></td>
</tr>
</tbody>
</table>

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### Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU I 1 N-PE 260 V / 50 kA</td>
<td>1</td>
<td>13515900000</td>
</tr>
</tbody>
</table>

---

**Note**

- No remote sig. contact

---

### Accessories

- Pluggable spare arrester VPU I 0 N-PE 260 V / 100 kA 13516400000

---

**Lightning and surge protection**

for low voltage facilities

---

**Type I and II lightning arrester for use downstream of the electrical meter**
Type I and II lightning arrester for use downstream of the electrical meter

Type I and II lightning arrester
N-PE path
Suitable for 400/690 V mains systems

- Tested according to IEC 61643-11 for Type I
- Pluggable arresters
- High energy absorption with short time to sparkover
- Installation in distribution board

Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage (AC)</td>
<td>400 V</td>
</tr>
<tr>
<td>Highest continuous current (AC)</td>
<td>440 V</td>
</tr>
<tr>
<td>Temporary surge voltage (over-voltage) - TOV</td>
<td>1200 V</td>
</tr>
<tr>
<td>Requirements category acc. to IEC 61643-11</td>
<td>Type I, Type II</td>
</tr>
<tr>
<td>Lightning test current Iₜₚᵢₚₗ (10/350 μs)</td>
<td>50 kA</td>
</tr>
<tr>
<td>Discharge current Iₜₚᵢₚₗ (8/20μs) wire-Pe</td>
<td>50 kA</td>
</tr>
<tr>
<td>Total discharge current Iₜₚᵢₚₗ</td>
<td>50 kA</td>
</tr>
<tr>
<td>Rated load current Iₗ</td>
<td>0 μA</td>
</tr>
<tr>
<td>PE conductor current Iₗ</td>
<td>≤ 100 ns</td>
</tr>
<tr>
<td>Sparkover time / Drop-out time</td>
<td>Not required</td>
</tr>
<tr>
<td>Fusing</td>
<td>≤ 2 kV</td>
</tr>
<tr>
<td>Protection level Uₕ (typical)</td>
<td>No</td>
</tr>
<tr>
<td>Optical function display</td>
<td>Installation housing, 1TE, Insta IP 20</td>
</tr>
<tr>
<td>Design</td>
<td>Black, Arrester blue</td>
</tr>
<tr>
<td>Colour</td>
<td>-40 °C...+70 °C</td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>2.5...16 mm²</td>
</tr>
<tr>
<td>Connection according to IEC 947-7-1</td>
<td>2.5...50 mm²</td>
</tr>
<tr>
<td>Solid</td>
<td>15 mm</td>
</tr>
<tr>
<td>Stranded</td>
<td>2...3 Nm</td>
</tr>
<tr>
<td>Stripping length</td>
<td>IEC61643-11, EN61643-11</td>
</tr>
<tr>
<td>Tightening torque</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions / Signalling contact info

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamping range (nominal / min. / max.)</td>
<td>16 / 2.5 / 50</td>
</tr>
<tr>
<td>Height x width x depth</td>
<td>94 / 17.8 / 69</td>
</tr>
<tr>
<td>Signalling contact</td>
<td>No</td>
</tr>
<tr>
<td>Note</td>
<td></td>
</tr>
</tbody>
</table>

Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU I 1 N-PE 440V / 50kA</td>
<td>1</td>
<td>1351960000</td>
</tr>
</tbody>
</table>

Accessories

<table>
<thead>
<tr>
<th>Note</th>
<th></th>
</tr>
</thead>
</table>

Pluggable spare arrester VPU I 0 N-PE 440 V / 50 kA 1351980000

Pluggable spare arrester VPU I 0 N-PE 440 V / 100 kA 1351990000
Type I and II lightning arrester

- No-leakage-current version suitable for use upstream of the electrical meter
- Pluggable arrester
- Suitable for lightning protection level III and IV (LPL III/IV)
- Tested according to IEC 61643-11 for Type I and II lightning and surge protection
- Can also be used as Type II surge protection

Technical data

- Rated voltage (AC)
- Highest continuous current (AC)
- Temporary surge voltage (over-voltage) - TOV
- Requirements category acc. to IEC 61643-11
- Lightning test current \( I_{\text{imp}} \) (10/350 μs)
- Discharge current \( I_{\text{d}} \) (8/20μs) wire-PE
- Short-circuit resistance \( I_{\text{short}} \)
- Total discharge current \( I_{\text{t}} \)
- PE conductor current \( I_{\text{PE}} \)
- Short-circuit strength with max. back-up fuse
- Sparkover time / Drop-out time
- Fusing
- Protection level \( U_{\text{L}} \) (typical)
- Optical function display
- Design
- Colour
- Ambient temperature (operational)

Connection according to IEC 947-7-1

- Solid
- Stranded
- Stripping length
- Tightening torque

Approvals

- Approvals
- Standards

Dimensions / Signalling contact info

- Clamping range (nominal / min. / max.) mm²
- Height \( \times \) width \( \times \) depth mm
- Signalling contact

Note

Ordering data

- no remote sig. contact
- with remote signalling (R)

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU I 3+1/R LCF 280 V / 12.5 kA</td>
<td>1</td>
<td>1352020000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU I 1+1/R LCF 280 V / 12.5 kA</td>
<td>1</td>
<td>1352040000</td>
</tr>
</tbody>
</table>

Accessories

- No

Pluggable spare arrester L-N VPU 10 GSF 280 V/12.5 kA-13520000000,
- LPE VPU 10 PE 290 V/50 kA-13520300000

Pluggable spare arrester L-N VPU 10 GSF 280 V/12.5 kA-13520000000,
- LPE VPU 10 PE 290 V/50 kA-13520300000
Type I and II lightning arrester for use upstream of the electrical meter

**Type I and II lightning arrester**
- No-leakage-current version suitable for use upstream of the electrical meter
- Pluggable arrester
- Suitable for lightning protection level III and IV (LPL III/IV)
- Tested according to IEC 61643-11 for Type I and II lightning and surge protection
- Can also be used as Type II surge protection

### Technical data

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage (AC)</td>
<td>230 V</td>
</tr>
<tr>
<td>Highest continuous current (AC)</td>
<td>280 V</td>
</tr>
<tr>
<td>Temporary surge voltage (over-voltage) - TOV</td>
<td>335 V</td>
</tr>
<tr>
<td>Requirements category acc. to IEC 61643-11</td>
<td>Type I, Type II</td>
</tr>
<tr>
<td>Lightning test current</td>
<td>12.5 kA</td>
</tr>
<tr>
<td>Discharge current</td>
<td>25 kA</td>
</tr>
<tr>
<td>Short-circuit resistance</td>
<td>50 kA</td>
</tr>
<tr>
<td>Total discharge current</td>
<td>25 kA</td>
</tr>
<tr>
<td>Peak discharge current</td>
<td>37.5 kA</td>
</tr>
<tr>
<td>Lightning test current</td>
<td>25 kA</td>
</tr>
<tr>
<td>Sparkover time (0.5 µs)</td>
<td>≤ 100 ns</td>
</tr>
<tr>
<td>Discharge current (inrush)</td>
<td>250 A</td>
</tr>
<tr>
<td>Protection level</td>
<td>≤ 1.45 kV</td>
</tr>
<tr>
<td>Over-voltage requirements category acc. to IEC 61643-11</td>
<td>Green = OK; red = arrester is defective - replace</td>
</tr>
<tr>
<td>Installation housing</td>
<td>3T1, Insta IP 20</td>
</tr>
<tr>
<td>Black, Arrester red</td>
<td>-40 °C...+70 °C</td>
</tr>
</tbody>
</table>

### Connection according to IEC 947-7-1

<table>
<thead>
<tr>
<th>Wire size</th>
<th>mm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid</td>
<td>4, 16 mm²</td>
</tr>
<tr>
<td>Stranded</td>
<td>2.5, 50 mm²</td>
</tr>
<tr>
<td>Stripping length</td>
<td>15 mm</td>
</tr>
<tr>
<td>Tightening torque</td>
<td>2...3 Nm</td>
</tr>
</tbody>
</table>

### Approvals Standards

- IEC 61643-11, E161643-11

### Dimensions / Signalling contact info

<table>
<thead>
<tr>
<th>Clamping range (minimal / min. / max.)</th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height x width x depth</td>
<td>mm</td>
</tr>
</tbody>
</table>

### Signalling contact

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU I 3/R LCF 280 V / 12.5 kA</td>
<td>VPU I 1/R LCF 280 V / 12.5 kA</td>
<td></td>
</tr>
</tbody>
</table>

### Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU I 3/R LCF 280 V / 12.5 kA</td>
<td>VPU I 1/R LCF 280 V / 12.5 kA</td>
<td></td>
</tr>
</tbody>
</table>

### Accessories

- Pluggable spare arrester VPU I 0 280 V/12.5 kA 13521200000
VPU II surge protection
Maximum type II protection from surges

With the increase in limit values in standards, the introduction of IEC/EN 61643-11 in 2012 places great emphasis on the need for all-round, reliable surge protection.

Our response to these new requirements is the new VPU lightning and surge protection series. Based on a combined varistor gas discharge technology, this forward-looking series of products is currently the first on the market to fulfill the new international standards and will therefore give your plant the highest protection.

However, you will not just be protecting your plant, but also your planning processes. Conformity with standards for at least 5 years means that you can minimise your planning iteration steps and the redesigns associated with them.

Many intelligent product features help installers during installation and maintenance specialists during their servicing of the lightning and surge protection system.

Equipped in this way, the VPU series provides a long-lasting, safe and forward-looking lightning and surge protection solution for your plant. See for yourself.

Flexible positioning in the control cabinet
According to IEC 62305, the line path from the surge protection module to the PE connection may only be 50 cm. The fact that you can rotate the base through 180° means that you have the highest degree of flexibility during installation, without impacting on overall visibility.

Faster to assemble
The optimised mounting rail clip enables easy and quick installation, without the need for tools.
**Solutions for PV photovoltaics**

VPU I variants can be used in photovoltaic systems in accordance with IEC 50569-11.

**Firmly locked in position**

You can hear and feel the arrester lock into the base. This enables it to comply with the exacting requirements on vibration resistance set by wind turbine plant manufacturers.

**Best overview**

The large, central, status window provides highly visible information on the status of the protective function.

**Rapid status messaging**

The remote signaling contact with PUSH IN connection can be quickly connected and provides reliable information on the status of the protective function.
Type I and II lightning arrester for use downstream of the electrical meter

- Suitable for lightning protection level III and IV (LPL III/IV)
- Pluggable arresters
- Tested according to IEC 61643-11 for Type I and II lightning and surge protection

**Technical data**

- Rated voltage (AC)
- Highest continuous current (AC)
- Temporary surge voltage (over-voltage) - TOV
- Requirements category acc. to IEC 61643-11
- Lightning test current I_{imp} (10/350 μs)
- Short-circuit strength with max. back-up fuse
- Discharge current I_{max}
- Discharge current I_{max}
- PE conductor current I_p
- Sparkover time / Drop-out time
- Fusing
- Protection level U_0 (typical)
- Optical function display
- Design
- Colour
- Ambient temperature (operational)

**Connection according to IEC 947-7-1**

- Solid
- Stranded
- Stripping length
- Tightening torque

**Approvals**

- Approvals
- Standards

**Dimensions / Signalling contact info**

- Clamping range (nominal / min. / max.) mm²
- Height x width x depth mm
- Signalling contact

**Ordering data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU I 4 R 280 V / 12.5 kA</td>
<td>1</td>
<td>1352180000</td>
</tr>
<tr>
<td>VPU I 3 R 280 V / 12.5 kA</td>
<td>1</td>
<td>1352200000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU I 4 R 280 V / 12.5 kA</td>
<td>1</td>
<td>1352180000</td>
</tr>
<tr>
<td>VPU I 3 R 280 V / 12.5 kA</td>
<td>1</td>
<td>1352200000</td>
</tr>
</tbody>
</table>

**Accessories**

- Pluggable spare arrester VPU I 0 400 V / 12.5 kA 1352200000
Type I and II lightning arrester for use downstream of electrical meter

- Suitable for lightning protection level III and IV (LPL III/IV)
- Pluggable arresters
- Tested according to IEC 61643-11 for Type I and II lightning and surge protection

**Technical data**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage (AC)</td>
<td>230 V, 280 V, 335 V</td>
</tr>
<tr>
<td>Highest continuous current (AC)</td>
<td>Type I, Type II</td>
</tr>
<tr>
<td>Temporary surge voltage (over-voltage) - TOV</td>
<td>12.5 kA, 25 kA, 50 kA</td>
</tr>
<tr>
<td>Short-circuit strength with max. back-up fuse</td>
<td>25 kA, 25 kA, 25 kA</td>
</tr>
<tr>
<td>Discharge current (Iimp)</td>
<td>≤ 25 ms</td>
</tr>
<tr>
<td>Total discharge current</td>
<td>≤ 25 ms</td>
</tr>
<tr>
<td>Short-circuit resistance (Ito)</td>
<td>250 A, 250 A, 250 A</td>
</tr>
<tr>
<td>Sparkover time</td>
<td>≤ 1.4 kV</td>
</tr>
<tr>
<td>Protection level (typical)</td>
<td>green = OK, red = arrester is defective - replace</td>
</tr>
<tr>
<td>Optical function display</td>
<td>Installation housing: 2 TL, Inste IP 20</td>
</tr>
<tr>
<td>Design</td>
<td>Black, Arrester red</td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>+40 °C...+70 °C</td>
</tr>
</tbody>
</table>

**Connection according to IEC 947-7-1**

- Solid
- Stranded
- Stripping length |
| Height x width x depth mm | 55 mm x 35 mm x 15 mm |
| Colour | Red |
| Approvals | IEC61643-11, EN61643-11 |

**Dimensions / Signalling contact info**

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU I 2R 280 V/12.5kA</td>
<td>1</td>
<td>1352150000</td>
</tr>
<tr>
<td>VPU I 1R 280 V/12.5kA</td>
<td>1</td>
<td>1352140000</td>
</tr>
</tbody>
</table>

**Ordering data**

- Type: VPU I 2 R 280 V/12.5kA
- Qty: 1
- Order No: 1352150000

**Accessories**

- Pluggable spare arrester VPU I 0 280 V/12.5 kA: 1352130000
Type I and II lightning arrester for use downstream of the electrical meter

- Suitable for lightning protection level III and IV (LPL III/IV)
- Pluggable arresters
- Tested according to IEC 61643-11 for Type I and II lightning and surge protection

Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage (AC)</td>
<td>230 V, 280 V, 335 V</td>
</tr>
<tr>
<td>Highest continuous current (AC)</td>
<td>12.5 kA, 25 kA, 50 kA</td>
</tr>
<tr>
<td>Temporary surge voltage</td>
<td>250 A (t=25 \text{ ms, } t_{100} \leq 100 \text{ ms} )</td>
</tr>
<tr>
<td>Discharge current (I_{\text{DM}}) (8/20% wire-PE)</td>
<td>25 kA</td>
</tr>
<tr>
<td>PE conductor current (I_{\text{PE}})</td>
<td>30 \mu A</td>
</tr>
<tr>
<td>Sparkover time / Drop-out time</td>
<td>250 A (t=25 \text{ ms, } t_{100} \leq 100 \text{ ms} )</td>
</tr>
<tr>
<td>Fusing</td>
<td>1.4 kV</td>
</tr>
<tr>
<td>Protection level (U_{\text{p}}) (typical)</td>
<td>green = OK, red = arrester is defective - replace</td>
</tr>
<tr>
<td>Installation housing</td>
<td>4TE, Insta IP 20</td>
</tr>
</tbody>
</table>

Connection according to IEC 947-7-1

- Solid
- Stranded
- Stripping length
- Tightening torque

Approvals

Approvals Standards

IEC61643-11, EN61643-11

Dimensions / Signalling contact info

<table>
<thead>
<tr>
<th>Clamping range (nominal / min. / max.)</th>
<th>4 / 16 mm² / 2.5 / 50 mm² / 15 mm / 2...3 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height x width x depth</td>
<td>1 x 1 x 40 °C / 70 °C</td>
</tr>
<tr>
<td>Signalling contact</td>
<td>1 x 250 V / 1A / 100 V</td>
</tr>
</tbody>
</table>

Ordering data

- Type Qty. Order No.
  - VPU I 3+1/R 280 V / 12.5 kA 1 1352230000
  - VPU I 3+1 R 280 V / 12.5 kA 1 1352240000

Accessories

- Pluggable spare arrester L-N VPU I0 300 V / 12.5 kA-1352120000
  - PE VPU I0 N-PE 200 V / 50 kA-1351000000

Note

IEC61643-11, EN61643-11

<table>
<thead>
<tr>
<th>Type Qty. Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU I 1+1 R 280 V / 12.5 kA 1 1352270000</td>
</tr>
<tr>
<td>VPU I 1+1 280 V / 12.5 kA 1 1352260000</td>
</tr>
</tbody>
</table>

Note

No remote sig. contact with remote signalling (R)
Type I and II lightning arrester for use downstream of electrical meter

- Suitable for lightning protection level III and IV (LPL III/IV)
- Pluggable arresters
- Tested according to IEC61643-11 for Type I and II lightning and surge protection

Technical data

- Rated voltage (AC)
- Highest continuous current (AC)
- Temporary surge voltage (over-voltage) - TOV
- Requirements category acc. to IEC 61643-11
- Lightning test current $I_{imp}$ (10/350 μs)
- Short-circuit strength with max. back-up fuse
- Discharge current $I_{doc}$
- Total discharge current $I_{total}$
- PE conductor current $I_{PE}$
- Sparkover time
- Drop-out time
- Fusing
- Protection level $U_s$ (typical)
- Optical function display
- Design
- Colour

Connection according to IEC 947-7-1

- Solid
- Stranded
- Stripping length
- Tightening torque

Approvals

- Approvals

Standards

- IEC61643-11, EN61643-11

Dimensions / Signalling contact info

- Clamping range (nominal / min. / max.) mm
- Height x width x depth mm
- Signalling contact

Ordering data

- Type Qty. Order No.
  - VPU I 3+1 400 V / 12.5 kA...1352370000
  - VPU I 3 R 400 V / 12.5 kA...1352380000

Accessories

- Pluggable spare arrester L-PE VPU I 0 400 V / 12.5 kA...1352280000
- Pluggable spare arrester VPU I 0 400 V / 12.5 kA...1352390000

Note
Lightning and surge protection for low voltage facilities

Type I and II lightning arrester for use downstream of the electrical meter

- Suitable for lightning protection level III and IV (LPL III/ IV)
- Pluggable arresters
- Tested according to IEC61643-11 for Type I and II lightning and surge protection

Technical data

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Type I</th>
<th>Type II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage (AC)</td>
<td>400 V</td>
<td>440 V</td>
</tr>
<tr>
<td>Highest continuous current (AC)</td>
<td>620 V</td>
<td>Type I, Type II</td>
</tr>
<tr>
<td>Temporary surge voltage (over-voltage) - TOV</td>
<td>12.5 kA</td>
<td>25 kA</td>
</tr>
<tr>
<td>Lightning test current Iimp</td>
<td>25 kA</td>
<td>50 kA</td>
</tr>
<tr>
<td>Discharge current Ith</td>
<td>25 kA</td>
<td>25 kA</td>
</tr>
<tr>
<td>Sparkover time</td>
<td>30 kA</td>
<td>12.5 kA</td>
</tr>
<tr>
<td>Temporary over-voltage - TOV</td>
<td>≤ 25 ms</td>
<td>≤ 25 ms</td>
</tr>
<tr>
<td>Fusing</td>
<td>≤ 100 ms</td>
<td>≤ 100 ms</td>
</tr>
<tr>
<td>Protection level U0 (typical)</td>
<td>≤ 1.8 kV</td>
<td>≤ 1.8 kV</td>
</tr>
<tr>
<td>Optical function display</td>
<td>Green – OK, red – arrester is defective - replace</td>
<td>Green – OK, red – arrester is defective - replace</td>
</tr>
<tr>
<td>Design</td>
<td>Installation housing: 1TE, Insta IP 20</td>
<td>Installation housing: 2TE, Insta IP 20</td>
</tr>
<tr>
<td>Colour</td>
<td>Black, Arrester red</td>
<td>Black, Arrester red / blue</td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>40 °C...+70 °C</td>
<td>40 °C...+70 °C</td>
</tr>
</tbody>
</table>

Connection according to IEC 947-7-1

- Solid
- Stranded
- Stripping length
- Tightening torque

Approvals

- Approvals
- Standards

Dimensions / Signalling contact info

| Clamping range (nominal / min. / max.) | 4...16 mm² | 2.5...50 mm² |
| Height a width x depth | 15 mm | 2...3 mm |

Signalling contact

- Note

Ordering data

- Without remote signalling (R)
- With remote signalling (R)

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU I 1/R 400 V / 12.5 kA</td>
<td>1</td>
<td>1352290000</td>
</tr>
<tr>
<td>VPU I 1+1/R 400 V / 12.5 kA</td>
<td>1</td>
<td>1352320000</td>
</tr>
<tr>
<td>VPU I 1 400 V / 12.5 kA</td>
<td>1</td>
<td>1352330000</td>
</tr>
<tr>
<td>VPU I 1+1 400 V / 12.5 kA</td>
<td>1</td>
<td>1352330000</td>
</tr>
</tbody>
</table>

Accessories

- Pluggable spare arrester VPU I 0 400 V / 12.5 kA 1352280000
- Pluggable spare arrester L-N VPU I 0 400 V / 12.5 kA 1352380000
Lightning and surge protection for low voltage facilities

Type I lightning arrester

- Blow out version
- No decoupling necessary thanks to trigger electronics
- Suitable for networks with high short-circuit currents
- Suitable for lightning protection level I, II, III, IV.

Technical data

- Rated voltage (AC)
- Highest continuous current (AC)
- Temporary surge voltage (over-voltage) - TOV
- Requirements category acc. to IEC 61643-11
- Lightning test current I_{imp} (10/350 μs)
- Short-circuit strength with max. back-up fuse
- Discharge current I_{n}
- Discharge current I_{max}
- Short-circuit resistance R_{SC}
- Total discharge current I_{total}
- Rated load current I_{L}
- PE conductor current I_{PE}
- Leakage current at U_{L}
- Sparkover time / Drop-out time
- Fusing
- Protection level U_{P} (typical)
- Optical function display
- Design
- Colour
- Ambient temperature (operational)

Connection according to IEC 947-7-1

- Solid
- Stranded
- Stripping length
- Tightening torque

Approvals

- Approvals
- Standards

Dimensions / Signalling contact info

- Clamping range (nominal / min. / max.) (mm²)
- Height x width x depth (mm)
- Signalling contact
- Note

Ordering data

- Type Qty. Order No.
- PU1TS+ 330 V 0.9 kV 330 V
- PU1TS+ 440 V 1.5 kV 440 V

Note

Accessories

- Cross-connector 08 36-3 order no. 8816090000
- Cross-connector 08 36-3 order no. 8816090000

Lightning arresters in industrial networks
Surge protection for low-voltage consumer installations and electronics

Surge protection of type II

The Weidmüller VPU II series surge protection protects low-voltage consumer installations and electronic devices against voltage surges that arise through, for example, atmospheric discharge (lightning) or switching activities (transients).

The VPU II series satisfies the type II requirements of IEC 61643-11:2011 and type 2 requirements of EN 61643-11:2012.

Electrical connection

Connect the VPU II surge protection between the phase conductors (L1, L2, L3) or, as the case may be, the neutral conductor (N) and earth of the consumer installation. The connecting conductors should be kept as short as possible.

A helpful feature is that the protective unit can rotate 180°.

![180° rotation](image)

Ensure that unprotected conductors (e.g. wires to the meter) are not run parallel to protected wires.

The universal “3+1” circuit for TN or TT systems is available from the Weidmüller product range.

The VPU II surge protection is available as a compact module with 1, 2, 3 or 4 poles, with the PE connections already internally connected within the module.

We can supply the following voltage rating versions:

- $U_p$: 60 V AC = $U_{c}$: 75 V
- $U_p$: 120/230 V AC = $U_{c}$: 150 V
- $U_p$: 230/400 V AC = $U_{c}$: 280 V
- $U_p$: 400/690 V AC = $U_{c}$: 400 V
- $U_p$: 470/600 V AC = $U_{c}$: 600 V
- $U_p$: 750/1200 V AC = $U_{c}$: 750 V

as well as for the 3+1 circuit and special types for IT networks.

The VPU II series offers a choice of voltage ($Un \leq Uc$) and number of arresters to satisfy the various power systems. The national regulations and safety information must be observed, see IEC60364-5-53 or DIN VDE 0100 pt 534.

Functional checks, maintenance and approvals

VPU II surge modules can be checked visually by the user. The visual check is simple to perform because the arrester is provided with a thermal disconnector. If this has responded, i.e. is no longer providing protection, the flag in the status window changes from green to red.

![Surge protection module](image)

A non-functioning arrester can be replaced by a qualified technician without having to disconnect any wiring. The plug-in top sections of varistors are coded according to voltage. This means it is not possible to plug in the wrong replacement varistor.
LCF function

The leakage current free protection circuit (LCF function) is achieved by connecting the varistor and sparkover gap in series. This protection circuit is needed in the case of an insulation monitoring device, for example.

Connection

The cross-section of the earth conductor is in accordance with the requirements of the national standards. The fuse for VPU II modules is selected on the basis of conductor cross-section and type of routing. A maximum of 125 A gG/gL is permitted.

VPU II series arresters from Weidmüller are suitable for the following cross-sections:
- solid wire: 4...16 mm²
- stranded wire: 4...50 mm²
- flexible: 4...25 mm²
The operating temperature range is –40 °C...+70 °C.

V-form connection

When using cross-connections from the RCD or fuses to the VPU II, a V-form wiring arrangement can be used.

Remote signalling contact (R)

All modules of the VPU II series are available with the option of a remote signalling contact which is integrated directly in the module. This potential-free contact should be connected as a changeover contact using a PUSH IN plug connection. The contact’s electrical data is: 250 V AC / 1 A or 24 V DC / 0.1 A.

Co-ordination with other arresters

The VPU II series can be installed with the following Weidmüller surge protection devices without decoupling.

<table>
<thead>
<tr>
<th>Co-ordination with other arresters</th>
<th>Type I</th>
<th>Type II</th>
<th>Type III</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU I LCF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VPU I TSG+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VPU I series</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VPU III SO series</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VPU II series</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VPU II SD series</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dimensional drawing VPU II series

Overall width
- VPU II, single-pole, 18 mm
- VPU II, two-pole, 36 mm
- VPU II, three-pole, 54 mm
- VPU II, four-pole, 72 mm

Accessories: Link and remote signalling contact

<table>
<thead>
<tr>
<th>Type</th>
<th>Code</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>QB 18-4 insulated</td>
<td>8877520000</td>
<td>8877510000</td>
</tr>
<tr>
<td>GB 18-3 insulated</td>
<td>8877500000</td>
<td>8877530000</td>
</tr>
<tr>
<td>GB 18-2 insulated</td>
<td>8877540000</td>
<td>8877550000</td>
</tr>
<tr>
<td>Remote signalling contact</td>
<td>PLUG VPU</td>
<td>1402570000</td>
</tr>
</tbody>
</table>
Lightning and surge protection for low voltage facilities

Type II/III surge protection Uc: 280 V
Suitable for 230/400 V mains systems
- Pluggable arrester
- Coded voltage level
- High energy absorption with short time to sparkover
- Arrester can be rotated through 180°
- No follow-on current
- Installation in distribution board
- Thermal protection function
- Co-ordination with VPU Type I

Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>230 V / 400 V</td>
</tr>
<tr>
<td>Max. continuous voltage, Uic (AC)</td>
<td>280 V</td>
</tr>
<tr>
<td>Requirements category acc. to IEC 61643-11</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>Rated discharge current Idu (8/20 µs)</td>
<td>20 kA</td>
</tr>
<tr>
<td>Limiting discharge current Idu (8/20 µs)</td>
<td>40 kA</td>
</tr>
<tr>
<td>Discharge current, max. (8/20 µs)</td>
<td>10 kA</td>
</tr>
<tr>
<td>Sparkover time / Drop-out time</td>
<td>≤ 25 ms</td>
</tr>
<tr>
<td>Protection level U0 (typical)</td>
<td>≤ 1.55 kV</td>
</tr>
<tr>
<td>Temporary surge voltage (over-voltage) - TOV</td>
<td>440 V</td>
</tr>
<tr>
<td>Optical function display</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>-40 °C to 80 °C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td></td>
</tr>
<tr>
<td>Connection according to IEC 947-7-1</td>
<td>2.5...16 mm²</td>
</tr>
<tr>
<td>Stranded</td>
<td>2.5...50 mm²</td>
</tr>
<tr>
<td>Stripping length</td>
<td>15 mm</td>
</tr>
<tr>
<td>Tightening torque</td>
<td>2...3 Nm</td>
</tr>
<tr>
<td>Approvals</td>
<td></td>
</tr>
<tr>
<td>Approvals Standards</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Dimensions / Signalling contact info</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamping range (nominal / min. / max.)</td>
</tr>
<tr>
<td>Height x width x depth</td>
</tr>
<tr>
<td>Signalling contact</td>
</tr>
<tr>
<td>Note</td>
</tr>
</tbody>
</table>

Ordering data

Type Qty. Order No.
VPU II 4/R 280 V / 40 kA 1 1352880000
VPU II 3/R 280 V / 40 kA 1 1352870000

Type Qty. Order No.
VPU II 4 280 V / 40 kA 1 1352570000
VPU II 3 280 V / 40 kA 1 1352720000

Accessories

Pluggable spare arrester VPU II 0 280 V / 40 kA -1352570000
Pluggable spare arrester VPU II 0 280 V / 40 kA -135270000
Type II/III surge protection Uc: 280 V
Suitable for 230/400 V mains systems

- Pluggable arrester
- Coded voltage level
- High energy absorption with short time to sparkover
- Arrester can be rotated through 180°
- No follow-on current
- Installation in distribution board
- Thermal protection function
- Coordination with VPU Type I

**Technical data**

- Rated voltage
  - 230 V / 400 V
  - 280 V
- Type II, Type III
- 20 kA
- 40 kA
- 25 kA
- 80 kA
- 30 µA
- ≤ 25 ms, ≤ 100 ns
- ≤ 1.55 kV
- ≤ 1.55 kV
- 440 V
- Green = OK, red = arrester is defective - replace
- Installation housing 4TE, Insta IP 20
- Black, Arrester red / blue
- ≤ 40 °C, ≥ 70 °C
- ≤ 40 °C, ≥ 80 °C
- 2.5, 16 mm²
- 2.5, 50 mm²
- 15 mm
- 2, 3 Nm
- IEC61643-11, EN61643-11

**Dimensions / Signalling contact info**

- Clamping range (nominal / min. / max.) mm²
- Height x width x depth mm
- Signalling contact

**Ordering data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU II 3+1 R 280V/40kA</td>
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<td>1352670000</td>
</tr>
<tr>
<td>VPU II 3+1 280V/40kA</td>
<td>1</td>
<td>1352650000</td>
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</table>

**Accessories**

- Pluggable spare arrester LN VPU II 0 230 V/40 kA 1352570000
- Pluggable spare arrester L/N VPU II 0 230 V/40 kA 1352570000
Type II surge protection

Type II/III surge protection Uc: 280 V
Suitable for 230/400 V mains systems
- Pluggable arrester
- Coded voltage level
- High energy absorption with short time to sparkover
- Arrester can be rotated through 180°
- No follow-on current
- Installation in distribution board
- Thermal protection function
- Coordination with VPU Type I

Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>230 V</td>
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<tr>
<td>Type II, Type III</td>
<td>280 V</td>
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<tr>
<td>1 kA</td>
<td>280 V</td>
</tr>
<tr>
<td>10 kA</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>20 kA</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>40 kA</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>10 kV</td>
<td>Type II, Type III</td>
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<tr>
<td>25 kV</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>40 kV</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>40 kV</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>30 kA</td>
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<td>80 kA</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>30 µS</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>25 ns</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>125 A gl</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>1 kA, 50 kA</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>Protection level Uc (typical)</td>
<td>1.55 kV</td>
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<tr>
<td>Transit time</td>
<td>125 A gl</td>
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<tr>
<td>Drop-out time</td>
<td>125 A gl</td>
</tr>
<tr>
<td>250 V IA 100</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>250 V IA 100</td>
<td>Type II, Type III</td>
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Connection according to IEC 947-7-1

Solid
Stranded
Stripwinding length
Tightening torque
Approvals
Approvals
Standards

Dimensions / Signalling contact info

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
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<tbody>
<tr>
<td>Clamping range (nominal / min. / max.)</td>
<td>2.5...16 mm²</td>
</tr>
<tr>
<td>Height x width x depth</td>
<td>15 mm</td>
</tr>
<tr>
<td>Stripping length</td>
<td>2...3 mm</td>
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Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
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<td>VPU II 2 280V/40KA</td>
<td>1</td>
<td>1352800000</td>
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<tr>
<td>VPU II 2 R 280V/40KA</td>
<td>1</td>
<td>1352820000</td>
</tr>
<tr>
<td>VPU II 1 280V/40KA</td>
<td>1</td>
<td>1352580000</td>
</tr>
<tr>
<td>VPU II 1 R 280V/40KA</td>
<td>1</td>
<td>1352590000</td>
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Accessories

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pluggable spare arrester VPU II 0 280V/40KA</td>
<td>1352570000</td>
</tr>
<tr>
<td>Pluggable spare arrester VPU II 0 280V/40KA</td>
<td>1352570000</td>
</tr>
</tbody>
</table>
**Lightning and surge protection for low voltage facilities**

**Type II/III surge protection Uc: 280 V**

Suitable for 230/400 V mains systems

- Leakage current free, pluggable arrester
- Coded voltage level
- High energy absorption with short time to sparkover
- Arrester can be rotated through 180°
- No follow-on current
- Installation in distribution board
- Thermal protection function
- Coordination with VPU Type I

### Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Rated voltage</td>
<td>230 V / 400 V</td>
</tr>
<tr>
<td>Type I, Type III</td>
<td>280 V</td>
</tr>
<tr>
<td>20 kA</td>
<td>40 kA</td>
</tr>
<tr>
<td>40 kA</td>
<td>100 kA</td>
</tr>
<tr>
<td>Protection level Uj (typical)</td>
<td>≤ 2 kA</td>
</tr>
<tr>
<td>Temporary surge voltage (over-voltage) - TVS</td>
<td>≤ 2 kA</td>
</tr>
<tr>
<td>Optical function display</td>
<td>Design</td>
</tr>
<tr>
<td>Colour</td>
<td>Black, red</td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>-40°C to 80°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td></td>
</tr>
</tbody>
</table>

### Connection according to IEC 947-7-1

- Solid
- Stranded
- Stripping length
- Tightening torque

### Approvals

- IEC61643-11, EN61643-11

### Dimensions / Signalling contact info

<table>
<thead>
<tr>
<th>Clamping range (nominal / min. / max.)</th>
<th>mm²</th>
<th>mm</th>
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</thead>
<tbody>
<tr>
<td>2.5...16 mm²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5...50 mm²</td>
<td></td>
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### Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
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<tbody>
<tr>
<td>VPU II 4 LCF/R 280 V / 20 kA</td>
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<td>VPU II 4R LCF/R 280 V / 20 kA</td>
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<td>1352780000</td>
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</table>

**Accessories**

- Pluggable spare arrester VPU II 0 280 V/40 kA 1352570000

---

**Type II surge protection**

---
Lightning and surge protection for low voltage facilities

Type II/III surge protection Uc: 280 V
Suitable for 230/400 V mains systems
- Leakage current free, pluggable arrester
- Coded voltage level
- High energy absorption with short time to sparkover
- Arrester can be rotated through 180°
- No follow-on current
- Installation in distribution board
- Thermal protection function
- Co-ordination with VPU Type I

Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>230 V</td>
</tr>
<tr>
<td>Max. continuous voltage, Uc (AC)</td>
<td>280 V</td>
</tr>
<tr>
<td>Requirements category acc. to IEC</td>
<td>II/III</td>
</tr>
<tr>
<td>Rated discharge current (8/20 μs)</td>
<td>20 kA</td>
</tr>
<tr>
<td>Limiting discharge current (8/20 μs)</td>
<td>40 kA</td>
</tr>
<tr>
<td>Discharge current, max. (8/20 μs)</td>
<td>40 kA</td>
</tr>
<tr>
<td>Combined pulse Uc</td>
<td>10 kV</td>
</tr>
<tr>
<td>Short-circuit resistance Iimp</td>
<td>25 kA</td>
</tr>
<tr>
<td>Total discharge current Iim</td>
<td>40 kA</td>
</tr>
<tr>
<td>PE conductor current IPE</td>
<td>0 μA</td>
</tr>
<tr>
<td>Sparkover time</td>
<td>≤ 100 ns</td>
</tr>
<tr>
<td>Drop-out time</td>
<td>125 A gl</td>
</tr>
<tr>
<td>Fusing</td>
<td>≤ 1.8 kV</td>
</tr>
<tr>
<td>Protection level U0 (typical)</td>
<td>440 V</td>
</tr>
<tr>
<td>Temporary surge voltage (over-voltage) - TOV</td>
<td>green = OK, red = arrester is defective - replace</td>
</tr>
<tr>
<td>Optical function display</td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>-40 °C...+70 °C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-40 °C...+80 °C</td>
</tr>
</tbody>
</table>

Connection according to IEC 947-7-1

- Solid: 2.5...16 mm²
- Stranded: 2.5...50 mm²
- Stripping length: 15 mm
- Tightening torque: 2...3 Nm

IEC 61643-11, EN 61643-11

Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
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<tbody>
<tr>
<td>VPU II 1 LCF 230V/40kA</td>
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<tr>
<td>VPU II 1R LCF 230V/40kA</td>
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<td>1352750000</td>
</tr>
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</table>

Accessories

Pluggable spare arrester VPU II 0 230 V/40 kA 1352570000

Note

Dimensions / Signalling contact info

- Clamping range (nominal / min. / max.) mm²: 2.5...16
- Height x width x depth: mm
- Signalling contact: no remote sig. contact / with remote signalling (R)

Note

Pluggable spare arrester VPU II 0 230 V/40 kA 1352570000
## Lightning and surge protection for low voltage facilities

### Type II/III surge protection Uc: 400 V

Suitable for 400/690 V mains systems
- Pluggable arrester
- Coded voltage level
- High energy absorption with short time to sparkover
- Arrester can be rotated through 180°
- No follow-on current
- Installation in distribution board
- Thermal protection function
- Coordination with VPU Type I

### Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>400 V / 690 V</td>
</tr>
<tr>
<td>Type II, Type III</td>
<td></td>
</tr>
<tr>
<td>Max. continuous voltage, Uc (AC)</td>
<td>400 V</td>
</tr>
<tr>
<td>Requirements category acc. to IEC 61643-11</td>
<td></td>
</tr>
<tr>
<td>Rated discharge current (8/20 µs) I&lt;sub&gt;d&lt;/sub&gt;</td>
<td>20 kA</td>
</tr>
<tr>
<td>Limiting discharge current (8/20 µs) I&lt;sub&gt;lim&lt;/sub&gt;</td>
<td>40 kA</td>
</tr>
<tr>
<td>Discharge current, max. (8/20 µs) I&lt;sub&gt;max&lt;/sub&gt;</td>
<td></td>
</tr>
<tr>
<td>Combined pulse U&lt;sub&gt;oc&lt;/sub&gt;</td>
<td>10 kV</td>
</tr>
<tr>
<td>Short-circuit resistance ISCCR</td>
<td>25 kV</td>
</tr>
<tr>
<td>Total discharge current I&lt;sub&gt;total&lt;/sub&gt;</td>
<td>10 kA</td>
</tr>
<tr>
<td>PE conductor current I&lt;sub&gt;PE&lt;/sub&gt;</td>
<td>30 µA</td>
</tr>
<tr>
<td>Sparkover time</td>
<td>≤ 25 ms</td>
</tr>
<tr>
<td>Drop-out time</td>
<td>125 µs</td>
</tr>
<tr>
<td>Protection level U&lt;sub&gt;0&lt;/sub&gt; (typical)</td>
<td>≤ 2.1 kV</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>620 V</td>
</tr>
<tr>
<td>Optical function display</td>
<td>green = OK, red = arrester is defective - replace</td>
</tr>
<tr>
<td>Design</td>
<td>Installation housing 4TE, Insta IP 20</td>
</tr>
<tr>
<td>Connection according to IEC 947-7-1</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>-40°C...+80°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-40°C...+80°C</td>
</tr>
</tbody>
</table>

### Connection according to IEC 947-7-1
- Solid
- Stranded
- Stripping length
- Tightening torque

### Approvals
- Standards IEC61643-11, EN61643-11
- Approvals

### Dimensions / Signalling contact info

<table>
<thead>
<tr>
<th>Clamping range (nominal / min. / max.)</th>
<th>mm²</th>
</tr>
</thead>
<tbody>
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<td>Height x width x depth</td>
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</tr>
<tr>
<td>mm</td>
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### Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
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</thead>
<tbody>
<tr>
<td>VPU II 4/R 400 V / 40 kA</td>
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<tr>
<td>VPU II 3/R 400 V / 40 kA</td>
<td>1</td>
<td>1352890000</td>
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</table>

### Accessories

Pluggable spare arrester VPU II 0 400 V 40 kA 1352800000

---

**Note**
Lightning and surge protection

Type II/III surge protection \( U_r = 400 \) V

Suitable for 400/690 V mains systems

- Pluggable arrester
- Coded voltage level
- High energy absorption with short time to sparkover
- Arrester can be rotated through 180°
- No follow-on current
- Installation in distribution board
- Thermal protection function
- Coordination with VPU Type I

### Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>400 V</td>
</tr>
<tr>
<td>Max. continuous voltage, Uc (AC)</td>
<td>400 V</td>
</tr>
<tr>
<td>Requirements category acc. to IEC 61643-11</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>Rated discharge current ( I_d )</td>
<td>20 kA</td>
</tr>
<tr>
<td>Limiting discharge current ( I_l )</td>
<td>40 kA</td>
</tr>
<tr>
<td>Combined pulse ( U_{pul} )</td>
<td>10 kA</td>
</tr>
<tr>
<td>Short-circuit resistance ( I_{MAX} )</td>
<td>25 kA</td>
</tr>
<tr>
<td>Total discharge current ( I_{tot} )</td>
<td>80 kA</td>
</tr>
<tr>
<td>Sparkover time / Drop-out time</td>
<td>( \leq 25 ) ms</td>
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<tr>
<td>Fusing</td>
<td>125 A gal</td>
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<tr>
<td>Protection level ( U_d ) (typical)</td>
<td>( \leq 2.1 ) kV</td>
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<tr>
<td>Temporary surge voltage (over-voltage) - TIV</td>
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<tr>
<td>Optical function display</td>
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<tr>
<td>Design</td>
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<td>Colour</td>
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</tr>
<tr>
<td>Ambient temperature (operational)</td>
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<tr>
<td>Storage temperature</td>
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<tr>
<td>Connection according to IEC 947-7-1</td>
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<tr>
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<td>Stripping length</td>
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<tr>
<td>Tightening torque</td>
<td></td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>Approvals</td>
<td></td>
</tr>
<tr>
<td>Standards</td>
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### Connection according to IEC 947-7-1

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>VPU II 1 R 400 V / 40 kA</td>
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<td>1352840000</td>
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### Dimensions / Signalling contact info

<table>
<thead>
<tr>
<th>Clamping range (nominal / min. / max.)</th>
<th>( \text{mm}^2 )</th>
<th>Signalling contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5…16 mm²</td>
<td></td>
<td>No remote sig. contact</td>
</tr>
<tr>
<td>2.5…50 mm²</td>
<td></td>
<td>with remote signalling (R)</td>
</tr>
<tr>
<td>15 mm</td>
<td></td>
<td>No 250 V 1A 10Ω</td>
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### Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU II 2 400 V / 40 kA</td>
<td>1</td>
<td>1352850000</td>
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<tr>
<td>VPU II 2 R 400 V / 40 kA</td>
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<td>1352870000</td>
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### Accessories

<table>
<thead>
<tr>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pluggable spare arrester VPU II 0 400 V / 40 kA 1352820000</td>
</tr>
</tbody>
</table>
Type II surge protection

Type II N-PE arrester
• Tested according to IEC 61643-11 Type II
• Pluggable N-PE arrester
• Coded voltage level
• High energy absorption with short time to sparkover
• Insert can be rotated through 180°
• Installation in distribution board

Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>230 V</td>
</tr>
<tr>
<td>Max. continuous voltage, Uc (AC)</td>
<td>250 V</td>
</tr>
<tr>
<td>Requirements category acc. to IEC 61643-11</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>Rated discharge current (8/20 µs) Iₘₑ</td>
<td>20 kA</td>
</tr>
<tr>
<td>Excess current (8/20 µs) Iₑₑ</td>
<td>40 kA</td>
</tr>
<tr>
<td>Combined pulse Uₚₚ</td>
<td>10 kV</td>
</tr>
<tr>
<td>Sparkover time / Drop-out time</td>
<td>≤ 100 ms</td>
</tr>
<tr>
<td>Protection level Uₚₚ (typical)</td>
<td>≤ 1.5 kV</td>
</tr>
<tr>
<td>Temporary surge voltage (over-voltage) - TOV</td>
<td>1200 V</td>
</tr>
<tr>
<td>Optical function display</td>
<td>No</td>
</tr>
<tr>
<td>Design</td>
<td>Installation housing 1IE, Insta IP 20</td>
</tr>
<tr>
<td>Colour</td>
<td>Black, Arrester blue</td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>-40 °C...+70 °C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-40 °C...+80 °C</td>
</tr>
</tbody>
</table>

Connection according to IEC 947-7-1

<table>
<thead>
<tr>
<th>Connection Type</th>
<th>Rectangular</th>
<th>Stranded</th>
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</thead>
<tbody>
<tr>
<td>Solid</td>
<td>2.5...16 mm²</td>
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</tr>
<tr>
<td>Stranded</td>
<td>2.5...50 mm²</td>
<td></td>
</tr>
<tr>
<td>Tightening torque</td>
<td>15 mm</td>
<td></td>
</tr>
<tr>
<td>2...3 Nm</td>
<td></td>
<td></td>
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</tbody>
</table>

Approvals

IEC61643-11, EN61643-11

Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU II 1 N-PE 260V/40kA</td>
<td>1</td>
<td>1351170000</td>
</tr>
</tbody>
</table>

Accessories

Pluggable spare arrester VPU II 0 N-PE 440 V/40kA 1351180000
Type II surge protection

Type II/III surge protection Uc: 150 V
Suitable for 120/240 V mains systems
- Pluggable arrester
- Coded voltage level
- High energy absorption with short time to sparkover
- Arrester can be rotated through 180°
- No follow-on current
- Installation in distribution board
- Thermal protection function
- Coordination with VPU Type I

Technical data

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>Max. continuous voltage, Uc (AC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 V / 240 V</td>
<td>150 V</td>
</tr>
<tr>
<td>Type II, Type III</td>
<td></td>
</tr>
</tbody>
</table>

| Rated discharge current | 8/20 µs | 20 kA |
| Limiting discharge current | 8/20 µs | 40 kA |
| Sparkover time | ≤ 25 ms |
| Drop-out time | ≤ 25 ms |
| Protection level | U0 (typical) |
| Temporary surge voltage (over-voltage) | 120/240 V |
| Installation housing | 3TE, Insta IP 20 |
| Colour | Black, red |
| Ambient temperature (operational) | -40 °C...+80 °C |
| Storage temperature | -40 °C...+80 °C |

Installation according to IEC 61643-11

Dimensions / Signalling contact info

<table>
<thead>
<tr>
<th>Clamping range (nominal / min. / max.)</th>
<th>mm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height x width x depth</td>
<td>mm</td>
</tr>
</tbody>
</table>

Signalling contact

<table>
<thead>
<tr>
<th>No remote sig. contact</th>
<th>with remote signalling (R)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 / 2.5 / 50</td>
<td>16 / 2.5 / 50</td>
</tr>
<tr>
<td>250 V 1 A 1 NC</td>
<td></td>
</tr>
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</table>

Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU II 4 150V/40 kA</td>
<td>1</td>
<td>1352540000</td>
</tr>
<tr>
<td>VPU II 4 R 150V/40 kA</td>
<td>1</td>
<td>1352550000</td>
</tr>
<tr>
<td>VPU II 3 150V/40 kA</td>
<td>1</td>
<td>1352520000</td>
</tr>
<tr>
<td>VPU II 3 R 150V/40 kA</td>
<td>1</td>
<td>1352530000</td>
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</table>

Accessories

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard plug-in arrester VPU II 0 150 V/40 kA 1352450000</td>
<td>1</td>
<td>1352450000</td>
</tr>
</tbody>
</table>

Note

- Lightning and surge protection for low voltage facilities
- Suitable for 120/240 V mains systems
- Pluggable arrester
- Coded voltage level
- High energy absorption with short time to sparkover
- Arrester can be rotated through 180°
- No follow-on current
- Installation in distribution board
- Thermal protection function
- Coordination with VPU Type I
Lightning and surge protection for low voltage facilities

**Type II/III surge protection Uc: 150 V**

Suitable for 120/240 V mains systems

- Pluggable arrester
- Coded voltage level
- High energy absorption with short time to sparkover
- Arrester can be rotated through 180°
- No follow-on current
- Installation in distribution board
- Thermal protection function
- Coordination with VPU Type I

---

### Technical data

<table>
<thead>
<tr>
<th>Requirement</th>
<th>VPU II 2/R 150 V / 40 kA</th>
<th>VPU II 1/R 150 V / 40 kA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rated voltage</strong></td>
<td>120 V</td>
<td>120 V</td>
</tr>
<tr>
<td><strong>Max. continuous voltage, Uc (AC)</strong></td>
<td>150 V</td>
<td>150 V</td>
</tr>
<tr>
<td><strong>Type II, Type III</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rated discharge current</strong></td>
<td>20 kA</td>
<td>20 kA</td>
</tr>
<tr>
<td><strong>25 kA</strong></td>
<td>30 kA</td>
<td>40 kA</td>
</tr>
<tr>
<td><strong>380 kA</strong></td>
<td>50 kA</td>
<td>40 kA</td>
</tr>
<tr>
<td><strong>80 kA</strong></td>
<td>10 kV</td>
<td>10 kV</td>
</tr>
<tr>
<td><strong>125 A gl</strong></td>
<td>125 A gl</td>
<td>125 A gl</td>
</tr>
<tr>
<td><strong>≤ 0.9 kV</strong></td>
<td>≤ 0.9 kV</td>
<td>≤ 0.9 kV</td>
</tr>
<tr>
<td><strong>230 V</strong></td>
<td>230 V</td>
<td>230 V</td>
</tr>
<tr>
<td><strong>green = OK; red = arrester is defective - replace</strong></td>
<td>230 V</td>
<td>230 V</td>
</tr>
<tr>
<td><strong>Installation housing</strong></td>
<td>2TE, Insta IP 20</td>
<td>2TE, Insta IP 20</td>
</tr>
<tr>
<td><strong>Black, Arrester red</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>-40 °C...+80 °C</strong></td>
<td>-40 °C...+80 °C</td>
<td>-40 °C...+80 °C</td>
</tr>
<tr>
<td><strong>2.5...16 mm²</strong></td>
<td>2.5...16 mm²</td>
<td>2.5...16 mm²</td>
</tr>
<tr>
<td><strong>2.5...50 mm²</strong></td>
<td>2.5...50 mm²</td>
<td>2.5...50 mm²</td>
</tr>
<tr>
<td><strong>15 mm</strong></td>
<td>15 mm</td>
<td>15 mm</td>
</tr>
<tr>
<td><strong>2...3 Nm</strong></td>
<td>2...3 Nm</td>
<td>2...3 Nm</td>
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### Dimensions / Signalling contact info

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<thead>
<tr>
<th>Requirement</th>
<th>VPU II 2/R 150 V / 40 kA</th>
<th>VPU II 1/R 150 V / 40 kA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clamping range (minimum / min. / maximum)</strong></td>
<td>mm²</td>
<td>mm²</td>
</tr>
<tr>
<td><strong>Height x width x depth</strong></td>
<td>mm</td>
<td>mm</td>
</tr>
<tr>
<td><strong>Signalling contact</strong></td>
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<td></td>
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</tbody>
</table>

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### Ordering data

<table>
<thead>
<tr>
<th>Requirement</th>
<th>VPU II 2 150V/40KA</th>
<th>VPU II 2 R 150V/40KA</th>
<th>VPU II 1 150V/40KA</th>
<th>VPU II 1 R 150V/40KA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>VPU II 2 150V/40KA</td>
<td>1</td>
<td>1352490000</td>
<td>VPU II 1 150V/40KA</td>
</tr>
<tr>
<td><strong>Qty.</strong></td>
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<td></td>
<td></td>
<td>1</td>
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<tr>
<td><strong>Order No.</strong></td>
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<td>1352470000</td>
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### Accessories

<table>
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<tr>
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<th>VPU II 2 150V/40KA</th>
<th>VPU II 2 R 150V/40KA</th>
<th>VPU II 1 150V/40KA</th>
<th>VPU II 1 R 150V/40KA</th>
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</thead>
<tbody>
<tr>
<td><strong>Pluggable spare arrester VPU II 0 150 V/40 KA</strong></td>
<td>1352450000</td>
<td></td>
<td></td>
<td>1352450000</td>
</tr>
</tbody>
</table>

---
**Type II surge protection**

**Type II/III surge protection Uₜ: 75 V**
- Pluggable arrester
- Coded voltage level
- High energy absorption with short time to sparkover
- Arrester can be rotated through 180°
- No follow-on current
- Installation in distribution board
- Thermal protection function

### Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>48 V, 75 V</td>
</tr>
<tr>
<td>Requirements category acc. to IEC 61643-11</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>Rated discharge current (I(20 μs)) Iₚ₀</td>
<td>15 kA</td>
</tr>
<tr>
<td>Limiting discharge current (Iₚ₄₅₈₅₉₅₉) Iₚ₄₅₈₅₉₅₉</td>
<td>30 kA</td>
</tr>
<tr>
<td>Discharge current, max. (I(20 μs)) Iₚ₃₅₈₅₉₅₉</td>
<td>10 kA</td>
</tr>
<tr>
<td>Combined pulse Uₚ₃₅₈₅₉₅₉</td>
<td>25 kA</td>
</tr>
<tr>
<td>Short-circuit resistance Uₚ₃₅₈₅₉₅₉</td>
<td>60 kA</td>
</tr>
<tr>
<td>Total discharge current Iₚ₃₅₈₅₉₅₉</td>
<td>30 μA</td>
</tr>
<tr>
<td>Sparkover time / Drop-out time</td>
<td>≤ 25 ms</td>
</tr>
<tr>
<td>Protection level Uₜ (typical)</td>
<td>125 A gl</td>
</tr>
<tr>
<td>Temporary surge voltage (over-voltage) - TOV</td>
<td>≤ 0.65 kV</td>
</tr>
<tr>
<td>Optical function display</td>
<td>92 V</td>
</tr>
<tr>
<td>Design</td>
<td>green – OK, red – arrester is defective – replace</td>
</tr>
<tr>
<td>Colour</td>
<td>Installation housing 2TL</td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>Black, Arrester red</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-40 °C...+70 °C</td>
</tr>
<tr>
<td>Connection according to IEC 947-7-1</td>
<td>-40 °C...+80 °C</td>
</tr>
<tr>
<td>Solid</td>
<td>2...3 m</td>
</tr>
<tr>
<td>Stranded</td>
<td>2...3 mm</td>
</tr>
<tr>
<td>Stripping length</td>
<td>2.5...16 mm²</td>
</tr>
<tr>
<td>Tightening torque</td>
<td>2.5...50 mm²</td>
</tr>
<tr>
<td>Approvals</td>
<td>IEC61643-11, EN61643-11</td>
</tr>
<tr>
<td>Approvals Standards</td>
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### Dimensions / Signalling contact info

<table>
<thead>
<tr>
<th>Configuration</th>
<th>mm²</th>
<th>mm</th>
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<tbody>
<tr>
<td>Clamping range</td>
<td></td>
<td></td>
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<tr>
<td>(nominal / min. / max.)</td>
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### Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU II 2 /R 75 V /30 kA</td>
<td>1</td>
<td>13524200000</td>
</tr>
<tr>
<td>VPU II 2 R 75 V /30 kA</td>
<td>1</td>
<td>13524300000</td>
</tr>
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### Accessories

Pluggable spare arrester VPU II 0 75 V/40 kA-13505300000

---

**Lightning and surge protection for low voltage facilities**

**Technical data**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>48 V, 75 V</td>
</tr>
<tr>
<td>Requirements category acc. to IEC 61643-11</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>Rated discharge current (I(20 μs)) Iₚ₀</td>
<td>15 kA</td>
</tr>
<tr>
<td>Limiting discharge current (Iₚ₄₅₈₅₉₅₉) Iₚ₄₅₈₅₉₅₉</td>
<td>30 kA</td>
</tr>
<tr>
<td>Discharge current, max. (I(20 μs)) Iₚ₃₅₈₅₉₅₉</td>
<td>10 kA</td>
</tr>
<tr>
<td>Combined pulse Uₚ₃₅₈₅₉₅₉</td>
<td>25 kA</td>
</tr>
<tr>
<td>Short-circuit resistance Uₚ₃₅₈₅₉₅₉</td>
<td>60 kA</td>
</tr>
<tr>
<td>Total discharge current Iₚ₃₅₈₅₉₅₉</td>
<td>30 μA</td>
</tr>
<tr>
<td>Sparkover time / Drop-out time</td>
<td>≤ 25 ms</td>
</tr>
<tr>
<td>Protection level Uₜ (typical)</td>
<td>125 A gl</td>
</tr>
<tr>
<td>Temporary surge voltage (over-voltage) - TOV</td>
<td>≤ 0.65 kV</td>
</tr>
<tr>
<td>Optical function display</td>
<td>92 V</td>
</tr>
<tr>
<td>Design</td>
<td>green – OK, red – arrester is defective – replace</td>
</tr>
<tr>
<td>Colour</td>
<td>Installation housing 2TL</td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>Black, Arrester red</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-40 °C...+70 °C</td>
</tr>
<tr>
<td>Connection according to IEC 947-7-1</td>
<td>-40 °C...+80 °C</td>
</tr>
<tr>
<td>Solid</td>
<td>2...3 m</td>
</tr>
<tr>
<td>Stranded</td>
<td>2...3 mm</td>
</tr>
<tr>
<td>Stripping length</td>
<td>2.5...16 mm²</td>
</tr>
<tr>
<td>Tightening torque</td>
<td>2.5...50 mm²</td>
</tr>
<tr>
<td>Approvals</td>
<td>IEC61643-11, EN61643-11</td>
</tr>
<tr>
<td>Approvals Standards</td>
<td></td>
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</tbody>
</table>

### Dimensions / Signalling contact info

<table>
<thead>
<tr>
<th>Configuration</th>
<th>mm²</th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamping range</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(nominal / min. / max.)</td>
<td></td>
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<tr>
<td>Height x width x depth</td>
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### Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU II 1 /R 75 V /30 kA</td>
<td>1</td>
<td>13523900000</td>
</tr>
<tr>
<td>VPU II 1 R 75 V /30 kA</td>
<td>1</td>
<td>13524200000</td>
</tr>
</tbody>
</table>

### Accessories

Pluggable spare arrester VPU II 0 75 V/40 kA-13505300000
**Lightning and surge protection for low voltage facilities**

**Type II/III surge protection Uc: 600 V**

- Suitable for 600/1000 V mains systems
- Pluggable arrester
- Coded voltage level
- High energy absorption with short time to sparkover
- Arrester can be rotated through 180°
- No follow-on current
- Installation in distribution board
- Thermal protection function
- Coordination with VPU Type I

### Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>600 V / 1000 V</td>
</tr>
<tr>
<td>Max. continuous voltage, Uc (AC)</td>
<td>600 V</td>
</tr>
<tr>
<td>Requirements category acc. to IEC 61643-11</td>
<td>Type II, Type III</td>
</tr>
<tr>
<td>Rated discharge current (8/20 μs)</td>
<td>12.5 kA</td>
</tr>
<tr>
<td>Limiting discharge current (8/20 μs)</td>
<td>25 kA</td>
</tr>
<tr>
<td>Discharge current, max. (8/20 μs)</td>
<td>25 kA</td>
</tr>
<tr>
<td>Combined pulse Uc</td>
<td>10 kV</td>
</tr>
<tr>
<td>Short-circuit resistance Umax</td>
<td>25 kA</td>
</tr>
<tr>
<td>Total discharge current Idis</td>
<td>100 kA</td>
</tr>
<tr>
<td>PE conductor current Ip</td>
<td>30 μA</td>
</tr>
<tr>
<td>Sparkover time / Drop-out time</td>
<td>≤ 25 ms</td>
</tr>
<tr>
<td>Protection level U0 (typical)</td>
<td>125 A gl</td>
</tr>
<tr>
<td>Temporary surge voltage (over-voltage) - TOV</td>
<td>≤ 2.35 kV</td>
</tr>
<tr>
<td>LIMITING DISCHARGE CURRENT DISCHARGE CURRENT - S</td>
<td>≤ 2.35 kV</td>
</tr>
<tr>
<td>Installation housing 3 TE, Insta IP 20</td>
<td>820 V</td>
</tr>
<tr>
<td>Black, Arrester red</td>
<td>Installation house 4 TE, Insta IP 20</td>
</tr>
<tr>
<td>-40 °C...+70 °C</td>
<td>Black, Arrester red</td>
</tr>
<tr>
<td>-40 °C...+65 °C</td>
<td>40 °C...+70 °C</td>
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<tr>
<td>2.5...16 mm²</td>
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<td>2.5...16 mm²</td>
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<tr>
<td>2...3 mm</td>
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</tr>
<tr>
<td>2...3 Nm</td>
<td>2...3 Nm</td>
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### Dimensions / Signalling contact info

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamping range (nominal / min. / max.)</td>
<td>mm²</td>
</tr>
<tr>
<td>Height x width x depth</td>
<td>mm</td>
</tr>
<tr>
<td>Signalling contact</td>
<td>Note</td>
</tr>
</tbody>
</table>

### Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
</table>

**Accessories**

- Pluggable spare arrester VPU II 0 600 V / 40 kA 1352930000
- Pluggable spare arrester VPU II 0 800 V / 40 kA 1352930000
Type II/III surge protection Uc: 600 V
Suitable for 600/1000 V mains systems

- Pluggable arrester
- Coded voltage level
- High energy absorption with short time to sparkover
- Arrester can be rotated through 180°
- No follow-on current
- Installation in distribution board
- Thermal protection function
- Coordination with VPU Type I

Lightning and surge protection
for low voltage facilities

Technical data

Rated voltage
Max. continuous voltage, Uc (AC)
Requirements category acc. to IEC 61643-11
Rated discharge current (8/20 μs) Iλ
Limiting discharge current (8/20 μs) Iμ
Discharge current, max. (8/20 μs) In
Combined pulse Uoc
Short-circuit resistance ISCCR
Total discharge current Itotal
PE conductor current IPE
Sparkover time
Drop-out time
Protection level Uλ (typical)
Temporary surge voltage (over-voltage) - TOV
Optical function display
Design
Colour
Ambient temperature (operational)
Storage temperature

Connection according to IEC 947-7-1
Solid
Stranded
Stripping length
Tightening torque
Approvals
Standards

Dimensions / Signalling contact info
Clamping range (nominal / min. / max.) mm²
Height x width x depth mm
Signalling contact

Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU II 2/R 600 V / 25 kA</td>
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<td>1352570000</td>
</tr>
<tr>
<td>VPU II 1/R 600 V / 25 kA</td>
<td>1</td>
<td>1352580000</td>
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</table>

Accessories

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pluggable spare arrester VPU II 0 600 V / 40 kA</td>
<td>1</td>
<td>1352930000</td>
</tr>
</tbody>
</table>

Note

1366910000 - 2013
Lightning and surge protection for low voltage facilities

Type II/III surge protection Uc: 750 V
Suitable for generator protection in wind turbines
- Pluggable arrester
- Coded voltage level
- High energy absorption with short time to sparkover
- Arrester can be rotated through 180°
- No follow-on current
- Installation in distribution board
- Thermal protection function
- Co-ordination with VPU Type I

Technical data

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>460 V, 750 V</td>
</tr>
<tr>
<td>Type II, Type III</td>
<td>12.5 kA</td>
</tr>
<tr>
<td>PE conductor current</td>
<td>25 kA</td>
</tr>
<tr>
<td>Sparkover time</td>
<td>≤ 25 ms</td>
</tr>
<tr>
<td>Protection level</td>
<td>≤ 2.6 kV</td>
</tr>
<tr>
<td>Connection according to IEC 61643-11</td>
<td>94 °C, 70 °C</td>
</tr>
<tr>
<td>PE conductor current</td>
<td>30 mA</td>
</tr>
<tr>
<td>Sparkover time</td>
<td>≤ 25 ms</td>
</tr>
<tr>
<td>Connection according to IEC 61643-11</td>
<td>94 °C, 70 °C</td>
</tr>
<tr>
<td>PE conductor current</td>
<td>30 mA</td>
</tr>
<tr>
<td>Sparkover time</td>
<td>≤ 25 ms</td>
</tr>
<tr>
<td>Connection according to IEC 61643-11</td>
<td>94 °C, 70 °C</td>
</tr>
<tr>
<td>PE conductor current</td>
<td>30 mA</td>
</tr>
<tr>
<td>Sparkover time</td>
<td>≤ 25 ms</td>
</tr>
</tbody>
</table>

Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU II 4/R 750 V / 25 kA</td>
<td>1</td>
<td>1351120000</td>
</tr>
<tr>
<td>VPU II 3/R 750 V / 25 kA</td>
<td>1</td>
<td>1351130000</td>
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Accessories

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spare arrester VPU II 50 V/25 kA</td>
<td>1</td>
<td>1351030000</td>
</tr>
</tbody>
</table>

C.54 1366910000 - 2013
Type II/III surge protection $U_c$: 750 V
Suitable for generator protection in wind turbines

- Pluggable arrester
- Coded voltage level
- High energy absorption with short time to sparkover
- Arrester can be rotated through 180°
- No follow-on current
- Installation in distribution board
- Thermal protection function
- Co-ordination with VPU Type I

VPU II 3+1/R 750 V / 25 kA

Technical data

- Rated voltage
  - 440 V
  - 750 V
- Type II, Type III
- 12.5 kA
- 25 kA
- 25 kA
- 10 kV
- 25 kA
- 100 kA
- ≤ 2.6 kV
- ≤ 2.6 kV
- 980 V
- green = OK, red = arrester is defective - replace
- Installation housing 4TE, Inste IP 20
- Black, Arrester red / blue
- 40 °C ... +70 °C
- 40 °C ... +80 °C
- 2.5...16 mm²
- 2.5...50 mm²
- 15 mm
- 2...3 mm

Connection according to IEC 947-7-1

- Solid
- Stranded
- Stripping length
- Tightening torque
- Approvals
- Standards

Dimensions / Signalling contact info

- Clamping range (nominal / min. / max.) mm²
  - 16 / 2.5 / 50
  - 94 / 71.2 / 69
- Height x width x depth mm
  - 100 / 71.2 / 69
- Size
  - No
- 250 V 1A 10D

Ordering data

- No remote sig. contact with remote signalling (R)

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU II 3+1/R</td>
<td>1</td>
<td>1351140000</td>
</tr>
<tr>
<td>VPU II 3+1</td>
<td>1</td>
<td>1351150000</td>
</tr>
</tbody>
</table>

Accessories

- Spare arrester L.N VPU II 3/R 750 V/25 kA 1351100000
- VPU II 3+1/R 250 V/10 kA 1351180000

Note
Type II surge protection

Type II/III surge protection Uc: 750 V
Suitable for generator protection in wind turbines

- Pluggable arrester
- Coded voltage level
- High energy absorption with short time to sparkover
- Arrester can be rotated through 180°
- No follow-on current
- Installation in distribution board
- Thermal protection function
- Co-ordination with VPU Type I

Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>460 V</td>
</tr>
<tr>
<td>Max. continuous voltage, Uc (AC)</td>
<td>750 V</td>
</tr>
<tr>
<td>Requirements category acc. to IEC 61643-11</td>
<td>12.5 kA</td>
</tr>
<tr>
<td>Rated discharge current (8/20 μs) Ith</td>
<td>25 kA</td>
</tr>
<tr>
<td>Limiting discharge current (8/20 μs) Ifinal</td>
<td>25 kA</td>
</tr>
<tr>
<td>Discharge current, max. (8/20 μs)</td>
<td>10 kV</td>
</tr>
<tr>
<td>Combined pulse Ucmax</td>
<td>750 V</td>
</tr>
<tr>
<td>Short-circuit resistance Ithmax</td>
<td>750 V</td>
</tr>
<tr>
<td>Total discharge current Ithout</td>
<td>125 A</td>
</tr>
<tr>
<td>Sparkover time / Drop-out time</td>
<td>≤ 25 ms</td>
</tr>
<tr>
<td>Protection level Uc (typical)</td>
<td>≤ 2.6 kV</td>
</tr>
<tr>
<td>Temporary surge voltage (over-voltage) · TDV</td>
<td>980 V</td>
</tr>
<tr>
<td>Optical function display</td>
<td>green – GR, red – arrester is defective - replace</td>
</tr>
<tr>
<td>Design</td>
<td>Installation housing 2TE, Insta IP 20</td>
</tr>
<tr>
<td>Colour</td>
<td>Black, arrester red</td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>-40 °C ... +70 °C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-40 °C ... +80 °C</td>
</tr>
<tr>
<td>Connection according to IEC 947-7-1</td>
<td>2.5 ... 16 mm²</td>
</tr>
<tr>
<td></td>
<td>2.5 ... 50 mm²</td>
</tr>
<tr>
<td></td>
<td>15 mm</td>
</tr>
<tr>
<td></td>
<td>2 ... 3 Nm</td>
</tr>
<tr>
<td>Approvals</td>
<td></td>
</tr>
<tr>
<td>Approvals</td>
<td></td>
</tr>
<tr>
<td>Standards</td>
<td>IEC61643-11, EN61643-11</td>
</tr>
</tbody>
</table>

Dimensions / Signalling contact info

| Clamping range (nominal / min. / max.) | 2.5 ... 16 mm² |
| Height x width x depth                | 2.5 ... 50 mm² |

Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU II 2 R 750 V / 25 kA</td>
<td>1</td>
<td>1351070000</td>
</tr>
<tr>
<td>VPU II 2 R 750 V / 25 kA</td>
<td>1</td>
<td>1351080000</td>
</tr>
</tbody>
</table>

Accessories

| Note                      | Spare arrester VPU II 0 750 V/25 kA 1351030000 |

Note

Accessories
DC surge protection for photovoltaic facilities

For the DC voltage side, Weidmüller offers complete protection with a comprehensive range of surge arresters. For cable lengths of more than 10 m between the PV generator and the inverter, protection is needed at both ends. This means that both the generators and the inverter are protected.

### External lightning protection available
And the separation distances are observed (Type II)

### External lightning protection not available
(Type II)

#### VPU II 3/R 1.000 V DC PV

Failure to comply with the separation distance S

If the separation distance S according to EN 62305 is not observed ($S < \text{min}$), then partial lightning currents need to be taken into account. A shielded generator main line with sufficient cross-sectional area (min. 16 mm$^2$) should be used. The adjacent picture shows an implementation that reaches LPZ 1. Here the surge protection from the Class II arrester can be installed in line with the existing standards (product selection, see above).

Another alternative is type I lightning and surge protection, especially for plants where the separation distance cannot be observed, e.g. installation on tin roofs.

### Ready-made standard solutions
Weidmüller offers an extensive range of combiner boxes with overvoltage protection for the DC side. It comprises solutions pre-wired for 1 to 16 string applications in various versions. Our Photovoltaic Catalogue (order number 1344440000) contains a complete list of our standard solutions.
Type I and II lightning arrester for use in photovoltaic applications

- Suitable for lightning protection level III and IV (LPL III/IV)
- Can also be used as Type II surge protection
- Tested in accordance with EN 50539-11
- Suitable for use in accordance with IEC 60364-12
- Use if the separation distance cannot be observed

**Technical data**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. continuous voltage, Uc (DC)</td>
<td>600 V</td>
</tr>
<tr>
<td>Type I, Type II / T1, T2</td>
<td>12.5 kA</td>
</tr>
<tr>
<td>Discharge current</td>
<td>40 kA</td>
</tr>
<tr>
<td>Rated discharge current (8/20 μs)</td>
<td>20 kA</td>
</tr>
<tr>
<td>Discharge current, max. (8/20 μs)</td>
<td>30 μA</td>
</tr>
<tr>
<td>Sparkover time</td>
<td>≤ 25 ns</td>
</tr>
<tr>
<td>Drop-out time</td>
<td>≤ 25 ms</td>
</tr>
<tr>
<td>PV voltage, acc. to IEC 60364-12</td>
<td>≤ 1.8 kV</td>
</tr>
<tr>
<td>Discharge current, nominal, per path, (8/20 μs)</td>
<td>≤ 50 A</td>
</tr>
<tr>
<td>PE conductor current IPE</td>
<td>≤ 50 A</td>
</tr>
<tr>
<td>Installation housing</td>
<td>4TE, Insta IP 20</td>
</tr>
<tr>
<td>Colour</td>
<td>Black</td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>-40 °C...+80 °C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-40 °C...+80 °C</td>
</tr>
<tr>
<td>Connection according to IEC 947-7-1</td>
<td>Solid, Stranded</td>
</tr>
<tr>
<td>Stripping length</td>
<td>2.5...16 mm², 2.5...50 mm², 15 mm, 2...3 mm</td>
</tr>
<tr>
<td>Tightening torque</td>
<td>2...3 Nm</td>
</tr>
<tr>
<td>Technical data - photovoltaic</td>
<td></td>
</tr>
<tr>
<td>600 V DC</td>
<td>≤ 1.8 kV</td>
</tr>
<tr>
<td>≤ 1.8 kV</td>
<td>≤ 2.6 kV</td>
</tr>
<tr>
<td>EN 50539-11</td>
<td>EN 50539-11</td>
</tr>
<tr>
<td>50 A</td>
<td>≤ 2.8 kV</td>
</tr>
<tr>
<td>600 V</td>
<td>1000 V</td>
</tr>
<tr>
<td>EN 50539-11</td>
<td>EN 50539-11</td>
</tr>
</tbody>
</table>

**Approvals**

- Approvals
- Standards
- Dimensions
- Clamping range (nominal / min. / max.) mm²
- Height x width x depth mm
- Signalling contact

**Ordering data**

<table>
<thead>
<tr>
<th>Type Qty. Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU I 2+0 PV 600 V DC</td>
</tr>
<tr>
<td>VPU I 2+0 PV 1000 V DC</td>
</tr>
</tbody>
</table>

**Accessories**

- Note

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**Lightning and surge protection for photovoltaic systems on the DC side**

*Photovoltaics*

**VPU I 2+0 PV 600 V**

- Type Qty. Order No.
- VPU I 2+0 PV 600 V DC | 1 | 1351520000 |
- VPU I 2+0 PV 1000 V DC | 1 | 1351470000 |
Lightning and surge protection for photovoltaic systems on the DC side

**Type II surge voltage arrester for use in photovoltaic applications**
- Pluggable arrester
- Suitable for protecting DC systems as Type II arrester
- Encapsulated, non-blow-out arrester
- Tested in accordance with EN 50539-11
- Pluggable arresters
- Suitable for use in accordance with IEC 60364-12
- Encapsulated, non-blow-out arrester
- Tested in accordance with EN 50539-11

**Technical data**

Max. continuous voltage, Uc (DC)
Requirements class
Discharge current, max. (8/20 s)
Rated discharge current (8/20 s)
PV voltage, acc. to IEC 60364-
Discharge current, nominal, per path, (8/20 s)
PE conductor current IPE
Sparkover time
Drop-out time
Optical function display
Design
Colour
Ambient temperature (operational)
Storage temperature
Connection according to IEC 947-7-1
Solid
Stranded
Stripping length
Tightening torque

**Technical data - photovoltaic**

Maximum continuous operating voltage UCPV mode
Protection level UP mode
Conditions and requirements
Short circuit protection Iscpv
Protection level UP at In (per module)
PV system voltage, max. Ucpv

**Approvals**

Standards

**Dimensions**

Clamping range (nominal / min. / max.) mm²
Height x width x depth mm
Signalling contact

**Ordering data**

Type Qty. Order No.
VPU II 2 PV 1000V DC 1 1351220000
VPU II 2 R PV 1000V DC 1 1351240000

**Accessories**

Pluggable spare arrester VPU II 0 PV 1,000 V-1351190000

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Lightning and surge protection for low voltage facilities
Lightning and surge protection for photovoltaic systems on the DC side

**Technical data**

<table>
<thead>
<tr>
<th>Max. continuous voltage, Uc (DC)</th>
<th>600 V Type II / T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirements class</td>
<td></td>
</tr>
<tr>
<td>Discharge current, max. (8/20 μs)</td>
<td>40 kA</td>
</tr>
<tr>
<td>Rated discharge current (8/20 μs)</td>
<td>20 kA</td>
</tr>
<tr>
<td>PE conductor current IPE</td>
<td></td>
</tr>
<tr>
<td>Sparkover time / Drop-out time</td>
<td></td>
</tr>
<tr>
<td>Optical function display</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td></td>
</tr>
<tr>
<td>Storage temperature</td>
<td></td>
</tr>
</tbody>
</table>

**Connection according to IEC 947-7-1**

- Solid
- Stranded
- Stripping length
- Tightening torque

**Technical data - photovoltaics**

- Maximum continuous operating voltage UCPV mode +/−, PE, +/−PE
- Protection level Uc, mode +/−, PE, +/−PE
- Conditions and requirements
- Short circuit protection Icm
- Protection level Uc at Icm (per module)
- PV system voltage, max. Ucpv

**Approvals**

- Approvals
- Standards

**Dimensions**

- Clamping range (nominal / min. / max.) mm²
- Height x width x depth mm
- Signalling contact

**Ordering data**

- no remote sig. contact
- with remote signalling (R)

**Accessories**

- Pluggable spare arrester VPU II 0 PV 1200 V-1351390000

---

**Type II surge voltage arrester for use in photovoltaic applications**

- Pluggable arrester
- Suitable for protecting DC systems as Type II arrester
- Encapsulated, non-blow-out arrester
- Tested in accordance with EN 50539-11
- Pluggable arresters
- Suitable for use in accordance with IEC 60364-12

**Type II surge voltage arrester for use in photovoltaic applications**

<table>
<thead>
<tr>
<th>VPU II 2 PV/R 600 V Photovoltaics</th>
<th>VPU II 3 PV/R 1200 V Photovoltaics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type Qty. Order No.</td>
<td>Type Qty. Order No.</td>
</tr>
<tr>
<td>VPU II 2 PV 600V DC</td>
<td>VPU II 2 PV 1200V DC</td>
</tr>
<tr>
<td>VPU II 2 R PV 600V DC</td>
<td>VPU II 3 R PV 1200V DC</td>
</tr>
</tbody>
</table>

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**Technical data**

<table>
<thead>
<tr>
<th>Max. continuous voltage, Uc (DC)</th>
<th>600 V Type II / T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirements class</td>
<td></td>
</tr>
<tr>
<td>Discharge current, max. (8/20 μs)</td>
<td>40 kA</td>
</tr>
<tr>
<td>Rated discharge current (8/20 μs)</td>
<td>20 kA</td>
</tr>
<tr>
<td>PE conductor current IPE</td>
<td></td>
</tr>
<tr>
<td>Sparkover time / Drop-out time</td>
<td></td>
</tr>
<tr>
<td>Optical function display</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td></td>
</tr>
<tr>
<td>Storage temperature</td>
<td></td>
</tr>
</tbody>
</table>

**Connection according to IEC 947-7-1**

- Solid
- Stranded
- Stripping length
- Tightening torque

**Technical data - photovoltaics**

- Maximum continuous operating voltage UCPV mode +/−, PE, +/−PE
- Protection level Uc, mode +/−, PE, +/−PE
- Conditions and requirements
- Short circuit protection Icm
- Protection level Uc at Icm (per module)
- PV system voltage, max. Ucpv

**Approvals**

- Approvals
- Standards

**Dimensions**

- Clamping range (nominal / min. / max.) mm²
- Height x width x depth mm
- Signalling contact

**Ordering data**

- no remote sig. contact
- with remote signalling (R)
Lightning and surge protection for photovoltaic systems on the DC side

Type II surge voltage arrester for use in photovoltaic applications

- Pluggable arrester
- Suitable for protecting DC systems as Type II arrester
- Encapsulated, non-blow-out arrester
- Tested in accordance with EN 50539-11
- Pluggable arresters
- Suitable for use in accordance with IEC 60364-11

Use if the separation distance can be observed

VPU II 3 PVR 1500 V

Photovoltaics

Technical data

<table>
<thead>
<tr>
<th>Max. continuous voltage, Uc (DC)</th>
<th>Type II / T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirements class</td>
<td>25 kA</td>
</tr>
<tr>
<td>Discharge current, max. (8/20 µs)</td>
<td>12.5 kA</td>
</tr>
<tr>
<td>Rated discharge current (8/20 µs), Iₚ</td>
<td>≤ 1500 V</td>
</tr>
<tr>
<td>PV voltage, acc. to IEC 60364-7-11</td>
<td>12.5 kA</td>
</tr>
<tr>
<td>Discharge current, nominal(per path), (8/20 µs)</td>
<td>30 µA</td>
</tr>
<tr>
<td>PE conductor current Iₚ</td>
<td>≤ 25 mA</td>
</tr>
<tr>
<td>Sparkover time / Drop-out time</td>
<td>green = OK, red = arrester is defective - replace</td>
</tr>
<tr>
<td>Optical function display</td>
<td>Installation housing 3TE, Inste IP 20</td>
</tr>
<tr>
<td>Design</td>
<td>Black, Arrester red</td>
</tr>
<tr>
<td>Colour</td>
<td>-40 °C ... +70 °C</td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>-40 °C ... +80 °C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>2.5 ... 16 mm²</td>
</tr>
<tr>
<td>Solid</td>
<td>2.5 ... 50 mm²</td>
</tr>
<tr>
<td>Stranded</td>
<td>15 mm</td>
</tr>
<tr>
<td>Stripping length</td>
<td>2 ... 3 mm</td>
</tr>
<tr>
<td>Tightening torque</td>
<td>2.5 ... 16 mm²</td>
</tr>
<tr>
<td>2.5 ... 50 mm²</td>
<td>1500 V DC</td>
</tr>
<tr>
<td></td>
<td>≤ 5.2 kV</td>
</tr>
<tr>
<td>Protection level Uₚ mode (+/-, /PE, +/PE)</td>
<td>EN 50539-11</td>
</tr>
<tr>
<td>Conditions and requirements</td>
<td>50 A</td>
</tr>
<tr>
<td>Short circuit protection Uₚ</td>
<td>≤ 5.2 kV</td>
</tr>
<tr>
<td>Protection level Uₚ at Uₚ (per module)</td>
<td>1500 V DC</td>
</tr>
<tr>
<td>PV system voltage, max. Ucv</td>
<td>EN 50539-11</td>
</tr>
</tbody>
</table>

Approvals

- Approvals
- Standards

Dimensions

| Clamping range (nominal / min. / max.) | 16 / 2.5 / 50 |
| Height x width x depth | 94 / 53.4 / 69 |

Signalling contact

| No | 250 V 1 A 1 NC |

Ordering data

- no remote sig. contact
- with remote signalling (R)

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU II 3 PV 1500 V DC</td>
<td>1</td>
<td>13515000000</td>
</tr>
<tr>
<td>VPU II 3 R PV 1500 V DC</td>
<td>1</td>
<td>13515300000</td>
</tr>
</tbody>
</table>

Accessories

- Pluggable spare arrester VPU II 0 PV 1500 V-13514800000
Type III surge protection for end devices

Low-voltage consumer installations, small distribution units and electronics

Surge protection module type III

Our surge protection modules VPU III and VPO DS protect low voltage consumer installations and electronic devices from voltage surges that occur through atmospheric discharge (lightning) or switching activities (transients). The VPU III and the VPO DS can be built into small distribution boards or into multi-floor distribution boards. The VPU III satisfies the requirements of IEC 61643-11.

Functional check and maintenance

Varistors can exhibit high temperatures as a result of ageing. In low-voltage systems, this can result in fire. The integrated temperature monitoring device automatically disconnects the varistor from the power supply. This disconnection is indicated by the warning lamp being extinguished.

With the VPU III type, a switch contact is also fitted for signalling. With the VPO DS, an LED is used to indicate status and with the VPO ADS a buzzer highlights any error messages.

The back-up fuse you install depends on the conductor cross-section and type of routing. For VPU III arresters, the maximum power rating is 16 A. The connection is rated to IEC 947-7-1 for the following cross-sections:
- solid conductor: 0.5...2.5 mm²
- flexible conductor: 0.5...2.5 mm²

Electrical connection

The VPU III or VPO DS surge protection device is installed after the VPU II arrester and before the device / consumer to be protected. It can protect electrical circuits of up to 16 A. An installation can be done in a consumer unit for an electrical circuit that protects monitors, for example..
The standard implementation for operating the VPU III products is a series connection to the end device. Under this operational state, the protective device can bear a long-term load of 16 A. For higher demands, parallel circuitry is used.
VPU III surge protection for terminal devices
Maximum type III protection from surges

This product line provides an integrated protective strategy for surge protection for end devices. Rail-based mounting installations are especially important for industrial applications. For this reason, the housing design has been adapted to the standardised installation dimensions.

The VPU III has a wide array of available functions. A status signal and a connection for the floating contact make the unit easy to service. A defective device can easily be swapped out because of the plug-in connectors. The VPU III covers all standard nominal voltages in the power range: 12 V, 24 V, 48 V, 120 V and 230 V.

Faster to assemble
The optimised mounting rail clip enables easy and quick installation, without the need for tools.
Type III surge protection for end devices

Best overview
LEDs provide clearly visible information on the status of the protective function

Rapid status messaging
The remote signaling contact provides reliable information regarding the status of the protective function
## Technical data

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage (AC)</td>
<td>230 V</td>
</tr>
<tr>
<td>Rated voltage (DC)</td>
<td>380 V</td>
</tr>
<tr>
<td>Type III</td>
<td>3 kV</td>
</tr>
<tr>
<td>1.5 kA</td>
<td>16 A</td>
</tr>
<tr>
<td>3 kA</td>
<td>16 A</td>
</tr>
<tr>
<td>9 µA</td>
<td>&lt; 100 ns</td>
</tr>
<tr>
<td>16 A</td>
<td>16 A</td>
</tr>
<tr>
<td>≤ 1.8 kV</td>
<td>≤ 1.75 kV</td>
</tr>
<tr>
<td>440 V</td>
<td>228 V</td>
</tr>
<tr>
<td>Green LED = OK, LED red = arrester faulty, replace</td>
<td>Green LED = OK, LED red = arrester faulty, replace</td>
</tr>
<tr>
<td>Installation housing: 1TE, Insta IP 20</td>
<td>Installation housing: 1TE, Insta IP 20</td>
</tr>
<tr>
<td>-40 °C...+70 °C</td>
<td>-40 °C...+70 °C</td>
</tr>
<tr>
<td>40 °C...+60 °C</td>
<td>40 °C...+60 °C</td>
</tr>
<tr>
<td>0.5...2.5 mm²</td>
<td>0.5...2.5 mm²</td>
</tr>
<tr>
<td>0.5...2.5 mm²</td>
<td>0.5...2.5 mm²</td>
</tr>
<tr>
<td>7 mm</td>
<td>7 mm</td>
</tr>
<tr>
<td>0.4...0.5 Nm</td>
<td>0.4...0.5 Nm</td>
</tr>
</tbody>
</table>

## Dimensions / Signalling contact info

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamping range (nominal / min. / max.)</td>
<td>mm²</td>
</tr>
<tr>
<td>Height x width x depth</td>
<td>mm</td>
</tr>
<tr>
<td>Signalling contact</td>
<td>mm</td>
</tr>
</tbody>
</table>

## Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU III R 230 V / 6 kV</td>
<td>1</td>
<td>1351650000</td>
</tr>
</tbody>
</table>

## Accessories

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note</td>
<td></td>
</tr>
</tbody>
</table>
Type III with varistors / gas discharge tube

- Type III surge protection
- Suitable for protecting terminals
- Installed in the vicinity of the equipment to be protected
- For mounting on TS35 rail
- Arrester with remote signalling contact
- Tested in accordance with IEC 61643-11

Technical data

<table>
<thead>
<tr>
<th>Rated voltage (AC)</th>
<th>Rated voltage (DC)</th>
<th>Max. continuous voltage, Uc (AC)</th>
<th>Max. continuous voltage, Uc (DC)</th>
<th>Requirements category acc. to IEC 61643-11</th>
<th>Combined pulse Uoc</th>
<th>Rated discharge current (8/20 μs)</th>
<th>ISCCR</th>
<th>Discharge current, max. (8/20—20 μs)</th>
<th>Rated load current</th>
<th>PE conductor current, Ip</th>
<th>Sparkover time</th>
<th>Drop-out time</th>
</tr>
</thead>
<tbody>
<tr>
<td>48 V</td>
<td>70 V</td>
<td>50 V</td>
<td>72 V</td>
<td>Type III</td>
<td>2 kV</td>
<td>1.5 kA</td>
<td>2 kA</td>
<td>16 A</td>
<td>0.4...0.5 Nm</td>
<td>0.5...2.5 mm²</td>
<td>&lt; 100 ns</td>
<td>16 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 kA</td>
<td>0 µA</td>
<td>&lt; 100 ms</td>
<td></td>
<td>0.5...2.5 mm²</td>
<td>&lt; 100 ns</td>
<td>16 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9 kA</td>
<td>16 A</td>
<td>18 A</td>
<td></td>
<td>0.5...2.5 mm²</td>
<td>&lt; 100 ns</td>
<td>16 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&lt; 950 V</td>
<td></td>
<td>10 A</td>
<td></td>
<td>0.5...2.5 mm²</td>
<td></td>
<td>16 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>91 V</td>
<td></td>
<td>0.5...2.5 mm²</td>
<td></td>
<td>0.5...2.5 mm²</td>
<td></td>
<td>0.4...0.5 Nm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.5...2.5 mm²</td>
<td></td>
<td>0.4...0.5 Nm</td>
<td></td>
<td>0.4...0.5 Nm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Connection according to IEC 947-7-1
- Solid
- Stranded
- Stripping length
- Tightening torque
- Approval
- Standards

Dimensions / Signalling contact info
- Clamping range (nominal / min. / max.) mm²
- Height x width x depth mm
- Signalling contact

Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU II R 48V/4kV AC/DC</td>
<td>1</td>
<td>135160000</td>
</tr>
</tbody>
</table>

Accessories

Note
Lightning and surge protection for low voltage facilities

Type III with varistors / gas discharge tube

- Type III surge protection
- Suitable for protecting terminals
- Installed in the vicinity of the equipment to be protected
- For mounting on TS35 rail
- Arrester with remote signalling contact
- Tested in accordance with IEC 61643-11

Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage (AC)</td>
<td>12 V</td>
</tr>
<tr>
<td>Rated voltage (DC)</td>
<td>230 V</td>
</tr>
<tr>
<td>Max. continuous voltage, Uc (AC)</td>
<td>230 V</td>
</tr>
<tr>
<td>Max. continuous voltage, Uc (DC)</td>
<td>275 V</td>
</tr>
<tr>
<td>Requirements category acc. to IEC 61643-11</td>
<td>Type III</td>
</tr>
<tr>
<td>Combined pulse Uoc</td>
<td>3 kV</td>
</tr>
<tr>
<td>Rated discharge current (8-20 s)</td>
<td>1.5 kA</td>
</tr>
<tr>
<td>Short-circuit resistance Isc</td>
<td>1.5 kA</td>
</tr>
<tr>
<td>Discharge current, max. (8-20 s)</td>
<td>2 kA</td>
</tr>
<tr>
<td>PE conductor current</td>
<td>≤ 0.98 kV</td>
</tr>
<tr>
<td>Sparkover time / Drop-out time</td>
<td>≤ 1.5 kV</td>
</tr>
<tr>
<td>Fusing</td>
<td>≤ 1.5 kV</td>
</tr>
<tr>
<td>Protection level U0 (typical)</td>
<td>0 μA</td>
</tr>
<tr>
<td>Temporary surge voltage (over-voltage) - TOV</td>
<td>&lt; 100 ns</td>
</tr>
<tr>
<td>Optical function display</td>
<td>&lt; 100 ns</td>
</tr>
<tr>
<td>Design</td>
<td>16 A</td>
</tr>
<tr>
<td>Ambient temperature (operational)</td>
<td>16 A</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>≤ 0.08 kV</td>
</tr>
<tr>
<td>Connection according to IEC 947-7-1</td>
<td>≤ 1.5 kV</td>
</tr>
<tr>
<td>Solid</td>
<td>22 V</td>
</tr>
<tr>
<td>Stranded</td>
<td>440 V</td>
</tr>
<tr>
<td>Stripping length</td>
<td>Green LED</td>
</tr>
<tr>
<td>Tightening torque</td>
<td>Red LED</td>
</tr>
<tr>
<td>Approvals</td>
<td>Installation housing, 1TE, Insta IP 20</td>
</tr>
<tr>
<td>Approvals</td>
<td>Flash mounting</td>
</tr>
<tr>
<td>Standards</td>
<td>-40 °C...+70 °C</td>
</tr>
<tr>
<td>IEC61643-11, EN61643-11</td>
<td>-40 °C...+60 °C</td>
</tr>
</tbody>
</table>

Dimensions / Signalling contact info

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamping range (nominal / min. / max.)</td>
<td>0.5...2.5 mm²</td>
</tr>
<tr>
<td>Height x width x depth</td>
<td>0.5...2.5 mm²</td>
</tr>
<tr>
<td>mm</td>
<td>7 mm</td>
</tr>
<tr>
<td>mm</td>
<td>0.4...0.5 Nm</td>
</tr>
<tr>
<td>Signalling contact</td>
<td>IEC61643-11, EN61643-11</td>
</tr>
</tbody>
</table>

Ordering data

<table>
<thead>
<tr>
<th>Type Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU III R 12 V / 4 kV AC/DC</td>
<td>1</td>
</tr>
<tr>
<td>VPU III SO LD / +A</td>
<td>1</td>
</tr>
</tbody>
</table>

Accessories

<table>
<thead>
<tr>
<th>Type Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU III SO LD</td>
<td>1</td>
</tr>
<tr>
<td>VPU III SO LD+A</td>
<td>1</td>
</tr>
</tbody>
</table>
Type III with varistors

- Type III surge protection
- Suitable for protecting 3-phase terminals
- Installed in the vicinity of the equipment to be protected
- For mounting on rail
- Arrester with remote signalling contact
- Tested in accordance with IEC 61643-11

Technical data

**Rated voltage (AC)**
- 230 V
- 275 V

**Max. continuous voltage, Uc (AC)**
- Type III
  - 6 kV

**Requirements category acc. to IEC 61643-11**
- 6 kV
  - 3 kA

**Combined pulse Uoc**
- 1.5 kA

**Discharge current, nominal, per path, (8/20 μs)**
- 3 kA

**Short-circuit resistance ISCCR**
- 1.5 kA

**Total discharge current Itotal**
- 16 A

**Rated load current IL**
- 0 A

**PE conductor current IPE**
- ≤ 1.8 kA

**Sparkover time**
- ≤ 100 ns

**Drop-out time**
- 16 A

**Protection level UP (typical)**
- ≤ 1.8 kV

**Optical function display**
- Green LED = OK, LED red = arrester faulty, replace

**Design**
- Installation housing, 1TE, INsta IP 20

**Ambient temperature (operational)**
- 40°C...+60°C

**Storage temperature**
- -40°C...+80°C

**Connection according to IEC 947-7-1**
- Solid
- Stranded

**Stripping length**
- 0.5...2.5 mm

**Tightening torque**
- 0.5...2.5 mm

**Approvals**
- IEC61643-11, EN61643-11

**Standards**
- IEC61643-11, EN61643-11

Dimensions / Signalling contact info

**Clamping range (nominal / min. / max.)**
- 2.5 / 0.5 / 2.5

**Height x width x depth**
- 90 / 70 / 57

**Signalling contact**
- 250 V 1 A 1 NC

Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Qty.</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPU III 3 / 280 V</td>
<td>1</td>
<td>1393050000</td>
</tr>
</tbody>
</table>

Accessories

Note