

VAL-SEC-T2-2+F-380DC-FM - Type 2 surge arrester



1033790

<https://www.phoenixcontact.com/us/products/1033790>

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Pluggable surge protective device free of leakage current for 2-pos. isolated and grounded DC voltage systems with linear operating characteristic up to 380 V DC, for DIN rail mounting, 3-pos. base element with remote indication contact, three pluggable temperature-monitored protective elements, status message on each plug.

Your advantages

- Surge protection family for universal use with optimum energy coordination from the lightning current arrester to the device protection
- Easy to maintain due to consistently pluggable protection modules
- Excellent level of information provided by mechanical/visual status indicator and remote indication contact
- More space in the control cabinet due to the narrow overall width of just 12 mm per position
- Free of leakage current so there is no influence on insulation monitoring

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 1033790 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | CL01 |
| Product key | CL1353 |
| GTIN | 4055626540412 |
| Weight per piece (including packing) | 311 g |
| Weight per piece (excluding packing) | 287.43 g |
| Customs tariff number | 85363090 |
| Country of origin | DE |

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Technical data

Product properties

| | |
|--------------------------------|---|
| Product type | Surge arrester |
| Product family | SEC Family |
| IEC test classification | II T2 |
| EN type | T2 |
| IEC power supply system | DC |
| Type | DIN rail module, two-section, divisible |
| Number of positions | 2 |
| Surge protection fault message | Optical, remote indicator contact |
| Number of ports | One |

Insulation characteristics

| | |
|----------------------|-----|
| Overvoltage category | III |
| Pollution degree | 2 |

Electrical properties

| | |
|-----------------------|-----------------------|
| Nominal voltage U_N | 350 V DC ... 400 V DC |
|-----------------------|-----------------------|

Indicator/remote signaling

| | |
|--------------------|---|
| Connection name | Remote fault indicator contact |
| Switching function | Changeover contact |
| Operating voltage | 5 V AC ... 250 V AC (Altitude \leq 2000 m (amsl)) 5 V AC ... 150 V AC (Altitude $>$ 2000 m (amsl)) 125 V DC (200 mA DC) |
| Operating current | 5 mA AC ... 1 A AC 1 A DC (30 V DC) |

Connection data

| | |
|----------------------------------|--|
| Connection method | Screw connection |
| Screw thread | M5 |
| Tightening torque | 4.5 Nm |
| Stripping length | 16 mm |
| Conductor cross-section flexible | 2.5 mm ² ... 16 mm ² |
| Conductor cross-section rigid | 2.5 mm ² ... 25 mm ² |
| Conductor cross-section AWG | 12 ... 4 |
| Connection method | Fork-type cable lug |
| Conductor cross-section flexible | 1.5 mm ² ... 6 mm ² |

Remote fault indicator contact

| | |
|-------------------|---------------------------------------|
| Connection method | Plug-in/screw connection via COMBICON |
| Screw thread | M2 |
| Tightening torque | 0.25 Nm |

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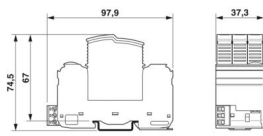


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| | |
|----------------------------------|--|
| Stripping length | 7 mm |
| Conductor cross-section flexible | 0.14 mm ² ... 1.5 mm ² |
| Conductor cross-section rigid | 0.14 mm ² ... 1.5 mm ² |
| Conductor cross-section AWG | 28 ... 16 |

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 37.3 mm |
| Height | 97.9 mm |
| Depth | 74.5 mm (incl. DIN rail 7.5 mm) |
| Horizontal pitch | 2 Div. |

Material specifications

| | |
|--|-----------------------------|
| Color (Male connector) | light gray (RAL 7035) |
| Color (Base element) | gray (RAL 7042) |
| Flammability rating according to UL 94 | V-0 |
| CTI value of material | 600 |
| Insulating material | PA6.6-FR 20% GF PBT-FR |
| Material group | I |
| Housing material | PA 6.6-FR 20 % GF PBT-FR |

Protective circuit

| | |
|---|---|
| Mode of protection | (DC+) - (DC-) (DC+/DC-) - PE |
| Direction of action | (DC+/DC-) - PE |
| Nominal voltage U_N | 350 V DC ... 400 V DC |
| Maximum continuous operating voltage U_C | 450 V DC |
| Rated load current I_L | 40 A (Biconnect M4 fork-type cable lug 6 mm ²) 63 A (TWIN ferrule 2 x 10 mm ²) |
| Protective conductor current I_{PE} | ≤ 5 μA |
| Nominal discharge current I_n (8/20) μs | 20 kA |
| Maximum discharge current I_{max} (8/20) μs | 40 kA |
| Total discharge current I_{Total} (8/20) μs | 40 kA |
| Short-circuit current rating I_{SCCR} | 0.1 kA (without backup fuse) 6 kA (for 20 A gG/B backup fuse) |
| Voltage protection level U_p (DC+) - (DC-) | ≤ 3 kV |
| Voltage protection level U_p (DC+/DC-) - PE | ≤ 1.9 kV |

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| | |
|---|-------------------------------------|
| Front-of-wave sparkover voltage at 6 kV (1.2/50) μ s (DC+/DC-) - PE | ≤ 1.9 kV |
| TOV behavior at U_T | 551 V DC (5 s / withstand mode) |
| Response time t_A (DC+) - (DC-) | 25 ns |
| Response time t_A (DC+/DC-) - PE | 100 ns |
| Max. backup fuse with V-type through wiring | 10 A (gG/B at $I_{SCCR} > 100$ A) |
| | 20 A (gG / B at $I_{SCCR} > 200$ A) |
| Max. backup fuse with branch wiring | 10 A (gG/B at $I_{SCCR} > 100$ A) |
| | 20 A (gG / B at $I_{SCCR} > 200$ A) |

Additional technical data

| | |
|--|------------|
| Maximum continuous operating voltage U_{CPV} | 450 V DC |
| Short-circuit current rating I_{SCPV} | 2000 A |
| Continuous operating current I_{CPV} | 10 μ A |

Environmental and real-life conditions

Ambient conditions

| | |
|---|---|
| Degree of protection | IP20 |
| Ambient temperature (operation) | -40 °C ... 80 °C |
| Ambient temperature (storage/transport) | -40 °C ... 80 °C |
| Altitude | ≤ 5000 m (amsl) |
| Permissible humidity (operation) | 5 % ... 95 % |
| Shock (operation) | 30g (Half-sine / 11 ms / 3x $\pm X$, $\pm Y$, $\pm Z$) |
| Vibration (operation) | 5g (10 ... 500 Hz / 2.5 h / X, Y, Z) |

Standards and regulations

| | |
|--------------------------|--------------|
| Standards/specifications | IEC 61643-11 |
| Note | 2011 |

EN 61643-11

| | |
|--------------------------|-------------|
| Standards/specifications | EN 61643-11 |
| Note | 2012 |

Mounting

| | |
|---------------|-----------------|
| Mounting type | DIN rail: 35 mm |
|---------------|-----------------|

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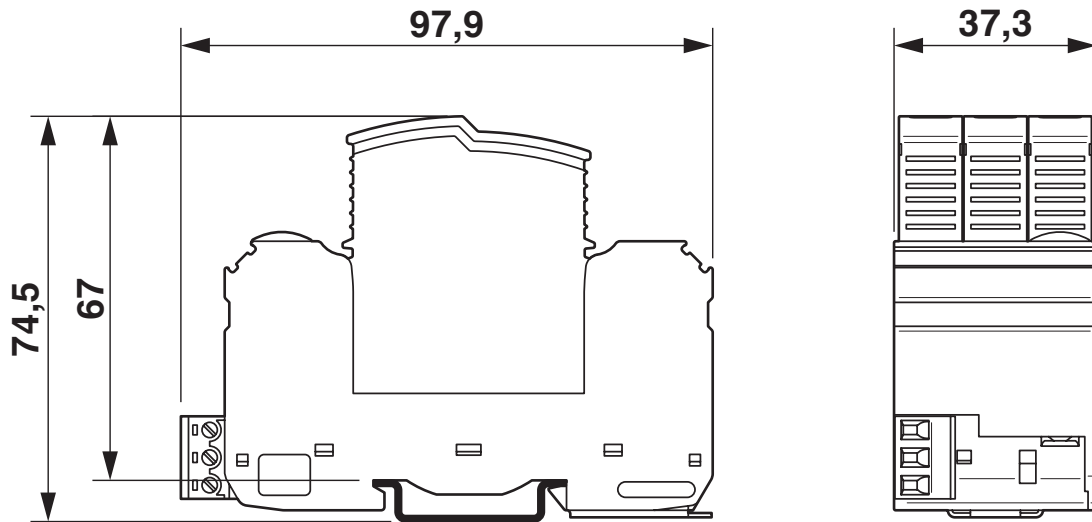


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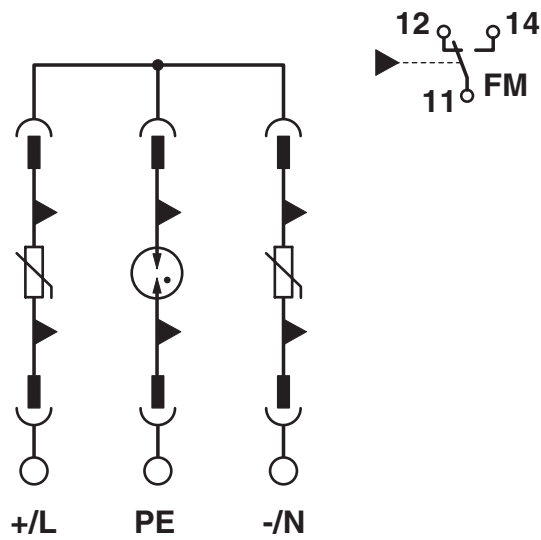
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Drawings

Dimensional drawing



Circuit diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1033790>

UAE-RoHS

Approval ID: 23-10-88707

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27171302 |
| ECLASS-15.0 | 27171302 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC000941 |
|-----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 39121600 |
|-------------|----------|

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Environmental product compliance

EU RoHS

| | |
|---|--------------------|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |
|---|--------------------|

China RoHS

| | |
|--|--|
| Environment friendly use period (EFUP) | EFUP-E |
| | No hazardous substances above the limits |

EU REACH SVHC

| | |
|-------------------------------------|----------------------------|
| REACH candidate substance (CAS No.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

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