

# 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             |
| Catalog page                         | Page 59 (C-4-2019) |
| 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

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

### 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 <sup>2</sup> ... 16 mm <sup>2</sup> |
| Conductor cross section rigid    | 2.5 mm <sup>2</sup> ... 25 mm <sup>2</sup> |
| Conductor cross section AWG      | 12 ... 4                                   |
| Connection method                | Fork-type cable lug                        |
| Conductor cross section flexible | 1.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>  |

### Remote fault indicator contact

|                   |                                       |
|-------------------|---------------------------------------|
| Connection method | Plug-in/screw connection via COMBICON |
| Screw thread      | M2                                    |
| Tightening torque | 0.25 Nm                               |
| Stripping length  | 7 mm                                  |

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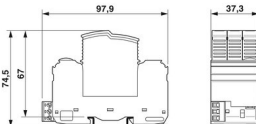


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|                                  |  |
|----------------------------------|--|
| Conductor cross section flexible | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section rigid    | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| 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

|  |                             |
|--|-----------------------------|
| Flammability rating according to UL 94 | V-0                         |
| CTI value of material                  | 600                         |
| Insulating material                    | PA6.6-FR 20% GF<br>PBT-FR   |
| Material group                         | I                           |
| Housing material                       | PA 6.6-FR 20 % GF<br>PBT-FR |

## Protective circuit

|  |   |
|--|---|
| Mode of protection   | (DC+) - (DC-)<br>(DC+/DC-) - PE   |
| Direction of action  | (DC+/DC-) - PE  |
| Nominal voltage $U_N$  | 350 V DC ... 400 V DC   |
| Maximum continuous voltage $U_C$                                   | 450 V DC  |
| Rated load current $I_L$   | 40 A (Biconnect M4 fork-type cable lug 6 mm <sup>2</sup> )<br>63 A (TWIN ferrule 2 x 10 mm <sup>2</sup> ) |
| Residual 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)<br>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  |
| Front of wave sparkover voltage at 6 kV (1.2/50) μs (DC+/DC-) - PE | ≤ 1.9 kV  |
| TOV behavior at $U_T$  | 551 V DC (5 s / withstand mode)   |
| Max. backup fuse with V-type through wiring                        | 10 A (gG/B at $I_{SCCR} > 100$ A)   |

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|                                     |  |
|-------------------------------------|--|
|                                     | 20 A (gG / B at $I_{SCCR} > 200 \text{ A}$ ) |
| Max. backup fuse with branch wiring | 10 A (gG/B at $I_{SCCR} > 100 \text{ A}$ )   |
|                                     | 20 A (gG / B at $I_{SCCR} > 200 \text{ A}$ ) |

## Additional technical data

|  |                  |
|--|------------------|
| Continuous operating current $I_{CPV}$ | 10 $\mu\text{A}$ |
|--|------------------|

## 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                                | $\leq 5000 \text{ m (amsl)}$                        |
| 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 |
|---------------|-----------------|

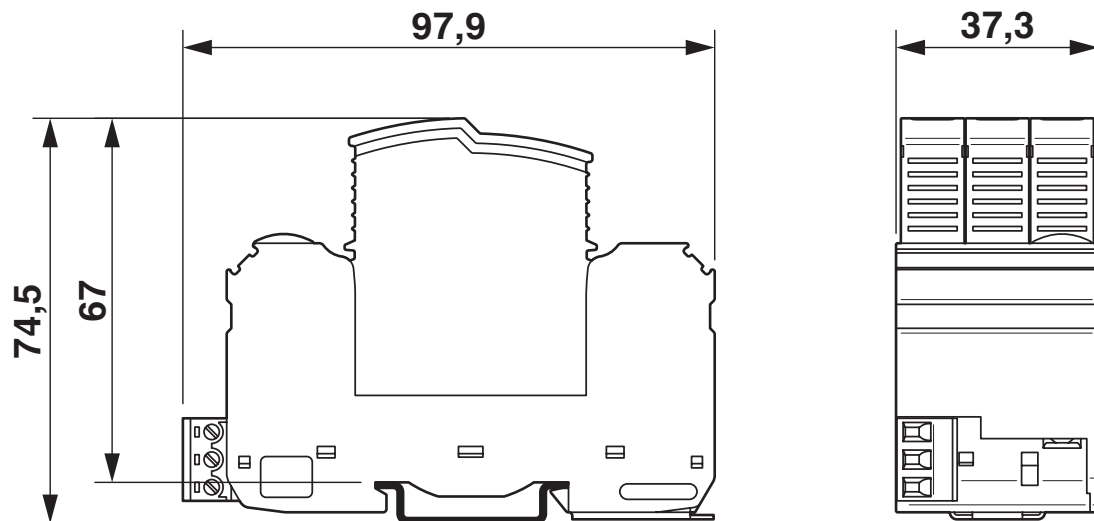
# VAL-SEC-T2-2+F-380DC-FM - Type 2 surge arrester

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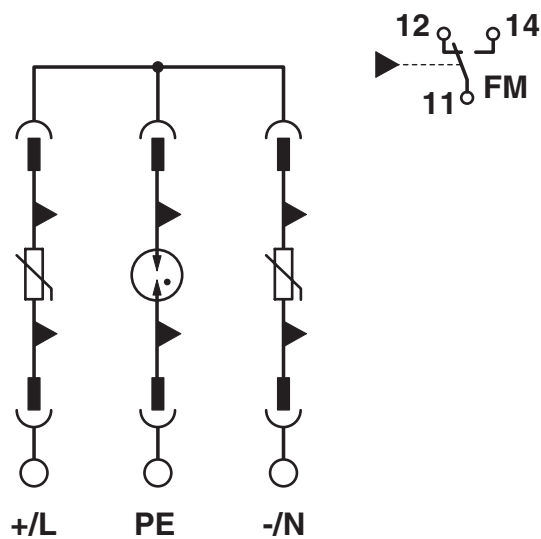
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## Drawings

Dimensional drawing



Circuit diagram



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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27130805 |
| ECLASS-13.0 | 27171302 |

### ETIM

|          |          |
|----------|----------|
| ETIM 8.0 | EC000941 |
|----------|----------|

### UNSPSC

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

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## Environmental product compliance

|            |   |
|------------|---|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

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## Accessories

### CLIPFIX 35 - End clamp

3022218

<https://www.phoenixcontact.com/us/products/3022218>



Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, width: 9.5 mm, color: gray

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### EML (20XE)R - Label

0803452

<https://www.phoenixcontact.com/us/products/0803452>



Label, Roll, white, unlabeled, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMaster 300/600, THERMOMARK X1.2, mounting type: adhesive, lettering field size: continuous x 20 mm



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

## EML (20XE)R YE - Label

0803453

<https://www.phoenixcontact.com/us/products/0803453>



Label, Roll, yellow, unlabeled, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMaster 300/600, THERMOMARK X1.2, mounting type: adhesive, lettering field size: continuous x 20 mm

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## ZBN 18:UNBEDRUCKT - Zack marker strip

2809128

<https://www.phoenixcontact.com/us/products/2809128>



Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

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## ZBN 18,LGS:L1-N,ERDE - Marker for terminal blocks

2749576

<https://www.phoenixcontact.com/us/products/2749576>



Marker for terminal blocks, Strip, white, labeled, horizontal: L1, L2, L3, N, GND, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

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## ZBN 18,LGS:ERDE - Marker for terminal blocks

2749589

<https://www.phoenixcontact.com/us/products/2749589>



Marker for terminal blocks, Strip, white, labeled, horizontal: Grounding symbol, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

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## ZBFM 5/WH:UNBEDRUCKT - Flat zack marker sheet

0803595

<https://www.phoenixcontact.com/us/products/0803595>

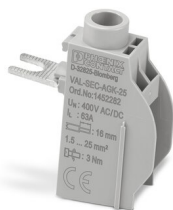
Flat zack marker sheet, Sheet, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snapped, for terminal block width: 5.2 mm, lettering field size: 5 x 4.5 mm, Number of individual labels: 120



## VAL-SEC-AGK-25 - Pick-off terminal

1452282

<https://www.phoenixcontact.com/us/products/1452282>



Pick-off terminal, can only be used in combination with VAL-SEC-T2 series, nominal voltage: 400 V, nominal current: 63 A, connection method: screw connection, rated cross-section: 25 mm<sup>2</sup>, cross-section: 1.5 mm<sup>2</sup> – 25 mm<sup>2</sup>, color: gray

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## X-PEN 0,35 - Marker pen

0811228

<https://www.phoenixcontact.com/us/products/0811228>



Marker pen without ink cartridge, for manual labeling of markers, labeling extremely wipe-proof, line thickness 0.35 mm

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## SZK PZ2 VDE - Screwdriver

1206463

<https://www.phoenixcontact.com/us/products/1206463>



Screwdriver, PZ crosshead, VDE insulated, size: PZ 2 x 100 mm, 2-component grip, with non-slip grip

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## VAL-SEC-T2-380DC-P - Type 2 surge protection plug

2907880

<https://www.phoenixcontact.com/us/products/2907880>



Replacement plug for surge protective devices from the VALVETRAB SEC product range for DC power sources.

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## VAL-SEC-T2-GDT-800DC-P - Type 2 surge protection plug

1052649

<https://www.phoenixcontact.com/us/products/1052649>



Replacement plug for surge protective devices from the VALVETRAB SEC product range for DC power sources. Protection of the path to the ground for 220 und 380 V DC.

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