

# VAL-SEC-T2-2+0-48DC-FM - Type 2 surge arrester



2907865

<https://www.phoenixcontact.com/us/products/2907865>

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Pluggable surge protective device, in accordance with Type 2/Class II, for DC power sources with linear operating characteristics, with remote indication contact.

## 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

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2907865       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CL01          |
| Product key                          | CL1353        |
| GTIN                                 | 4055626244587 |
| Weight per piece (including packing) | 209.6 g       |
| Weight per piece (excluding packing) | 206.6 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<br>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 frequency $f_N$ | 50 Hz (60 Hz)       |
| Nominal voltage $U_N$   | 48 V DC ... 60 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))<br>5 V AC ... 150 V AC (Altitude $>$ 2000 m (amsl))<br>125 V DC (200 mA DC) |
| Operating current  | 5 mA AC ... 1 A AC<br>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                                    |

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|                                  |  |
|----------------------------------|--|
| Tightening torque                | 0.25 Nm                                      |
| Stripping length                 | 7 mm   |
| 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               | 25.4 mm                         |
| Height              | 97.9 mm                         |
| Depth               | 74.5 mm (incl. DIN rail 7.5 mm) |
| Horizontal pitch    | 1.4 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<br>PBT-FR   |
| Material group                         | I                           |
| Housing material                       | PA 6.6-FR 20 % GF<br>PBT-FR |

## Protective circuit

|   |  |
|---|--|
| Mode of protection                            | (DC+) - (DC-)  |
|   | (DC+) - PE   |
|   | (DC-) - PE   |
| Direction of action                           | (DC+/DC-) - PE   |
| Nominal voltage $U_N$                         | 60 V AC (TN)   |
|   | 48 V DC ... 60 V DC  |
| Nominal frequency $f_N$                       | 50 Hz (60 Hz)  |
| Maximum continuous operating voltage $U_C$    | 75 V DC  |
|   | 75 V AC  |
| Rated load current $I_L$                      | 40 A (Biconnect M4 fork-type cable lug 6 mm <sup>2</sup> ) |
|   | 63 A (TWIN ferrule 2 x 10 mm <sup>2</sup> )                |
| Protective conductor current $I_{PE}$         | ≤ 50 μA DC   |
|   | ≤ 450 μA AC  |
| Nominal discharge current $I_n$ (8/20) μs     | 20 kA  |
| Maximum discharge current $I_{max}$ (8/20) μs | 40 kA  |

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|  |  |
|--|--|
| Impulse discharge current (10/350) $\mu$ s, charge               | 2 As   |
| Impulse discharge current (10/350) $\mu$ s, specific energy      | 4 kJ/ $\Omega$                                 |
| Impulse discharge current (10/350) $\mu$ s, peak value $I_{imp}$ | 4 kA   |
| Total discharge current $I_{Total}$ (8/20) $\mu$ s               | 40 kA  |
| Short-circuit current rating $I_{SCCR}$                          | 0.2 kA DC (without backup fuse)                |
|  | 6 kA DC (for 20 A gG/B backup fuse)            |
|  | 10 kA AC (C63 A miniature circuit breaker)     |
|  | 25 kA AC (for a backup fuse of up to 315 A gG) |
|  | 50 kA AC (for a backup fuse of up to 200 A gG) |
| Voltage protection level $U_p$ (DC+) - (DC-)                     | $\leq 0.9$ kV                                  |
| Voltage protection level $U_p$ (DC+/DC-) - PE                    | $\leq 0.5$ kV                                  |
| Response time $t_A$  | $\leq 25$ ns                                   |
| Max. backup fuse with V-type through wiring                      | 20 A DC (gG / B at $I_{SCCR} > 200$ A)         |
| Max. backup fuse with branch wiring                              | 20 A DC (gG / B at $I_{SCCR} > 200$ A)         |
|  | 315 A AC (gG)                                  |

## 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                                | $\leq 6000$ 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)                      |

## Approvals

### UL specifications

|   |               |
|---|---------------|
| Short-circuit current rating (SCCR)         | 50 kA         |
| Voltage protection rating VPR (DC+) - (DC-) | 800 V         |
| Voltage protection rating VPR (DC+) - G     | 400 V         |
| Voltage protection rating VPR (DC-) - G     | 400 V         |
| Nominal discharge current $I_n$             | 20 kA         |
| Mode of protection                          | (DC+) - (DC-) |
|   | (DC+) - G     |
|   | (DC-) - G     |
| Nominal voltage                             | 60 V DC       |
| Power distribution system                   | DC            |
| SPD Type                                    | 1             |

### UL indicator/remote signaling

|                      |          |
|----------------------|----------|
| Operating voltage    | 125 V AC |
| AC operating current | 1 A AC   |

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## UL connection data

|                             |                         |
|-----------------------------|-------------------------|
| Tightening torque           | 30 lb <sub>F</sub> -in. |
| Conductor cross-section AWG | 10 ... 2                |

## 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 mounting |
|---------------|-------------------|

# VAL-SEC-T2-2+0-48DC-FM - Type 2 surge arrester

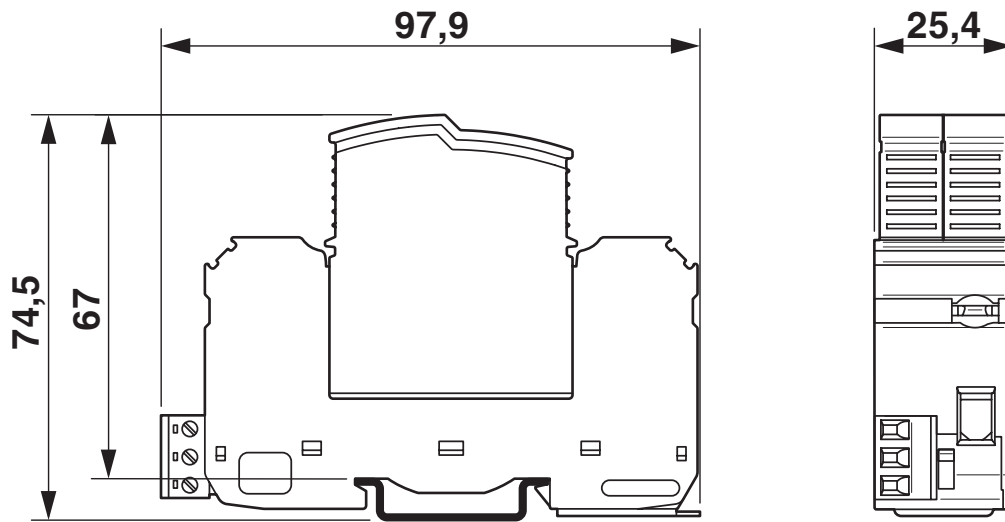
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## Drawings

Dimensional drawing



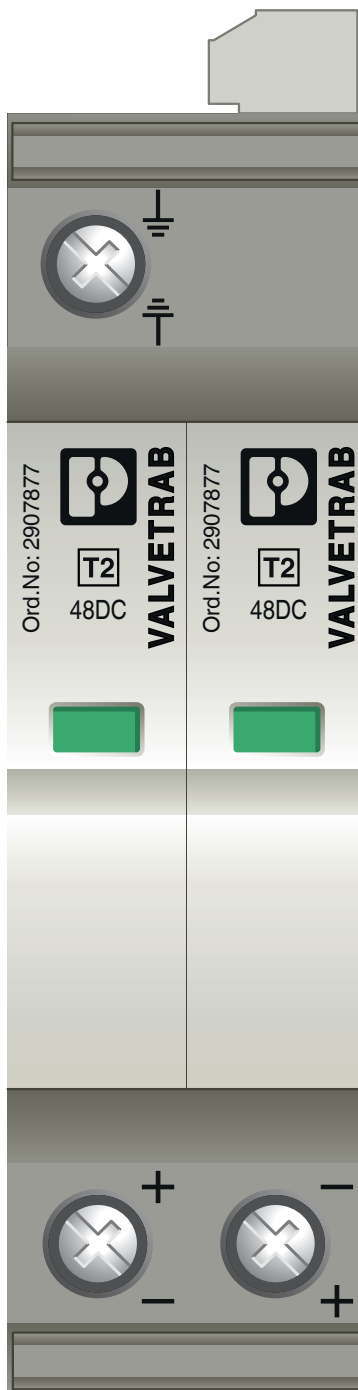
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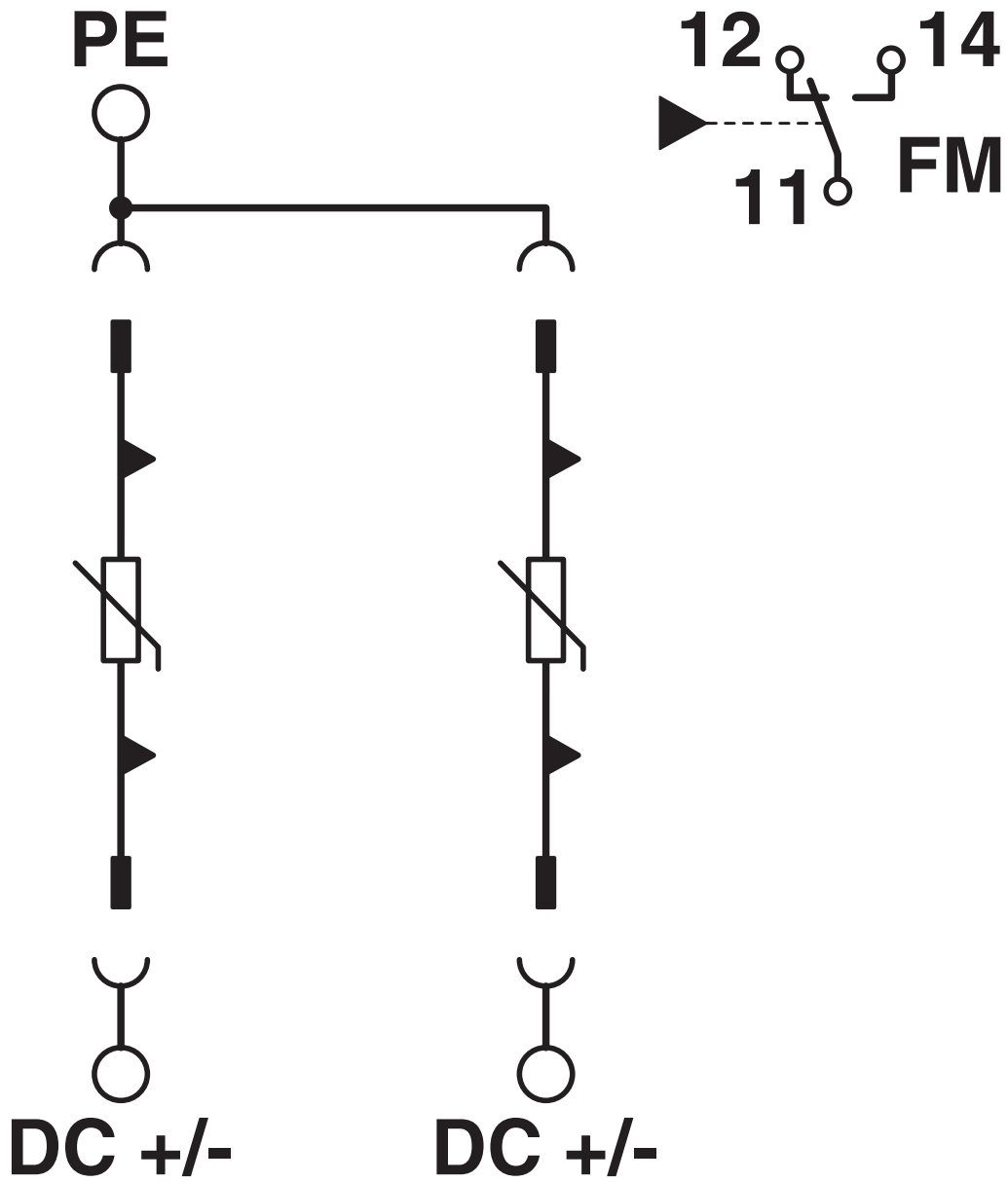
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Product drawing



Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2907865>



**cUL Recognized**  
Approval ID: FILE E 330181



**UL Recognized**  
Approval ID: FILE E 330181



**DNV GL**  
Approval ID: TAE000023D

**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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