# VAL-SPP-T1-1500DC-PV-2+V-UT-R - Surge arrester

1784481

https://www.phoenixcontact.com/gb/products/1784481

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Surge arrester for 2-pos. insulated and grounded 1500 V DC PV systems, for DIN rail mounting, 3-pos. base element with remote indication contact, three pluggable protective elements, two of them temperature monitored, status message on + and - plugs.

## Your advantages

- Easy and safe installation with forward-thinking handling and safety features
- Reliable system protection with maximum performance and endurance
- Can be used in a wide range of applications due to the optimized design and broad portfolio
- Simple planning due to comprehensive digital data and selectors

ELEKTROGERÄTE RÜCKNAHME

## Commercial data

| | |
|---|---|
| Item number | 1784481 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | CL11E1 |
| Product key | CL11E1 |
| GTIN | 4067923401587 |
| Weight per piece (including packing) | 551.85 g |
| Weight per piece (excluding packing) | 496.34 g |
| Customs tariff number | 85354000 |
| Country of origin | DE |

# Technical data

## Product properties

| | |
|---|---|
| Product type | PV arrester |
| IEC test classification | PV I / II |
| EN type | PV T1 / T2 |
| IEC power supply system | DC |
| Type | DIN rail module, two-section, divisible |
| Environment | Indoor |
| Installation location of the disconnect device | Internal |
| Accessibility | Accessible |
| End-of-life mode | OCFM (Open-Circuit Failure Mode) |
| Surge protection fault message | Optical, remote indicator contact |
| Number of ports | One |

### Insulation characteristics

| | |
|---|---|
| Overvoltage category | III |
| | II |
| Pollution degree (Main circuit) | 2 |
| Pollution degree (Auxiliary circuit) | 2 |

## Electrical properties

| | |
|---|---|
| Maximum power dissipation for nominal condition | ≤ 150 mVA |

### Indicator/remote signaling

| | |
|---|---|
| Connection name | remote fault indicator contact (11, 12, 14) |
| Switching contact | Changeover contact |
| AC operating voltage | 5 V AC ... 250 V AC |
| AC operating current | 5 mA AC ... 1 A AC |
| DC operating voltage | 5 V DC ... 30 V DC |
| DC operating current | 5 mA DC ... 1 A DC |
| DC operating voltage | 5 V DC ... 125 V DC |
| DC operating current | 5 mA DC ... 200 mA DC |
| Max. required back-up fuse | 1 A (gG) |
| Insulation type (between the main and auxiliary circuit) | Double/reinforced insulation |

## Connection data

### protection circuit (DC+, DC-, PE)

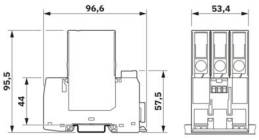
| | |
|---|---|
| Connection method | Screw connection |
| Screw thread | M5 |
| Stripping length | 12 mm |
| Conductor cross-section rigid | 1.5 mm² ... 25 mm² |
| Conductor cross-section flexible | 1.5 mm² ... 16 mm² |
| Conductor cross-section AWG | 15 ... 4 |

| | |
|---|---|
| Conductor cross-section, flexible, with ferrule, without plastic sleeve | 1.5 mm² ... 16 mm² |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve | 1.5 mm² ... 16 mm² |
| 2 conductors with same cross section, rigid | 1.5 mm² ... 6 mm² |
| 2 conductors with same cross section, flexible | 1.5 mm² ... 6 mm² |
| 2 conductors with same cross section, flexible, with ferrule without plastic sleeve | 1.5 mm² ... 6 mm² |
| 2 conductors with the same cross section, flexible, with ferrule with plastic sleeve | 1.5 mm² ... 6 mm² |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 1.5 mm² ... 6 mm² |
| Drive size | PZSL 2 |
| | PZ/S 2 |
| Tightening torque | 2.5 Nm ... 3 Nm |

remote fault indicator contact (11, 12, 14)

| | |
|---|---|
| Connection method | Screw connection |
| Screw thread | M3 |
| Stripping length | 7 mm |
| Conductor cross-section rigid | 0.25 mm² ... 1.5 mm² |
| Conductor cross-section flexible | 0.25 mm² ... 1.5 mm² |
| Conductor cross-section AWG | 24 ... 16 |
| Conductor cross-section, flexible, with ferrule, without plastic sleeve | 0.25 mm² ... 1.5 mm² |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve | 0.25 mm² ... 1.5 mm² |

## Dimensions

| | |
|---|---|
| Dimensional drawing |  |
| Width | 53.4 mm |
| Height | 96.6 mm |
| Depth | 95.5 mm (incl. DIN rail 7.5 mm) |
| Horizontal pitch | 3 HP |

## Material specifications

| | |
|---|---|
| Color | gray (RAL 7042) |
| | light gray (RAL 7035) |
| Material Housing | PA 6.6-FR 20 % GF |
| | PBT |
| Flammability rating according to UL 94 | V-0 |
| Insulating material | PA 6.6-FR 20 % GF |
| | PBT |

## Mechanical properties

Mechanical data

| | |
|---|---|
| Open side panel | No |

## Protective circuit

| | |
|---|---|
| Mode of protection | (DC+) - (DC-) |
| | (DC+) - PE |
| | (DC-) - PE |
| Max. continuous voltage $U_{CPV}$ | 1500 V DC |
| Open-circuit voltage $U_{OCSTC}$ | 1250 V DC |
| Protective conductor current $I_{PE}$ | ≤ 700 µA AC |
| | ≤ 100 µA DC |
| Continuous current $I_{CPV}$ | ≤ 100 µA DC |
| Maximum power dissipation for nominal condition | ≤ 150 mVA |
| Nominal discharge current $I_n$ (8/20) µs | 20 kA |
| Max. discharge current $I_{max}$ (8/20)µs | 40 kA |
| Impulse discharge current $I_{imp}$ (10/350) µs | 6.25 kA (3.1 As / 9.8 kJ/Ω) |
| Total discharge current $I_{Total}$ (8/20) µs | 60 kA |
| Total discharge current $I_{Total}$ (10/350) µs | 12.5 kA |
| Short-circuit current rating $I_{SCPV}$ | 15000 A |
| Voltage protection level $U_p$ | ≤ 4.5 kV |
| Residual voltage $U_{res}$ | ≤ 4.5 kV (at $I_n$) |
| | ≤ 3.9 kV (at 10 kA) |
| | ≤ 3.6 kV (at 5 kA) |
| | ≤ 3.3 kV (at 3 kA) |
| Response time $t_A$ | ≤ 25 ns |

## Environmental and real-life conditions

Ambient conditions

| | |
|---|---|
| Degree of protection | IP20C (under touch protection cover) |
| Ambient temperature (operation) | -40 °C ... 85 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Ambient temperature (assembly) | -5 °C ... 50 °C |
| Altitude | ≤ 2000 m (amsl) |
| | For higher altitudes, see Table 2 |
| Permissible humidity (operation) | 5 % ... 95 % |
| Shock (operation) | 25g (Half-sine / 11 ms / 3x ±X, ±Y, ±Z) |
| Vibration (operation) | 5g (5-500 Hz/2.5 h/XYZ) |

## Standards and regulations

| | |
|---|---|
| Standards/specifications | IEC 61643-31 |
| Note | 2018 |

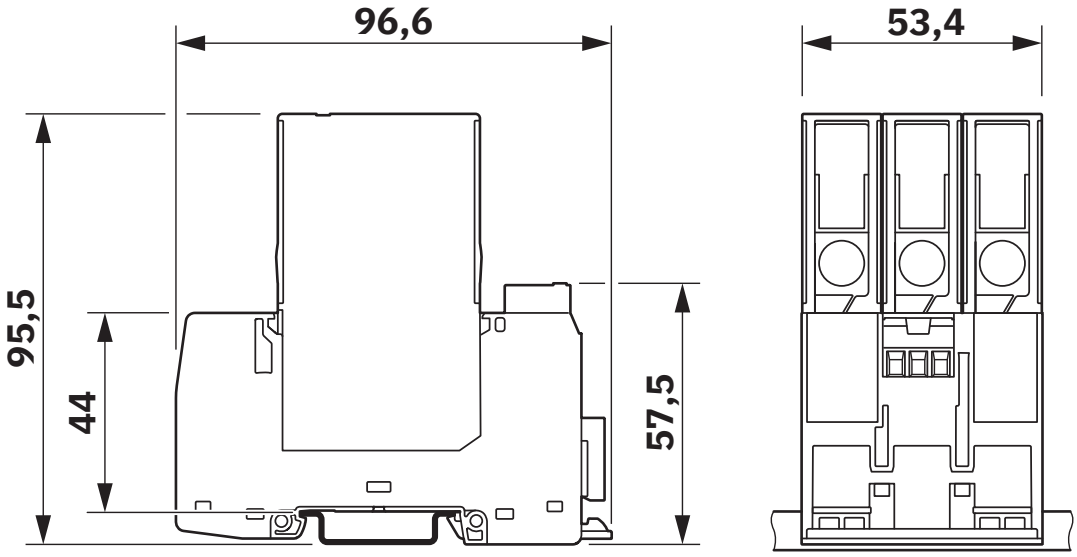
| | |
|---|---|
| Standards/specifications | EN 61643-31 |
| Note | 2019 + AC: 2022 |

## Mounting

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

## Drawings

Dimensional drawing

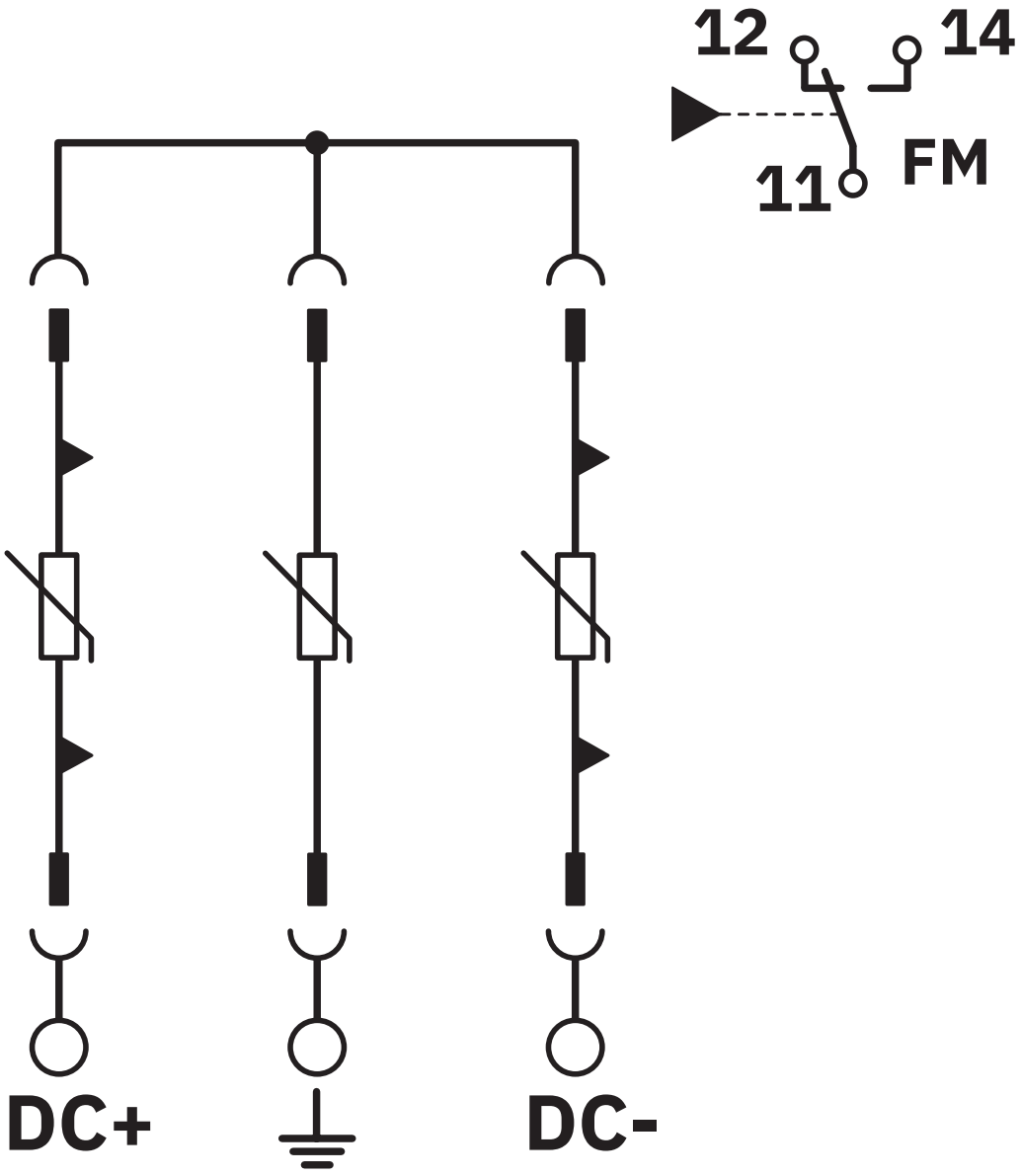



Schematic diagram

| Altitude | >2000 m … ≤4000 m |
|---|---|
| Rated voltage | 5 V … 150 V AC<br>5 V … 30 V DC (5 mA … 1 A DC)<br>30 V DC … 125 V DC (5 mA … 200 mA DC) |
| Insulation type between main and auxiliary circuit | Double / Reinforced insulation |

Table 2: Technical data for remote fault indicator contact

Circuit diagram



## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/gb/products/1784481

**DEKRA**
Approval ID: 31-172928

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-13.0 | 27171401 |
| ECLASS-15.0 | 27171401 |

### ETIM

| | |
|---|---|
| ETIM 10.0 | EC000381 |

## 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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PHOENIX CONTACT Ltd
Halesfield 13, Telford
Shropshire, TF7 4PG
01952 681700
info@phoenixcontact.co.uk