

# VAL-SPP-T2-275-1+1-UT-R - Type 2 surge arrester



1466212

<https://www.phoenixcontact.com/pc/products/1466212>

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Plug-in surge arrester, in accordance with Type 2/Class II, for 1-phase power supply networks with separate N and PE (3-conductor system: L1, N, PE), with remote indication contact.

## 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

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1466212       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Product key                          | CL1381        |
| GTIN                                 | 4063151857684 |
| Weight per piece (including packing) | 261.4 g       |
| Weight per piece (excluding packing) | 236.7 g       |
| Customs tariff number                | 85363030      |
| Country of origin                    | DE            |

# VAL-SPP-T2-275-1+1-UT-R - Type 2 surge arrester



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## Technical data

### Notes

#### General

|      |                                                                                                                                                                                                                                                                              |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note | For pollution degree 3 and wiring with fork cable lugs, an additional minimum lateral distance of 1 mm to earthed conductive surfaces must be maintained for cross-sections $\geq 16 \text{ mm}^2$ .<br>No additional lateral distances are required for pollution degree 2. |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Product properties

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

#### Insulation characteristics

|                      |     |
|----------------------|-----|
| Overvoltage category | III |
| Pollution degree     | 3   |

### Electrical properties

|                         |               |
|-------------------------|---------------|
| Nominal frequency $f_N$ | 50 Hz (60 Hz) |
|-------------------------|---------------|

#### Indicator/remote signaling

|                            |                                                                                                                                  |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Connection name            | Remote fault indicator contact                                                                                                   |
| Switching function         | Changeover contact                                                                                                               |
| Max. required back-up fuse | 1 A (gG)                                                                                                                         |
| AC operating voltage       | 5 V AC ... 250 V AC ( $\leq 2000 \text{ m (amsl)}$ at pollution degree 2)<br>5 V AC ... 150 V AC ( $\leq \text{ⓈⓂⓂⓂ m (amsl)}$ ) |
| AC operating current       | 5 mA AC ... 1 A AC                                                                                                               |
| DC operating voltage       | 30 V DC ( $\leq \text{ⓈⓂⓂⓂ m (amsl)}$ )                                                                                          |
| DC operating current       | 1 A DC                                                                                                                           |
| DC operating voltage       | 125 V DC ( $\leq \text{ⓈⓂⓂⓂ m (amsl)}$ )                                                                                         |
| DC operating current       | 200 mA DC                                                                                                                        |
| Insulation type            | The product has double/reinforced insulation between the main and auxiliary circuit.                                             |

### Connection data

|                   |                  |
|-------------------|------------------|
| Connection method | Screw connection |
|-------------------|------------------|

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|                                                                                           |                                                                                                          |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Screw thread                                                                              | M5                                                                                                       |
| Tightening torque                                                                         | 3 Nm ... 3.5 Nm                                                                                          |
| Stripping length                                                                          | 18 mm                                                                                                    |
| Conductor cross section flexible                                                          | 1.5 mm² ... 35 mm² (without ferrule)<br>2x 1.5 mm² ... 16 mm² (2 conductors with the same cross-section) |
| Conductor cross section rigid                                                             | 1.5 mm² ... 50 mm²<br>2x 1.5 mm² ... 16 mm² (2 conductors with the same cross-section)                   |
| Conductor cross section AWG                                                               | 15 ... 2                                                                                                 |
| 2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve | 1.5 mm² ... 16 mm²                                                                                       |
| Conductor cross section, flexible, with ferrule, with plastic sleeve                      | 1.5 mm² ... 35 mm²<br>2x 1.5 mm² ... 10 mm² (2 conductors with the same cross-section)                   |
| Conductor cross section flexible, with ferrule without plastic sleeve                     | 1.5 mm² ... 25 mm²<br>2x 1.5 mm² ... 16 mm² (2 conductors with the same cross-section)                   |
| Connection method                                                                         | Fork-type cable lug                                                                                      |
| Conductor cross section flexible                                                          | 1.5 mm² ... 25 mm²                                                                                       |

## Remote fault indicator contact

|                                                                       |                       |
|-----------------------------------------------------------------------|-----------------------|
| Connection method                                                     | Push-in connection    |
| Stripping length                                                      | 8 mm                  |
| Conductor cross section flexible                                      | 0.25 mm² ... 1.5 mm²  |
| Conductor cross section rigid                                         | 0.25 mm² ... 1.5 mm²  |
| Conductor cross section AWG                                           | 24 ... 16             |
| Conductor cross section, flexible, with ferrule, with plastic sleeve  | 0.25 mm² ... 1.5 mm²  |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm² ... 0.75 mm² |

## Dimensions

|                     |                                 |
|---------------------|---------------------------------|
| Dimensional drawing |                                 |
| Width               | 35.6 mm                         |
| Height              | 109.1 mm                        |
| Depth               | 71.5 mm (incl. DIN rail 7.5 mm) |
| Horizontal pitch    | 2 Div.                          |

## Material specifications

|                                        |                                          |
|----------------------------------------|------------------------------------------|
| Color                                  | gray (RAL 7042)<br>light gray (RAL 7035) |
| Flammability rating according to UL 94 | V-0                                      |

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|                       |                   |
|-----------------------|-------------------|
| CTI value of material | 600               |
| Insulating material   | PA 6.6-FR 20 % GF |
|                       | PBT               |
| Material group        | I                 |
| Housing material      | PA 6.6-FR 20 % GF |
|                       | PBT               |

## Protective circuit

|                                                    |                                        |
|----------------------------------------------------|----------------------------------------|
| Mode of protection                                 | L-N                                    |
|                                                    | L-PE                                   |
|                                                    | N-PE                                   |
| Nominal voltage $U_N$                              | 240/415 V AC $\pm 10$ % (TN-S)         |
|                                                    | 240/415 V AC $\pm 10$ % (TT)           |
| Nominal frequency $f_N$                            | 50 Hz (60 Hz)                          |
| Maximum continuous operating voltage $U_C$ (L-N)   | 275 V AC                               |
| Maximum continuous operating voltage $U_C$ (L-PE)  | 275 V AC                               |
| Maximum continuous operating voltage $U_C$ (N-PE)  | 305 V AC                               |
| Rated load current $I_L$                           | 80 A (25 mm <sup>2</sup> )             |
| Protective conductor current $I_{PE}$              | $\leq 5 \mu A$                         |
| Standby power consumption $P_C$                    | $\leq 120$ mVA                         |
| Nominal discharge current $I_n$ (8/20) $\mu s$     | 20 kA                                  |
| Maximum discharge current $I_{max}$ (8/20) $\mu s$ | 40 kA                                  |
| Total discharge current $I_{Total}$ (8/20) $\mu s$ | 40 kA                                  |
| Follow current interrupt rating $I_{fi}$ (N-PE)    | 100 A                                  |
| Short-circuit current rating $I_{SCCR}$            | 50 kA                                  |
| Voltage protection level $U_p$ (L-N)               | $\leq 1.35$ kV                         |
| Voltage protection level $U_p$ (L-PE)              | $\leq 1.6$ kV                          |
| Voltage protection level $U_p$ (N-PE)              | $\leq 1.5$ kV                          |
| Residual voltage $U_{res}$ (L-N)                   | $\leq 1.35$ kV (at $I_n$ )             |
|                                                    | $\leq 1.1$ kV (at 10 kA)               |
|                                                    | $\leq 1$ kV (at 5 kA)                  |
|                                                    | $\leq 0.9$ kV (at 3 kA)                |
| Residual voltage $U_{res}$ (L-PE)                  | $\leq 1.6$ kV (at $I_n$ )              |
|                                                    | $\leq 1.3$ kV (at 10 kA)               |
|                                                    | $\leq 1.1$ kV (at 5 kA)                |
|                                                    | $\leq 1$ kV (at 3 kA)                  |
| Residual voltage $U_{res}$ (N-PE)                  | $\leq 0.5$ kV (at $I_n$ )              |
|                                                    | $\leq 0.4$ kV (at 10 kA)               |
|                                                    | $\leq 0.3$ kV (at 5 kA)                |
|                                                    | $\leq 0.1$ kV (at 3 kA)                |
| TOV behavior at $U_T$ (L-N)                        | 350 V AC (5 s / withstand mode)        |
|                                                    | 460 V AC (120 min / safe failure mode) |
| TOV behavior at $U_T$ (L-PE)                       | 1464 V AC (200 ms/withstand mode)      |
| TOV behavior at $U_T$ (N-PE)                       | 1200 V AC (200 ms / withstand mode)    |

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|                                             |               |
|---------------------------------------------|---------------|
| Response time $t_A$ (L-N)                   | $\leq 25$ ns  |
| Response time $t_A$ (L-PE)                  | $\leq 100$ ns |
| Response time $t_A$ (N-PE)                  | $\leq 100$ ns |
| Max. backup fuse with V-type through wiring | 80 A (gG)     |
| Max. backup fuse with branch wiring         | 315 A (gG)    |

## Additional technical data

|                                         |        |
|-----------------------------------------|--------|
| Short-circuit current rating $I_{SCCR}$ | 100 kA |
|-----------------------------------------|--------|

## Environmental and real-life conditions

### Ambient conditions

|                                         |                                                           |
|-----------------------------------------|-----------------------------------------------------------|
| Degree of protection                    | IP20C (Installed)                                         |
| Ambient temperature (operation)         | -40 °C ... 85 °C                                          |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C                                          |
| Ambient temperature (assembly)          | -5 °C ... 50 °C                                           |
| Altitude                                | $\leq 5000$ m (amsl)                                      |
| Permissible humidity (operation)        | 5 % ... 95 %                                              |
| Shock (operation)                       | 25g (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            |
| Standards/specifications | EN 61643-11     |
| Note                     | 2012 + A11:2018 |

## Mounting

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

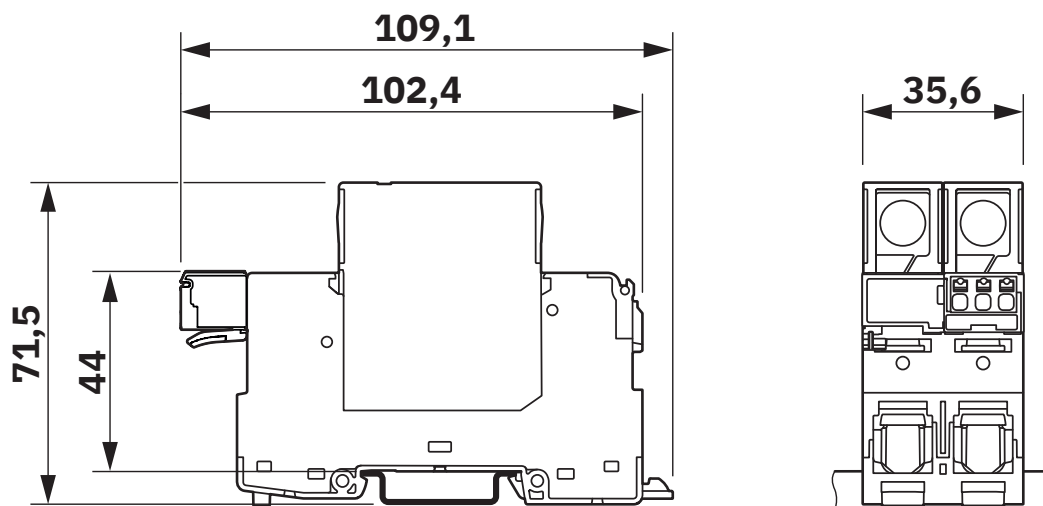
# VAL-SPP-T2-275-1+1-UT-R - Type 2 surge arrester

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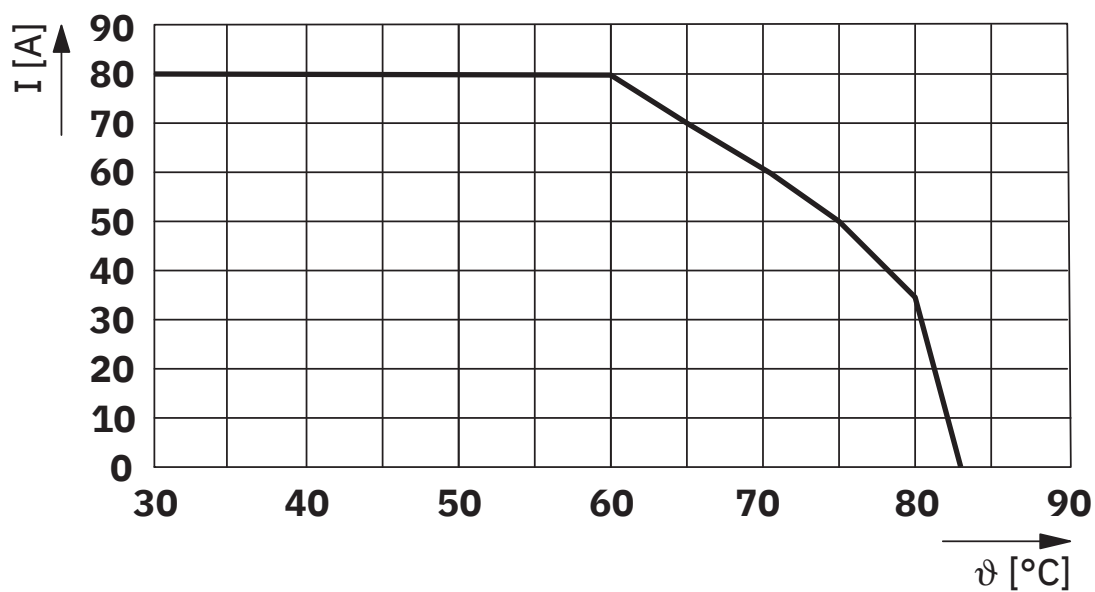
<https://www.phoenixcontact.com/pc/products/1466212>

## Drawings

Dimensional drawing



Diagram



Max. permissible current in relation to the ambient temperature

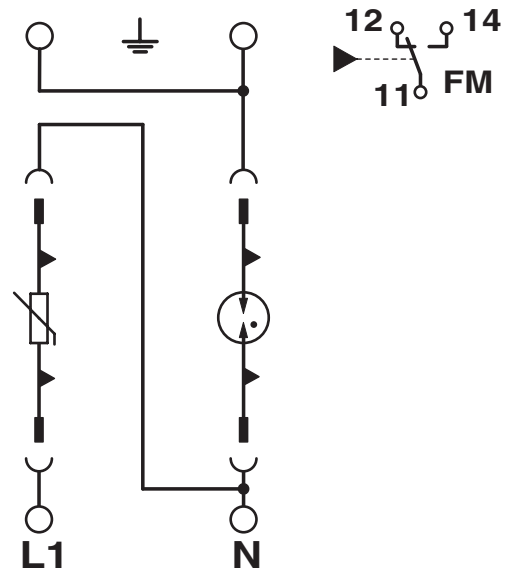
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Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/1466212>



**IECEE CB Scheme**

Approval ID: NL-109184

**CCA**

Approval ID: NTR NL-8052



**KEMA-KEUR**

Approval ID: 71-138153 REV.2

**DNV**

Approval ID: TAE0000501



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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27171202 |
|-------------|----------|

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC000941 |
|----------|----------|

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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## Accessories

### EMG-GKS 12 - Marking material

2947035

<https://www.phoenixcontact.com/pc/products/2947035>



Device marking label, width: 12 mm, area: 12 x 8 mm, e.g. for EML(10x7) R adhesive marking material

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### EML (10X7)R - Label

0816663

<https://www.phoenixcontact.com/pc/products/0816663>



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, Number of individual labels: 10000, text field height: 7 mm, text field width: 10 mm

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## VAL-SPP-T2-275-P - Type 2 surge protection plug

1466685

<https://www.phoenixcontact.com/pc/products/1466685>



Type 2 surge protection plug for VAL-SPP base element, thermally monitored, optical red/green status indicator.

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## VAL-SPP-T2-NPE-P - Type 2 surge protection plug

1466689

<https://www.phoenixcontact.com/pc/products/1466689>



Type 2 surge protection plug, with N-PE total current spark gap for VAL-SPP base element, thermal monitoring, optical red/green status indicator.

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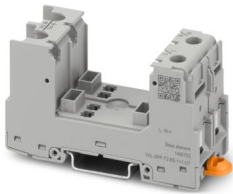
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## VAL-SPP-T2-BE-1+1-UT - Type 2 surge protection base element

1466703

<https://www.phoenixcontact.com/pc/products/1466703>



Base element for type 2 arresters from the VAL-SPP product family. Version for 1-phase power supplies with separate cable routing of N and PE.

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## SPP-R-2 - Remote signaling module

1466699

<https://www.phoenixcontact.com/pc/products/1466699>



Optional remote signaling module for 2-pos. SPDs and base elements from the VALVETRAB SPP product family.

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