

# VAL-SEC-T2-220DC-P - Type 2 surge protection plug



2907879

<https://www.phoenixcontact.com/us/products/2907879>

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

## 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
- Extremely narrow design, just 12 mm per position
- Varistor arrester with a low leakage current

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 2907879                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | CL01                           |
| Product key                          | CL1353                         |
| GTIN                                 | 4055626245041                  |
| Weight per piece (including packing) | 61.2 g                         |
| Weight per piece (excluding packing) | 47.35 g                        |
| Customs tariff number                | 85363090                       |
| Country of origin                    | DE                             |

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## Technical data

### Product properties

|                                |                  |
|--------------------------------|------------------|
| Product type                   | Replacement plug |
| Product family                 | SEC Family       |
| IEC test classification        | II               |
|                                | T2               |
| EN type                        | T2               |
| IEC power supply system        | DC               |
| Type                           | Male             |
| Number of positions            | 1                |
| Surge protection fault message | optical          |

### Insulation characteristics

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

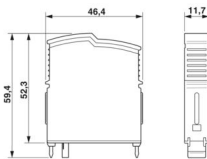
### Electrical properties

|                       |                       |
|-----------------------|-----------------------|
| Nominal voltage $U_N$ | 200 V DC ... 220 V DC |
|-----------------------|-----------------------|

### Connection data

|                   |           |
|-------------------|-----------|
| Connection method | pluggable |
|-------------------|-----------|

### Dimensions

|                     |                                                                                      |
|---------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing |  |
| Width               | 11.7 mm                                                                              |
| Height              | 46.4 mm                                                                              |
| Depth               | 59.4 mm                                                                              |
| Horizontal pitch    | 0.6 Div.                                                                             |

### Material specifications

|                                        |                       |
|----------------------------------------|-----------------------|
| Color                                  | light gray (RAL 7035) |
| 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 $U_N$                                                   | 200 V DC ... 220 V DC                        |
| Maximum continuous operating voltage $U_C$                              | 250 V DC                                     |
| Protective conductor current $I_{PE}$                                   | $\leq 5 \mu\text{A DC}$                      |
| Nominal discharge current $I_n$ (8/20) $\mu\text{s}$                    | 20 kA                                        |
| Maximum discharge current $I_{max}$ (8/20) $\mu\text{s}$                | 40 kA                                        |
| Impulse discharge current (10/350) $\mu\text{s}$ , charge               | 0.5 As                                       |
| Impulse discharge current (10/350) $\mu\text{s}$ , specific energy      | 0.25 kJ/ $\Omega$                            |
| Impulse discharge current (10/350) $\mu\text{s}$ , peak value $I_{imp}$ | 1 kA                                         |
| Short-circuit current rating $I_{SCCR}$                                 | 0.2 kA (without backup fuse)                 |
|                                                                         | 6 kA (for 20 A gG/B backup fuse)             |
| Voltage protection level $U_p$                                          | $\leq 1.5 \text{ kV}$                        |
| Residual voltage $U_{res}$                                              | $\leq 1.5 \text{ kV}$ (at $I_n$ )            |
|                                                                         | $\leq 1.3 \text{ kV}$ (at 10 kA)             |
|                                                                         | $\leq 1.2 \text{ kV}$ (at 5 kA)              |
|                                                                         | $\leq 1.1 \text{ kV}$ (at 4 kA)              |
|                                                                         | $\leq 1 \text{ kV}$ (at 2 kA)                |
| TOV behavior at $U_T$                                                   | 320 V DC (5 s / withstand mode)              |
| Response time $t_A$                                                     | $\leq 25 \text{ ns}$                         |
| Max. backup fuse with V-type through wiring                             | 20 A (gG / B at $I_{SCCR} > 200 \text{ A}$ ) |
| Max. backup fuse with branch wiring                                     | 20 A (gG / B at $I_{SCCR} > 200 \text{ A}$ ) |

## Additional technical data

|                                            |                                                     |
|--------------------------------------------|-----------------------------------------------------|
| Maximum continuous operating voltage $U_C$ | 264 V AC (for operation in safety lighting systems) |
|--------------------------------------------|-----------------------------------------------------|

## 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                                | $\leq 6000 \text{ m (amsl)}$                              |
| 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)                      |

## Approvals

## UL specifications

|                                           |           |
|-------------------------------------------|-----------|
| Maximum continuous operating voltage MCOV | 250 V DC  |
| Nominal discharge current $I_n$           | 20 kA     |
| Mode of protection                        | (DC+) - G |

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|                               |           |
|-------------------------------|-----------|
|                               | (DC-) - G |
| Nominal voltage               | 220 V DC  |
| Power distribution system     | DC        |
| Measured limiting voltage MLV | 1640 V    |
| SPD Type                      | 4CA       |

## Standards and regulations

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

### EN 61643-11

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

## Mounting

|               |                 |
|---------------|-----------------|
| Mounting type | on base element |
|---------------|-----------------|

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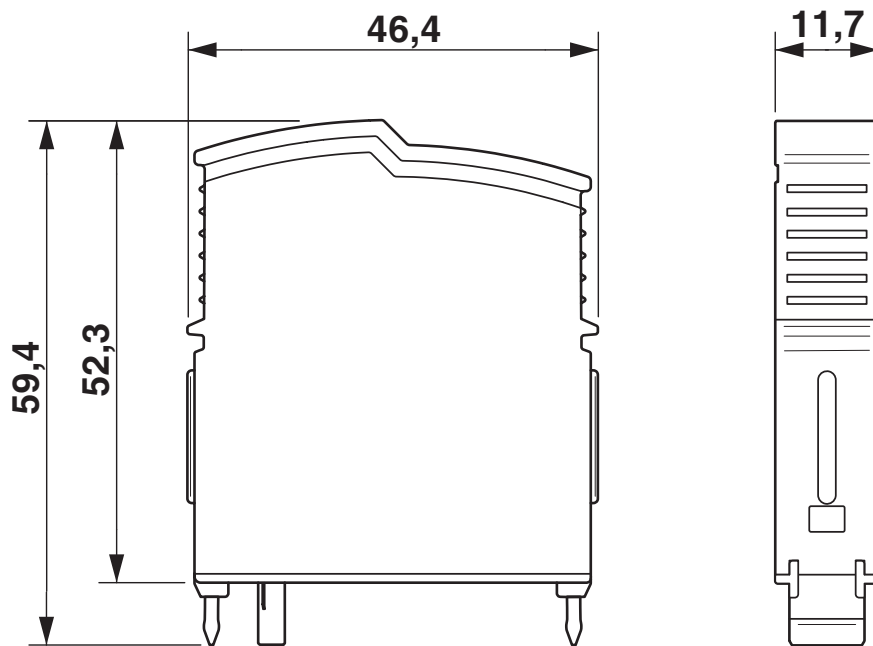
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## Drawings

Dimensional drawing



Circuit diagram



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## Approvals

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



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

**UAE-RoHS**

Approval ID: 23-10-88707

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27171292 |
| ECLASS-15.0 | 27171292 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC002496 |
|----------|----------|

### 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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