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## Surge protection plug - PT 2X1-12AC-ST - 2856090

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Surge protection plug for the base element, coarse and fine protection for two signal wires with common reference potential, common mode voltage coarse protection to ground. Design: 12 V AC

The illustration shows the version PT 2x1- 5 DC-ST

### Product Features

- ✓ Plugs can be checked with CHECKMASTER
- ✓ Installed in conjunction with the PT 2x1...-BE base element
- ✓ Maximum ease of maintenance thanks to the two-piece design
- ✓ Base element remains an integral part of the installation
- ✓ Consistent plug-in signal circuit protection
- ✓ Protection for two conductors with common reference potential
- ✓ Impedance-neutral disconnection of plug for test and maintenance purposes



### Key commercial data

|                                      |           |
|--------------------------------------|-----------|
| Packing unit                         | 1 pc      |
| Weight per Piece (excluding packing) | 20.62 GRM |
| Custom tariff number                 | 85363010  |
| Country of origin                    | Germany   |

### Technical data

#### Dimensions

|                  |         |
|------------------|---------|
| Height           | 45 mm   |
| Width            | 17.7 mm |
| Depth            | 52 mm   |
| Horizontal pitch | 1 Div.  |

# Surge protection plug - PT 2X1-12AC-ST - 2856090

## Technical data

### Dimensions

|                        |         |
|------------------------|---------|
| Complete module height | 90 mm   |
| Complete module width  | 17.7 mm |
| Complete module depth  | 65.5 mm |

### Ambient conditions

|                                 |                  |
|---------------------------------|------------------|
| Ambient temperature (operation) | -40 °C ... 85 °C |
| Degree of protection            | IP20             |

### General

|  |  |
|--|--|
| Housing material   | PA 6.6   |
| Inflammability class according to UL 94                        | V0   |
| Color  | black  |
| Standards for air and creepage distances                       | VDE 0110-1   |
|  | IEC 60664-1  |
| Mounting type  | On base element  |
| Type   | DIN rail module, two-section, divisible  |
| Direction of action  | Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground |
| Arrester can be tested with CHECKMASTER from software version: | From SW rev. 1.00  |

### Protective circuit

|   |                                     |
|---|-------------------------------------|
| IEC test classification                                     | C1                                  |
|   | C2                                  |
|   | C3                                  |
|   | D1                                  |
| VDE requirement class                                       | C1                                  |
|   | C2                                  |
|   | C3                                  |
|   | D1                                  |
| Nominal voltage $U_N$                                       | 12 V AC                             |
| Maximum continuous operating voltage $U_C$                  | 18 V DC                             |
|   | 13 V AC                             |
| Maximum continuous voltage $U_C$ (wire-ground)              | 18 V DC                             |
|   | 13 V AC                             |
| Nominal current $I_N$                                       | 300 mA (45°C)                       |
| Operating effective current $I_C$ at $U_C$                  | $\leq 5 \mu A$                      |
| Residual current $I_{PE}$                                   | $\leq 1 \mu A$ (BE: 2x1+F)          |
|   | $\leq 10 \mu A$ (Directly grounded) |
| Nominal discharge current $I_n$ (8/20) $\mu s$ (Core-Earth) | 10 kA                               |

# Surge protection plug - PT 2X1-12AC-ST - 2856090

## Technical data

### Protective circuit

|   |                                  |
|---|----------------------------------|
| Total surge current (8/20) $\mu$ s                                      | 20 kA                            |
| Max. discharge current $I_{\max}$ (8/20) $\mu$ s maximum (Core-Earth)   | 10 kA                            |
| Nominal pulse current $I_{\text{an}}$ (10/1000) $\mu$ s (Core-Earth)    | 49 A                             |
| Impulse discharge current (10/350) $\mu$ s, peak value $I_{\text{imp}}$ | 2.5 kA (per path)                |
| Output voltage limitation at 1 kV/ $\mu$ s (Core-Earth) spike           | $\leq 30$ V                      |
| Output voltage limitation at 1 kV/ $\mu$ s (Core-Earth) static          | $\leq 25$ V                      |
| Residual voltage at $I_{\text{n}}$ (conductor-ground)                   | $\leq 31$ V                      |
| Voltage protection level $U_p$ (Core-Earth)                             | $\leq 70$ V (C2 (10 kV/5 kA))    |
| Response time $t_A$ (Core-Earth)  | $\leq 1$ ns                      |
| Input attenuation aE, asym.   | 0.5 dB ( $\leq 700$ kHz)         |
| Cut-off frequency $f_g$ (3 dB), asym. (PE) in 50 Ohm system             | typ. 4 MHz                       |
| Capacity (Core-Earth)   | 1.3 nF                           |
| Resistance in series  | 4.7 $\Omega$ (1-2/5-6/7-8/11-12) |
| Surge protection fault message  | None                             |
| Max. required back-up fuse  | 315 mA (e.g. T (IEC 127-2/III))  |
| Surge current resistance (conductor-ground)                             | C2 - 10 kV/5 kA                  |
|   | D1 - 2,5 kA                      |

### Connection data

|  |  |
|--|--|
| Connection method                      | Screw connection (in connection with the base element) |
| Connection type IN                     | PLUGTRAB plug-in system                                |
| Connection type OUT                    | PLUGTRAB plug-in system                                |
| Screw thread                           | M3   |
| Tightening torque                      | 0.8 Nm   |
| Stripping length                       | 8 mm   |
| Conductor cross section stranded min.  | 0.2 mm <sup>2</sup>                                    |
| Conductor cross section stranded max.  | 2.5 mm <sup>2</sup>                                    |
| Conductor cross section solid min.     | 0.2 mm <sup>2</sup>                                    |
| Conductor cross section solid max.     | 4 mm <sup>2</sup>                                      |
| Conductor cross section AWG/kcmil min. | 24   |
| Conductor cross section AWG/kcmil max  | 12   |

### Standards and Regulations

|                       |                 |
|-----------------------|-----------------|
| Standards/regulations | IEC 61643-21    |
|                       | DIN EN 61643-21 |
|                       | UL 497B         |



## Surge protection plug - PT 2X1-12AC-ST - 2856090

### Classifications

#### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 4.0 | 27140201 |
| eCl@ss 4.1 | 27130801 |
| eCl@ss 5.0 | 27130801 |
| eCl@ss 5.1 | 27130801 |
| eCl@ss 6.0 | 27130807 |
| eCl@ss 7.0 | 27130807 |
| eCl@ss 8.0 | 27130807 |

#### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC000943 |
| ETIM 3.0 | EC000943 |
| ETIM 4.0 | EC000943 |
| ETIM 5.0 | EC000943 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30212010 |
| UNSPSC 7.0901 | 39121610 |
| UNSPSC 11     | 39121610 |
| UNSPSC 12.01  | 39121610 |
| UNSPSC 13.2   | 39121620 |

### Approvals

#### Approvals

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Approvals

UL Listed / GOST

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Ex Approvals

UL Listed / cUL Listed / cULus Listed

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Approvals submitted

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Approval details

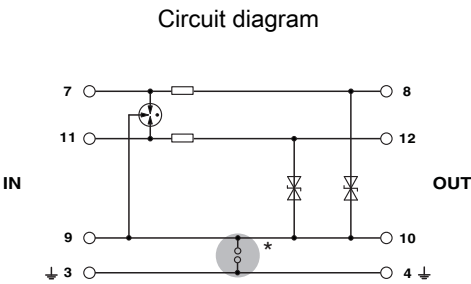
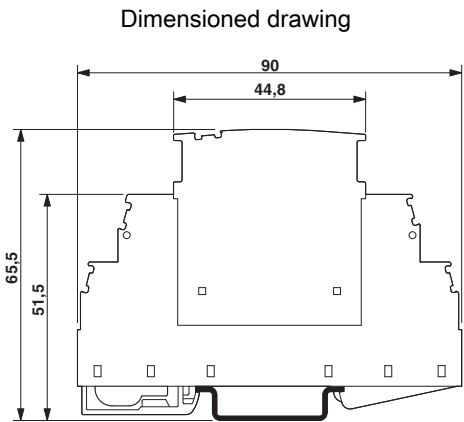
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Approvals

|   |       |
|---|-------|
| UL Listed  |       |
|   |       |
| Nominal current IN  | 0.3 A |
| Nominal voltage UN  | 17 V  |

|  |  |
|--|--|
| GOST  |  |
|--|--|

Drawings



The figure shows the complete module consisting of a base element and connector

## Surge protection plug - PT 2X1-12AC-ST - 2856090

Catalog photo

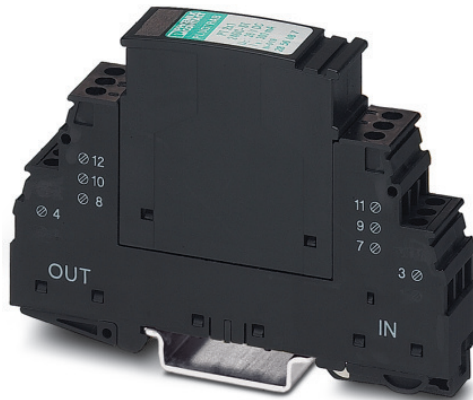


Figure may contain other products.

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