

## Surge protection plug - PT 2X1-12DC-ST - 2856074

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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 DC


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

### Why buy this product

- 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                         | 10 pc   |
| GTIN                                 | <br>4 017918 599171 |
| Weight per Piece (excluding packing) | 16.27 g   |
| 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.  |
| Complete module height | 90 mm   |

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## Technical data

### Dimensions

|                       |         |
|-----------------------|---------|
| 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 DC                             |
| Maximum continuous operating voltage $U_C$                           | 13 V DC                             |
|  | 9 V AC                              |
| Maximum continuous voltage $U_C$ (wire-ground)                       | 13 V DC                             |
|  | 9 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                               |
| 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 $I_{an}$ (10/1000) $\mu s$ (Core-Earth)        | 67 A                                |
| Impulse discharge current (10/350) $\mu s$ , peak value $I_{imp}$    | 2.5 kA (per path)                   |

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## Technical data

### Protective circuit

|  |                                 |
|--|---------------------------------|
| Output voltage limitation at 1 kV/μs (Core-Earth) spike              | ≤ 23 V                          |
|  | ≤ 600 V (BE: 2x1+F)             |
| Output voltage limitation at 1 kV/μs (Core-Earth) static             | ≤ 18 V                          |
| Residual voltage at I <sub>n</sub> , (conductor-ground)              | ≤ 18 V                          |
| Residual voltage with I <sub>an</sub> (10/1000)μs (conductor-ground) | ≤ 23 V                          |
| Voltage protection level U <sub>p</sub> (Core-Earth)                 | ≤ 65 V (C2 (10 kV/5 kA))        |
| Response time t <sub>A</sub> (Core-Earth)                            | ≤ 1 ns                          |
| Input attenuation a <sub>E</sub> , asym.                             | 0.5 dB (≤ 600 kHz)              |
| Cut-off frequency f <sub>g</sub> (3 dB), asym. (PE) in 50 Ohm system | typ. 3 MHz                      |
| Capacity (Core-Earth)  | 1.5 nF                          |
| Resistance in series   | 4.7 Ω (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 carrying capacity in acc. with IEC 61643-21 (Core-Earth)       | C2 (10 kV/5 kA)                 |
|  | D1 (2.5 kA)                     |

### Connection data

|  |                     |
|--|---------------------|
| 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         |

## 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 |

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## Classifications

### 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 / GL

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#### Ex Approvals

UL Listed / cUL Listed / cULus Listed

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#### Approvals submitted

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### Approval details

|                    |       |
|--------------------|-------|
| UL Listed          |       |
| Nominal current IN | 0.3 A |
| Nominal voltage UN | 12 V  |

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

|    |  |
|----|--|
| GL |  |
|----|--|

## Surge protection plug - PT 2X1-12DC-ST - 2856074

### Accessories

#### Accessories

#### Device marking

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128



Zack marker strip, Strip, white, Unlabeled, Can be labeled with: Plotter, Mounting type: Snap into tall marker groove, For terminal block width: 18 mm, Lettering field: 18 x 5 mm

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#### Labeled terminal marker

Zack Marker strip, flat - ZBF 5,LGS:FORTL.ZAHLEN - 0808671



Zack Marker strip, flat, Strip, white, labeled, Printed horizontally: Consecutive numbers 1 - 10, 11 - 20, etc. up to 491 - 500, Mounting type: Snap into flat marker groove, For terminal block width: 5 mm, Lettering field: 5.15 x 5.15 mm

Zack Marker strip, flat - ZBF 5,LGS:GERADE ZAHLEN - 0810821



Zack Marker strip, flat, Strip, white, labeled, Printed horizontally: Consecutive numbers 2 - 20, 22 - 40, etc. up to 82 - 100, Mounting type: Snap into flat marker groove, For terminal block width: 5 mm, Lettering field: 5.15 x 5.15 mm

Zack Marker strip, flat - ZBF 5,LGS:UNGERADE ZAHLEN - 0810863



Zack Marker strip, flat, Strip, white, labeled, Printed horizontally: Odd numbers 1 - 19, 21 - 39, etc. up to 81 - 99, Mounting type: Snap into flat marker groove, For terminal block width: 5 mm, Lettering field: 5.15 x 5.15 mm

Zack Marker strip, flat - ZBF 5,QR:FORTL.ZAHLEN - 0808697



Zack Marker strip, flat, Strip, white, labeled, Printed vertically: Consecutive numbers 1 - 10, 11 - 20, etc. up to 91 - 100, Mounting type: Snap into flat marker groove, For terminal block width: 5 mm, Lettering field: 5.15 x 5.15 mm

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#### Marker pen

## Surge protection plug - PT 2X1-12DC-ST - 2856074

### Accessories

Marker pen - X-PEN 0,35 - 0811228



Marker pen without ink cartridge, for manual labeling of markers, labeling extremely wipe-proof, line thickness 0.35 mm

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### Terminal marking

Zack Marker strip, flat - ZBF 5:UNBEDRUCKT - 0808642



Zack Marker strip, flat, Strip, white, Unlabeled, Can be labeled with: Plotter, Mounting type: Snap into flat marker groove, For terminal block width: 5 mm, Lettering field: 5.1 x 5.2 mm

Zack Marker strip, flat - ZBF 5/WH-100:UNBEDRUCKT - 0808668



Zack Marker strip, flat, Strip, white, Unlabeled, Can be labeled with: Plotter, Mounting type: Snap into flat marker groove, For terminal block width: 5 mm, Lettering field: 5.15 x 5.15 mm

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### Necessary add-on products

Surge protection base element - PT 2X1-BE - 2856139



Base element for protective plug PT with protective circuit for 2 conductors of signal circuits grounded on one side. Mounting on NS 35/7.5 und NS 35/15, housing width: 17.5 mm.

Surge protection base element - PT 2X1+F-BE - 2856142



Base element for protective plug PT with protective circuit for 2 conductors of signal circuits grounded on one side. Integrated gas arrester as coarse protection between GND and PE. Mounting on NS 35/7.5 und NS 35/15, housing width: 17.5 mm.

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### Additional products

# Surge protection plug - PT 2X1-12DC-ST - 2856074

## Accessories

Shield connection - SSA 3-6 - 2839295



shield fast connections for conductor diameter 3 - 6 mm. Potential connection cable: 200 mm, black

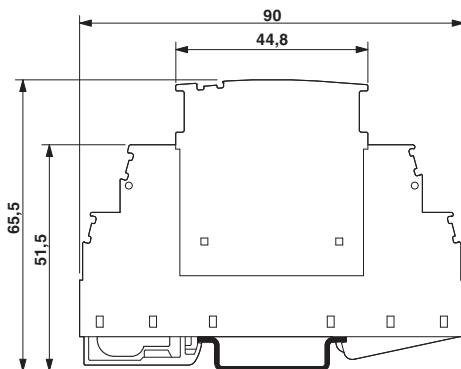
Shield connection - SSA 5-10 - 2839512



Shield fast connection for conductor diameters 5 - 10 mm. Potential connection cable: 200 mm, black

## Drawings

Dimensioned drawing



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

Circuit diagram

