

Surge protection plug - PT 2X1-24AC/FM-ST - 2920146

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Surge protection plug with integrated diagnostic and status indicator on the module and remote indication contact for two signal wires with common reference potential. Nominal voltage: 24 V AC

Why buy this product

- ✓ Plugs can be checked with CHECKMASTER
- ✓ Maximum ease of maintenance thanks to the two-piece design
- ✓ Base element remains an integral part of the installation
- ✓ Permanent and independent monitoring by a diagnostics unit
- ✓ With floating remote indication contact
- ✓ Consistent plug-in signal circuit protection
- ✓ Optical status indication for the individual arresters
- ✓ Impedance-neutral disconnection of plug for test and maintenance purposes



Key commercial data

| | |
|--------------------------------------|---|
| Packing unit | 10 pc |
| GTIN |  4 046356 154062 |
| Weight per Piece (excluding packing) | 27.54 g |
| Custom tariff number | 85369010 |
| 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 |
| Complete module width | 17.7 mm |

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Technical data

Dimensions

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

Protective circuit

| | |
|--|-------------------------------------|
| IEC test classification | C1 |
| | C2 |
| | C3 |
| | D1 |
| VDE requirement class | C1 |
| | C2 |
| | C3 |
| | D1 |
| Nominal voltage U_N | 24 V AC |
| Maximum continuous operating voltage U_C | 40 V DC |
| | 28 V AC |
| Maximum continuous voltage U_C (wire-ground) | 40 V DC |
| | 28 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) μs (Core-Earth) | 10 kA |
| Total surge current (8/20) μs | 20 kA |
| Max. discharge current I_{max} (8/20) μs maximum (Core-Earth) | 10 kA |
| Nominal pulse current I_{an} (10/1000) μs (Core-Earth) | 23 A (25 °C) |
| Impulse discharge current (10/350) μs , peak value I_{imp} | 2.5 kA (per path) |
| Output voltage limitation at 1 kV/ μs (Core-Earth) spike | $\leq 70 V$ |
| Output voltage limitation at 1 kV/ μs (Core-GND) spike | $\leq 70 V$ |

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Protective circuit

| | |
|---|---|
| Output voltage limitation at 1 kV/ μ s (Core-Earth) static | ≤ 55 V |
| Output voltage limitation at 1 kV/ μ s (Core-GND) static | ≤ 55 V |
| Residual voltage at I_n , (conductor-ground) | ≤ 55 V |
| Residual voltage with I_{an} (10/1000) μ s (conductor-ground) | ≤ 65 V |
| Voltage protection level U_p (core-ground) | ≤ 55 V (C1 - 500 V / 250 A) |
| | ≤ 55 V (C3 - 25 A) |
| Voltage protection level U_p (core-GND) | ≤ 55 V (C1 - 500 V / 250 A) |
| | ≤ 55 V (C3 - 25 A) |
| Response time t_A (Core-Earth) | ≤ 1 ns |
| Input attenuation aE, asym. | typ. 0.5 dB (≤ 1.5 MHz / 50 Ω) |
| | typ. 0.2 dB (≤ 500 kHz / 150 Ω) |
| Cut-off frequency f_g (3 dB), asym. (GND) in 50 Ohm system | typ. 8 MHz |
| Cut-off frequency f_g (3 dB), asym. (GND) in 150 Ohm system | typ. 3 MHz |
| Resistance in series | 4.7 Ω (7-8/11-12) |
| Max. required back-up fuse | 315 mA (e.g. T (IEC 127-2/III)) |
| Impulse durability (conductor-ground) | C2 - 10 kV/5 kA |
| | D1 - 2,5 kA |
| | C3 - 10 A |
| Alternating current carrying capacity (conductor-ground) | 5 A - 1 s |

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 ² |
| Conductor cross section stranded max. | 2.5 mm ² |
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 4 mm ² |
| 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 |

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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

Approvals

UL Listed / EAC

Ex Approvals

Approvals submitted

Approval details

| |
|-----------|
| UL Listed |
|-----------|

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|-----|
| EAC |
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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

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

Marker pen

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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

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

Necessary add-on products

Surge protection base element - PT 2X1+F-BE/FM - 2920049



Base element to accept a protective plug with diagnostic and status indicator for two signal wires with common reference potential, integrated spark gap to provide a high-resistance connection between the ground of the protective circuit of the plug and ground potential.

Surge protection base element - PT 2X1-BE/FM - 2920036



Base element to accept a protective plug with diagnostic and status indicator for two signal wires with common reference potential.

Additional products

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Accessories

Shield connection - SSA 3-6 - 2839295



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

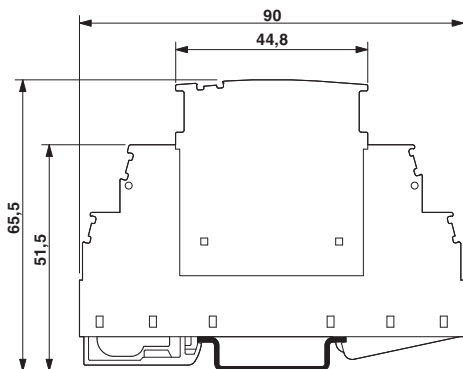
Shield connection - SSA 5-10 - 2839512



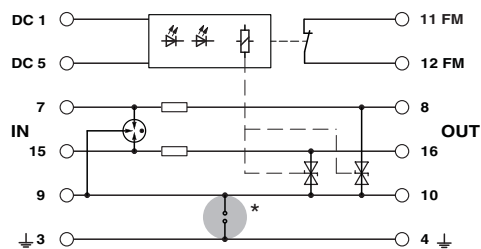
Shield fast connection for conductor diameters 5 - 10 mm. Potential connection cable: 200 mm, black

Drawings

Dimensioned drawing



Circuit diagram



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