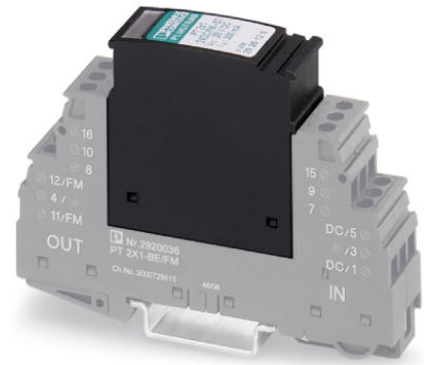


PT 2X1-24AC/FM-ST

Order No.: 2920146



<http://eshop.phoenixcontact.de/phoenix/treeViewClick.do?UID=2920146>

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



| Commercial data | |
|--------------------------|-------------------|
| GTIN (EAN) | 4 046356 154062 |
| sales group | J213 |
| Pack | 10 pcs. |
| Customs tariff | 85369010 |
| Catalog page information | Page 91 (TT-2011) |

Product notes

WEEE/RoHS-compliant since:
01/01/2007



<http://www.download.phoenixcontact.com>
Please note that the data given here has been taken from the online catalog. For comprehensive information and data, please refer to the user documentation. The General Terms and Conditions of Use apply to Internet downloads.

Technical data

| General | |
|------------------------------------|--------|
| Housing material | PA 6.6 |
| Inflammability class acc. to UL 94 | V0 |
| Color | black |

| | |
|--|--|
| Standards for air and creepage distances | VDE 0110-1 |
| | IEC 60664-1: 1992-10 |
| Total surge current (8/20) μ s | 20 kA |
| Ambient temperature (operation) | -40 °C ... 85 °C |
| Mounting type | On base element |
| Design | DIN rail module, two-section, divisible |
| Degree of protection | IP20 |
| Direction of action | Line-Line & Line-Signal Ground/Shield & optional Signal Ground/ Shield-Earth Ground |
| Width | 17.70 mm |
| Height | 52.00 mm |
| Length | 45.00 mm |
| Pitch unit | 1 Div. |

Protective circuit

| | |
|---|-------------------------------------|
| IEC category | 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 |
| Ground conductor current I_{PE} | $\leq 1 \mu$ A (BE: 2x1+F) |
| | $\leq 10 \mu$ A (Directly grounded) |
| Nominal discharge surge current I_n (8/20) μ s (Core-Earth) | 10 kA |
| Total surge current (8/20) μ s | 20 kA |
| Max. discharge surge current I_{max} (8/20) μ s maximum (Core-Earth) | 10 kA |

| | |
|--|---|
| Nominal pulse current I_{an} (10/1000) μ s (Core-Earth) | 23 A (25°C) |
| Lightning test current (10/350) μ s, peak value I_{imp} | 2.5 kA (per path) |
| Output voltage limitation at 1 kV/ μ s (Core-Earth) spike | ≤ 70 V |
| Output voltage limitation at 1 kV/ μ s (Core-GND) spike | ≤ 70 V |
| 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 |
| Protection level U_p (Core-Earth) | ≤ 55 V (C1 (500 V/250 A)) ≤ 55 V (C3 (25 A)) |
| 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 a_E , 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)) |
| Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth) | C2 (10 kV/5 kA) D1 (2.5 kA) C3 (10 A) |
| Alternating current carrying capacity in acc. with IEC 61643-21 (Core-Earth) | 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 |

Connection, protective circuit

| | |
|-----------------------|-----------------|
| Standards/regulations | IEC 61643-21 |
| | DIN EN 61643-21 |

Certificates / Approvals



Certification GOST, UL Listed

Accessories

| Item | Designation | Description |
|----------------|---------------------------|---|
| Marking | | |
| 0811228 | X-PEN 0,35 | Marker pen without ink cartridge, for manual labeling of markers, labeling extremely wipe-proof, line thickness 0.35 mm |
| 0814717 | ZBF 15:SO/CMS | Zack strip, flat, 10-section, divisible, special printing, marking according to customer requirements |
| 0808671 | ZBF 5,LGS:FORTL.ZAHLEN | Zack marker strip, flat, printed horizontally: 10-section, with the numbers 1 - 10, 11 - 20, and so on up to 491 - 500, color: white |
| 0810821 | ZBF 5,LGS:GERADE ZAHLEN | Zack marker strip, flat, printed horizontally: 10-section, with even numbers, printed with the numbers: 2-20, 22-40, etc. up to 82-100 |
| 0810863 | ZBF 5,LGS:UNGERADE ZAHLEN | Zack strip, flat, printed horizontally: 10-section, with odd numbers, printed with the numbers: 1-19, 21-39 etc. up to 81-99 |
| 0808697 | ZBF 5,QR:FORTL.ZAHLEN | Zack marker strip, flat, printed vertically: 10-section, with the numbers 1 - 10, 11 - 20, and so on up to 91 - 100, color: white |
| 0808668 | ZBF 5/WH-100:UNBEDRUCKT | Zack strip, flat, unprinted: 10-section, for individual labeling with M-PEN or ZBF-T, large batch, sufficient for labeling 1000 terminal blocks, color: white |

| | | |
|---------|-------------------|--|
| 0808642 | ZBF 5:UNBEDRUCKT | Zack strip, flat, unprinted: 10-section, for individual labeling with M-PEN or ZBF-T, sufficient for 100 terminal blocks, color: white |
| 0800763 | ZBN 18:SO/CMS | Marker labels, 5-section, special printing, labeled according to customer requirements (Please specify the required marking with order), for terminal width: 17.5 mm, color: White |
| 2809128 | ZBN 18:UNBEDRUCKT | Unprinted marker labels, strips with 5 labels for individual labeling with M-PEN or CMS system, for terminal block width: 17.5 mm, color: White |

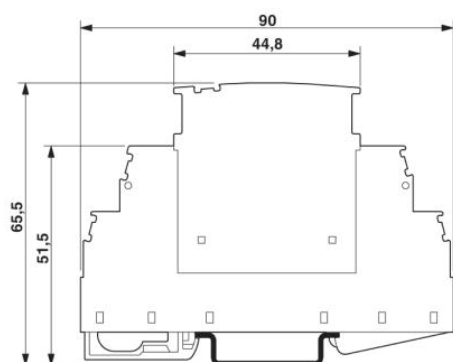
Additional products

| Item | Designation | Description |
|-----------------|-------------|---|
| Assembly | | |
| 2839295 | SSA 3-6 | shield fast connections for conductor diameter 3 - 6 mm. Potential connection cable: 200 mm, black |
| 2839512 | SSA 5-10 | Shield fast connection for conductor diameters 5 - 10 mm. Potential connection cable: 200 mm, black |

| General | | |
|----------------|----------------|---|
| 2920049 | PT 2X1+F-BE/FM | 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. |
| 2920036 | PT 2X1-BE/FM | Base element to accept a protective plug with diagnostic and status indicator for two signal wires with common reference potential. |

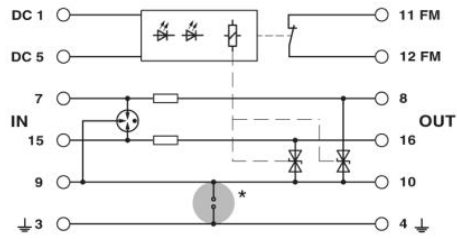
Diagrams/Drawings

Dimensioned drawing



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

Circuit diagram



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