

PT PE/S+1X2-24-ST - Surge protection plug



2819008

<https://www.phoenixcontact.com/us/products/2819008>

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Protective plug PT with surge voltage equipment protection for power supply units, visual error display, nominal voltage: 24 V and a 2-core floating signal circuit, nominal voltage: 24 V.

Your advantages

- Easy testing and documentation with CHECKMASTER 2 with pluggable protective modules
- Maximum ease of maintenance, thanks to the 2-piece design
- Easy selection for all possible demands in MCR applications with a complete product portfolio
- The signal is not influenced during maintenance work, thanks to the impedance-neutral insertion and removal of protective plugs

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2819008 |
| Packing unit | 10 pc |
| Minimum order quantity | 1 pc |
| Sales key | CL21 |
| Product key | CL2111 |
| GTIN | 4017918819323 |
| Weight per piece (including packing) | 31.43 g |
| Weight per piece (excluding packing) | 25.833 g |
| Customs tariff number | 85363010 |
| Country of origin | DE |

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Technical data

Product properties

| | |
|--------------------------------|-------------------------------------|
| Product type | Surge protection for MCR technology |
| Product family | PLUGTRAB PT |
| IEC test classification | C1 |
| | C2 |
| | C3 |
| | D1 |
| Type | Male |
| Surge protection fault message | optical |
| Wire pairs per module | 1 |

Insulation characteristics

| | |
|--|-------------------|
| Overvoltage category | III |
| Pollution degree | 2 |
| Arrester can be tested with CHECKMASTER from software version: | From SW rev. 1.00 |
| EN type | T3 |
| Number of ports | One |

Electrical properties

| | |
|-----------------------|---------|
| Nominal voltage U_N | 24 V AC |
|-----------------------|---------|

Connection data

| | |
|----------------------------------|--|
| Connection method | Screw connection (in connection with the base element) |
| Screw thread | M3 |
| Tightening torque | 0.5 Nm |
| Conductor cross-section flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section rigid | 0.2 mm ² ... 4 mm ² |
| Conductor cross-section AWG | 24 ... 12 |
| Connection method | Screw connection (in connection with the base element) |
| Screw thread | M3 |
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| Conductor cross-section flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section rigid | 0.2 mm ² ... 4 mm ² |
| Conductor cross-section AWG | 24 ... 12 |

Dimensions

| | |
|---------------------|--|
| Dimensional drawing | |
|---------------------|--|

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| | |
|------------------------|---------|
| Width | 17.5 mm |
| Height | 44.8 mm |
| Depth | 51.7 mm |
| Horizontal pitch | 1 Div. |
| Complete module width | 17.7 mm |
| Complete module height | 90 mm |
| Complete module depth | 65.5 mm |

Material specifications

| | |
|--|----------------------------------|
| Color | black (RAL 9005) copper color |
| Flammability rating according to UL 94 | V-0 |
| Insulating material | PA 6.6 |
| Housing material | PA 6.6 |

Mechanical properties

Mechanical data

| | |
|-----------------|----|
| Open side panel | No |
|-----------------|----|

Protective circuit

Power supplies

| | |
|--|---|
| Direction of action | L-N-PE & Signal Line-Signal Line-Earth Ground |
| Nominal voltage U_N | 24 V AC |
| Nominal frequency f_N | 50 Hz (60 Hz) |
| Maximum continuous operating voltage U_C | 34 V AC 44 V DC |
| Rated load current I_L | 6 A (30 °C) |
| Protective conductor current I_{PE} | $\leq 5 \mu A$ |
| Operating effective current I_C at U_C | ≤ 1.5 mA |
| Nominal discharge current I_n (8/20) μs | 700 A |
| Maximum discharge current I_{max} (8/20) μs | 2 kA |
| Combination wave U_{OC} | 2 kV |
| Voltage protection level U_p (L-N) | ≤ 0.18 kV |
| Voltage protection level U_p (L-PE) | ≤ 0.55 kV |
| Residual voltage at I_{max} , (L-N) | ≤ 0.17 kV (at I_n) |
| Residual voltage at I_{max} , (L-PE) | ≤ 0.1 kV (at I_n) |
| Response time t_A (L-N) | ≤ 25 ns |
| Response time t_A (L-PE) | ≤ 100 ns |
| Short-circuit current rating I_{SCCR} | 1.5 kA 1 kA |
| Max. backup fuse with branch wiring | 6 A (gG) |

Information technology

| | |
|-----------------------|---------|
| Nominal voltage U_N | 24 V AC |
|-----------------------|---------|

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| | |
|--|---|
| Maximum continuous operating voltage U_C | 40 V DC |
| | 28 V AC |
| Rated current | 450 mA (45 °C) |
| Operating effective current I_C at U_C | $\leq 5 \mu\text{A}$ |
| Protective conductor current I_{PE} | $\leq 2 \mu\text{A}$ |
| Nominal discharge current I_n (8/20) μs (line-line) | 10 kA |
| Nominal discharge current I_n (8/20) μs (line-ground) | 10 kA |
| Pulse discharge current I_{imp} (10/350) μs (line-earth) | 2.5 kA |
| Total discharge current I_{Total} (8/20) μs | 20 kA |
| Max. discharge current I_{max} (8/20) μs maximum (line-line) | 10 kA |
| Max. discharge current I_{max} (8/20) μs maximum (line-earth) | 20 kA (in total) |
| Nominal pulse current I_{an} (10/1000) μs (line-line) | 23 A |
| Output voltage limitation at 1 kV/ μs (line-line) spike | $\leq 55 \text{ V}$ |
| Output voltage limitation at 1 kV/ μs (line-earth) spike | 450 V |
| Output voltage limitation at 1 kV/ μs (line-line) static | $\leq 55 \text{ V}$ |
| Output voltage limitation at 1 kV/ μs (line-earth) static | $\leq 25 \text{ V}$ |
| Residual voltage at I_n (conductor-conductor) | $\leq 55 \text{ V}$ |
| Residual voltage with I_{an} (10/1000) μs (line-line) | $\leq 65 \text{ V}$ |
| Voltage protection level U_p (line-line) | $\leq 80 \text{ V}$ (C2 - 10 kV / 5 kA) |
| Voltage protection level U_p (line-earth) | $\leq 450 \text{ V}$ (C2 - 10 kV / 5 kA) |
| Voltage protection level U_p static (line-line) | $\leq 50 \text{ V}$ (C2 - 10 kV / 5 kA) |
| Voltage protection level U_p static (line-earth) | $\leq 50 \text{ V}$ (C2 - 10 kV / 5 kA) |
| Response time t_A (line-line) | $\leq 1 \text{ ns}$ |
| Response time t_A (line-earth) | $\leq 100 \text{ ns}$ |
| Input attenuation aE, sym. | typ. 0.5 dB ($\leq 1.5 \text{ MHz} / 50 \Omega$) |
| | typ. 0.2 dB ($\leq 500 \text{ kHz} / 150 \Omega$) |
| | typ. 0.1 dB ($\leq 100 \text{ kHz} / 600 \Omega$) |
| Cut-off frequency f_g (3 dB), sym. in 50 Ω system | typ. 8 MHz |
| Cut-off frequency f_g (3 dB), sym. in 150 Ω system | typ. 3 MHz |
| Cut-off frequency f_g (3 dB), sym. in 600 Ω system | typ. 800 kHz |
| Capacity (Core-Core) | typ. 1.1 nF |
| Capacity (Core-Earth) | typ. 4 pF |
| Resistance per path | 2.2 $\Omega \pm 10 \%$ |
| Surge protection fault message | Optical, remote indicator contact |
| Max. required back-up fuse | 500 mA (T) |

Environmental and real-life conditions

Ambient conditions

| | |
|---|------------------------------|
| Degree of protection | IP20 |
| Ambient temperature (operation) | -40 °C ... 85 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Altitude | $\leq 2000 \text{ m}$ (amsl) |
| Permissible humidity (operation) | 5 % ... 95 % |

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Standards and regulations

| | |
|--------------------------|--------------|
| Standards/specifications | IEC 61643-11 |
| Note | 2011 |
| Standards/specifications | EN 61643-11 |
| Note | 2012 |
| Standards/specifications | EN 61643-21 |
| Note | A2:2013 |

Mounting

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

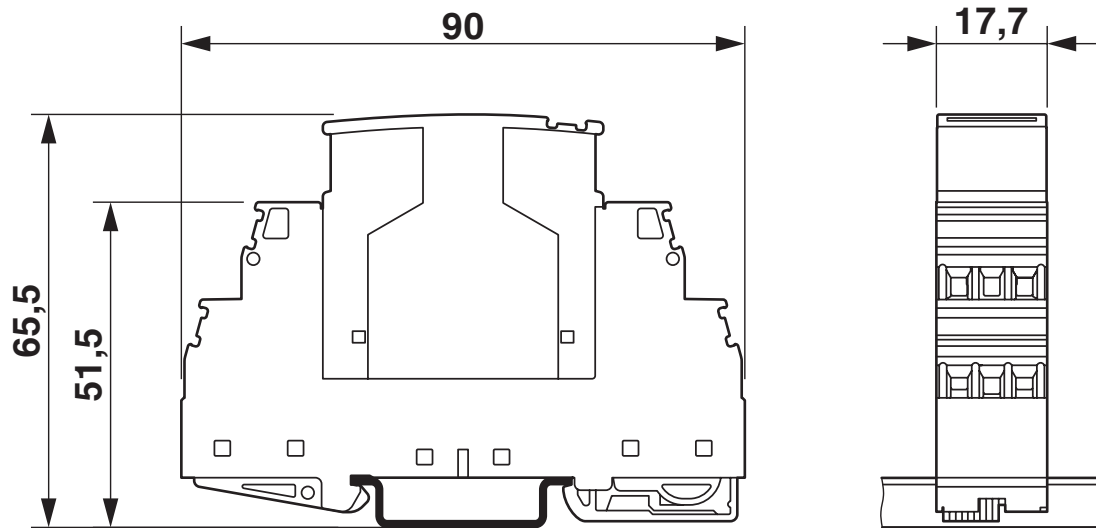
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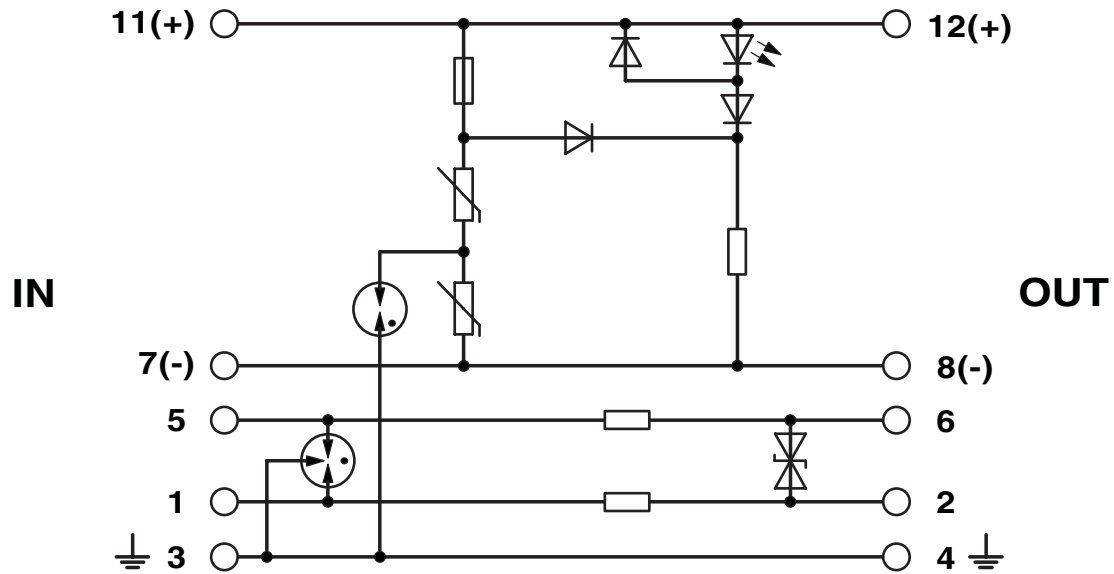
Drawings

Dimensional drawing



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

Circuit diagram



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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27171602 |
| ECLASS-15.0 | 27171602 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC001625 |
|-----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 39121600 |
|-------------|----------|

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Environmental product compliance

EU RoHS

| | |
|---|--------------|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 7(a), 7(c)-I |

China RoHS

| | |
|--|---|
| Environment friendly use period (EFUP) | EFUP-50 |
| | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

EU REACH SVHC

| | |
|-------------------------------------|--------------------------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |
| SCIP | 9119892a-b46b-4fe9-9d5b-2bda7424128c |

EF3.1 Climate Change

| | |
|---------|---------------|
| CO2e kg | 1.063 kg CO2e |
|---------|---------------|

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