

PT 3-HF-12DC-ST - Surge protection plug



2858043

<https://www.phoenixcontact.com/gb/products/2858043>

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Surge protection plug for the base element, normal mode voltage coarse and fine protection for two floating signal wires and ground in IT, common mode voltage coarse protection to ground/earth. Design: 12 V DC

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 | 2858043 |
| Packing unit | 10 pc |
| Minimum order quantity | 1 pc |
| Sales key | CL3121 |
| Product key | CL3121 |
| GTIN | 4017918878047 |
| Weight per piece (including packing) | 29.37 g |
| Weight per piece (excluding packing) | 20.47 g |
| Customs tariff number | 85363090 |
| Country of origin | DE |

Technical data

Product properties

| | |
|--|---|
| Product type | Surge protection for information technology |
| Product family | PLUGTRAB PT |
| IEC test classification | C1 |
| | C2 |
| | C3 |
| | D1 |
| VDE requirement class | C1 |
| | C2 |
| | C3 |
| | D1 |
| Type | Male |
| Number of positions | 3 |
| Arrester can be tested with CHECKMASTER from software version: | From SW rev. 1.10 |
| Wire pairs per module | 1 |

Insulation characteristics

| | |
|----------------------|-----|
| Overvoltage category | III |
| Pollution degree | 2 |

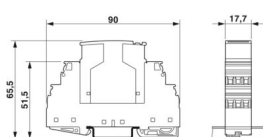
Electrical properties

| | |
|-----------------------|---------|
| Nominal voltage U_N | 12 V DC |
|-----------------------|---------|

Connection data

| | |
|----------------------------------|--|
| Connection method | Screw connection (in connection with the base element) |
| Screw thread | M3 |
| Tightening torque | 0.8 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 |

Dimensions

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

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

Material specifications

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

Mechanical properties

Mechanical data

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

Protective circuit

| | |
|---|--|
| Direction of action | Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground |
| Maximum continuous operating voltage U_C | 14 V DC |
| | 9.8 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} | $< 5 \mu\text{A}$ (with PT 1X2-BE) |
| | $< 1 \mu\text{A}$ (with PT 1X2+F-BE) |
| Nominal discharge current I_n (8/20) μs (line-line) | 10 kA |
| Nominal discharge current I_n (8/20) μs (line-ground) | 10 kA |
| Nominal discharge current I_n (8/20) μs (line-signal ground) | 10 kA |
| Pulse discharge current I_{imp} (10/350) μs | 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) | 10 kA |
| Nominal pulse current I_{an} (10/1000) μs (line-line) | 67 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 | $\leq 55 \text{ V}$ (with PT 1X2-BE) |
| | $\leq 700 \text{ V}$ (with PT 1X2+F-BE) |
| Output voltage limitation at 1 kV/ μs (line-line) static | $\leq 25 \text{ V}$ |
| Output voltage limitation at 1 kV/ μs (line-earth) static | $\leq 25 \text{ V}$ |
| | $\leq 40 \text{ V}$ (with PT 1X2+F-BE) |
| Residual voltage at I_n (conductor-conductor) | $\leq 25 \text{ V}$ |
| Residual voltage at I_n (conductor-ground) | $\leq 40 \text{ V}$ (with PT 1X2-BE) |
| Residual voltage at I_n (line-signal ground) | $\leq 25 \text{ V}$ (with PT 1X2-BE) |
| Residual voltage with I_{an} (10/1000) μs (line-line) | $\leq 25 \text{ V}$ |
| Residual voltage with I_{an} (10/1000) μs (line-signal ground) | $\leq 25 \text{ V}$ |
| Voltage protection level U_p (line-line) | $\leq 50 \text{ V}$ (C3 - 25 A) |
| | $\leq 80 \text{ V}$ (C1 - 1 kV / 500 A) |
| | $\leq 110 \text{ V}$ (C2 - 10 kV / 5 kA) |

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| | |
|--|-------------------------------|
| | ≤ 80 V (6 kV / 3 kA) |
| Voltage protection level U_p (line-earth) | ≤ 50 V (C3 - 25 A) |
| | ≤ 85 V (C1 - 1 kV / 500 A) |
| | ≤ 140 V (C2 - 10 kV / 5 kA) |
| | ≤ 100 V (6 kV / 3 kA) |
| Voltage protection level U_p (line-signal ground) | ≤ 50 V (C3 - 25 A) |
| Response time t_A (line-line) | ≤ 500 ns |
| Response time t_A (line-earth) | ≤ 500 ns |
| Input attenuation aE, sym. | typ. 0.3 dB (≤ 5 MHz / 100 Ω) |
| Cut-off frequency f_g (3 dB), sym. in 100 Ω system | typ. 60 MHz |
| Capacity (Core-Core) | typ. 30 pF |
| Resistance per path | 2.2 Ω ±10 % (7-8/11-12) |
| Max. required back-up fuse | 500 mA (T) |
| Impulse durability (line-line) | C2 - 10 kV / 5 kA |
| | C3 - 67 A |
| Impulse durability (line-earth) | C2 - 10 kV / 5 kA |
| | C3 - 67 A |
| | D1 - 2.5 kA |

Environmental and real-life conditions

Ambient conditions

| | |
|---------------------------------|------------------|
| Degree of protection | IP20 |
| Ambient temperature (operation) | -40 °C ... 85 °C |
| Altitude | max. 2000 m |

Standards and regulations

| | |
|-----------------------|----|
| VDE requirement class | C1 |
| | C2 |
| | C3 |
| | D1 |

Air clearances and creepage distances

| | |
|--------------------------|------------------------------|
| Standards/regulations | DIN EN 61664-1 / IEC 60664-1 |
| Standards/specifications | EN 61643-21/A1 |
| Note | 2009 |
| Standards/specifications | IEC 61643-21/A1 |
| Note | 2008 |

Mounting

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

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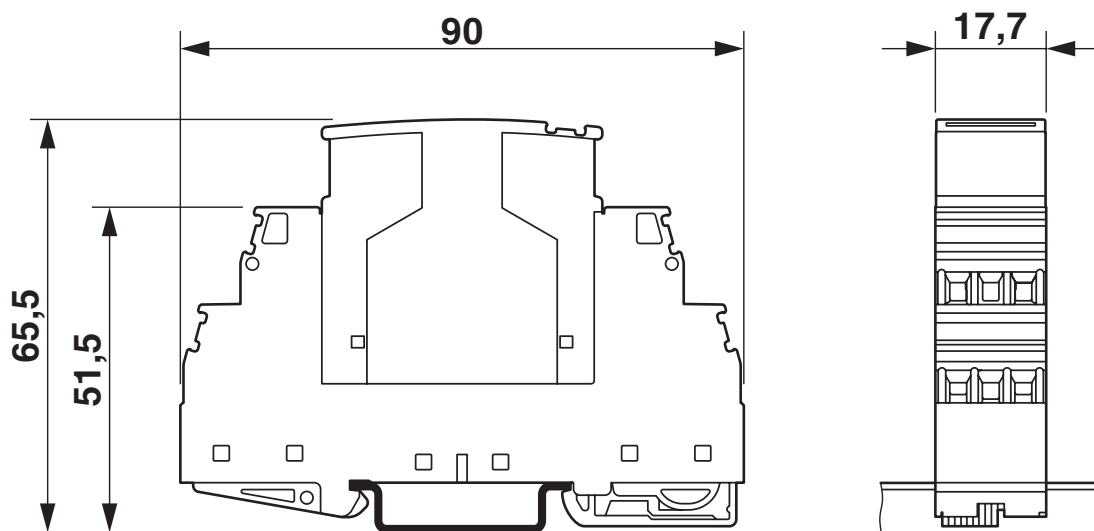


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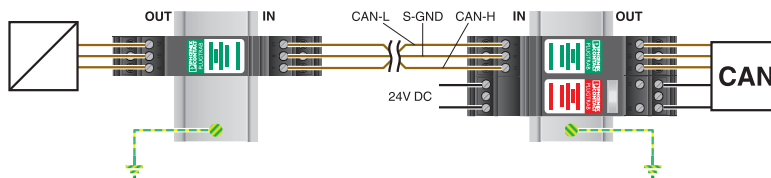
Drawings

Dimensional drawing

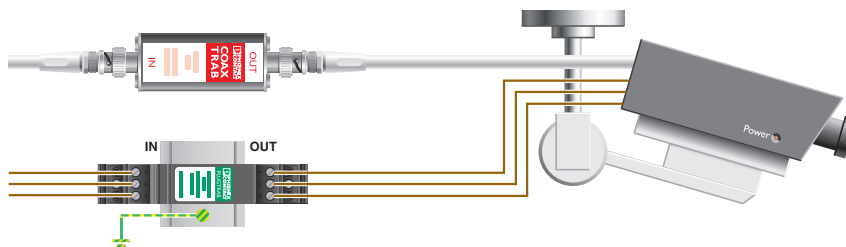


The figure shows the complete module consisting of a base element and connector

Application drawing



Application drawing



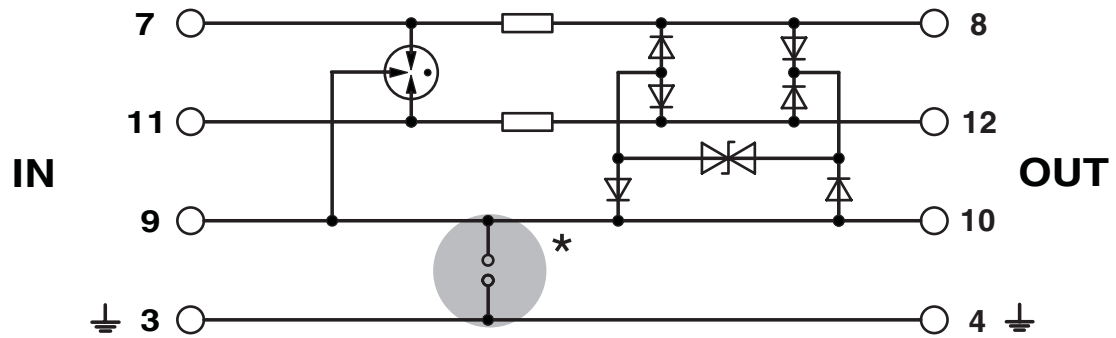
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Circuit diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/gb/products/2858043>



DNV GL

Approval ID: TAE00001N6



UL Listed

Approval ID: FILE E 138168

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27171503 |
| ECLASS-15.0 | 27171503 |

ETIM

| | |
|----------|----------|
| ETIM 9.0 | EC000943 |
|----------|----------|

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 | 8277daf1-791e-40fb-b319-72e82ba03cdf |

EF3.0 Climate Change

| | |
|---------|---------------|
| CO2e kg | 0.558 kg CO2e |
|---------|---------------|

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