

PT 5-HF-12 DC-ST - Surge protection plug



2838775

<https://www.phoenixcontact.com/in/products/2838775>

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Protective plug PT with HF protective circuit for 4 signal wires. Nominal voltage: 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 | 2838775 |
| Packing unit | 10 pc |
| Minimum order quantity | 1 pc |
| Sales Key | CL3 |
| Product Key | CL3121 |
| Catalog Page | Page 173 (C-4-2019) |
| GTIN | 4017918480646 |
| Weight per Piece (including packing) | 26.593 g |
| Weight per Piece (excluding packing) | 25.6 g |
| Customs tariff number | 85363010 |
| Country of origin | DE |

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Technical Data

Notes

General

| | |
|------|--|
| Note | Technical data is valid in association with the following specified base elements: |
| | PT 2X2+F-BE 2839224 |
| | PT 2X2-BE 2839208 |

Product properties

| | |
|--|---|
| IEC test classification | C1 |
| | C2 |
| | C3 |
| | D1 |
| Type | Male |
| Product type | Surge protection for information technology |
| Product family | PLUGTRAB PT |
| Number of positions | 5 |
| Arrester can be tested with CHECKMASTER from software version: | From SW rev. 1.10 |
| Wire pairs per module | 2 |

Insulation characteristics

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

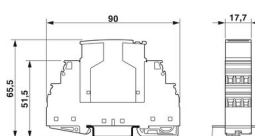
Electrical properties

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

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| | |
|------------------------|---------|
| Height | 45 mm |
| Depth | 52 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 | jet black RAL 9005 |
| Flammability rating according to UL 94 | V-0 |
| Housing material | PA 6.6 |

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 voltage U_C | 14 V DC |
| | 9.8 V AC |
| Rated current | 450 mA (45 °C) |
| Operating effective current I_C at U_C | $\leq 5 \mu\text{A}$ |
| Residual current I_{PE} | $\leq 5 \mu\text{A}$ (with PT 2X2-BE) |
| | $\leq 1 \mu\text{A}$ (with PT 2X2+F-BE) |
| Nominal discharge current I_n (8/20) μs (line-line) | 10 kA |
| Nominal discharge surge current I_n (8/20) μs (Core-Earth) | 20 kA (in total) |
| 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) | 20 kA (in total) |
| 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 2X2-BE) |
| | $\leq 700 \text{ V}$ (with PT 2X2+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 | $\leq 25 \text{ V}$ (with PT 2X2-BE) |
| | $\leq 40 \text{ V}$ (with PT 2X2+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 2X2-BE) |
| Residual voltage at I_n (line-signalground) | $\leq 25 \text{ V}$ (with PT 2X2-BE) |
| Residual voltage with I_{an} (10/1000) μs (line-line) | $\leq 25 \text{ V}$ |
| Residual voltage with I_{an} (10/1000) μs (line-signalground) | $\leq 25 \text{ V}$ |
| | $\leq 80 \text{ V}$ (C1 - 1 kV / 500 A) |

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| | |
|---|---|
| Voltage protection level U_p (line-line) | ≤ 100 V (C2 - 10 kV / 5 kA) |
| | ≤ 50 V (C3 - 25 A) |
| | ≤ 80 V (6 kV / 3 kA) |
| Voltage protection level U_p (line-earth) | ≤ 85 V (C1 - 1 kV / 500 A with PT 2X2-BE) |
| | ≤ 140 V (C2 - 10 kV / 5 kA with PT 2X2-BE) |
| | ≤ 100 V (6 kV / 3 kA with PT 2X2-BE) |
| | ≤ 50 V (C3 - 25 A with PT 2X2-BE) |
| Voltage protection level U_p (line-signalground) | ≤ 50 V (C3 - 25 A with PT 2X2-BE) |
| | ≤ 140 V (C2 - 10 kV / 5 kA with PT 2X2-BE) |
| Voltage protection level U_p static (line-line) | ≤ 25 V (C2 - 10 kV / 5 kA) |
| | ≤ 27 V (C3 - 25 A) |
| Voltage protection level U_p static (line-earth) | ≤ 45 V (C2 - 10 kV / 5 kA with PT 2X2-BE) |
| | ≤ 27 V (C3 - 25 A with PT 2X2-BE) |
| Voltage protection level U_p static (line-signalground) | ≤ 25 V (C2 - 10 kV / 5 kA with PT 2X2-BE) |
| | ≤ 27 V (C3 - 25 A) |
| Response time t_A | ≤ 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 $\Omega \pm 10$ % |
| Surge protection fault message | none |
| 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 |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Altitude | ≤ 4000 m (amsl (above mean sea level)) |

Approvals

Conformity/Approvals

| | |
|------------------|--|
| UL, USA / Canada | Class I, Div. 2, Groups A, B, C, D T4A |
|------------------|--|

Standards and regulations

| | |
|--------------------------|--------------|
| Standards/specifications | EN 61643-21 |
| Standards/specifications | IEC 61643-21 |

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Mounting

| Mounting type |
|---------------|
|---------------|

| |
|-----------------|
| on base element |
|-----------------|

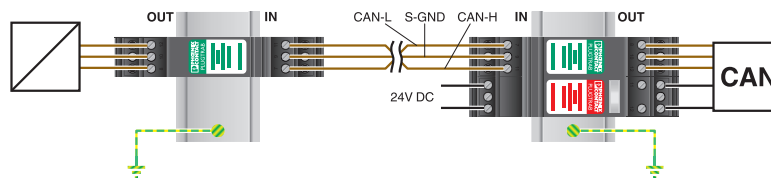
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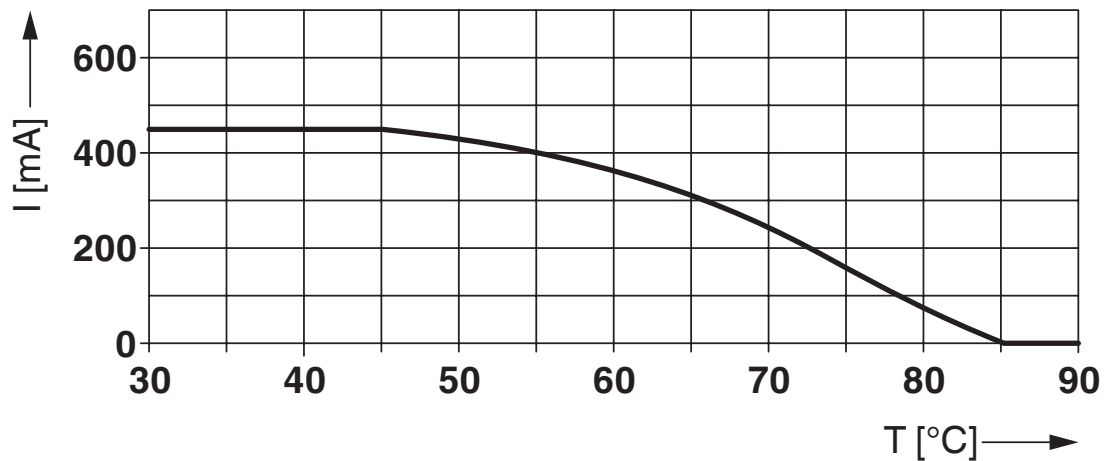
<https://www.phoenixcontact.com/in/products/2838775>

Drawings

Application drawing

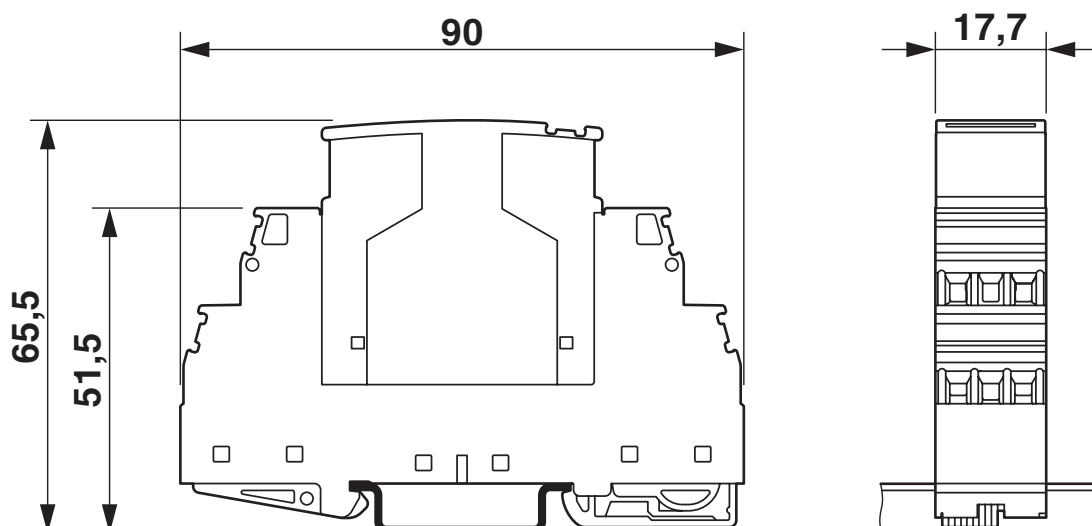


Diagram



The figure shows the derating curve in conjunction with PT 2X2-BE or PT 2X2+F-BE

Dimensional drawing



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

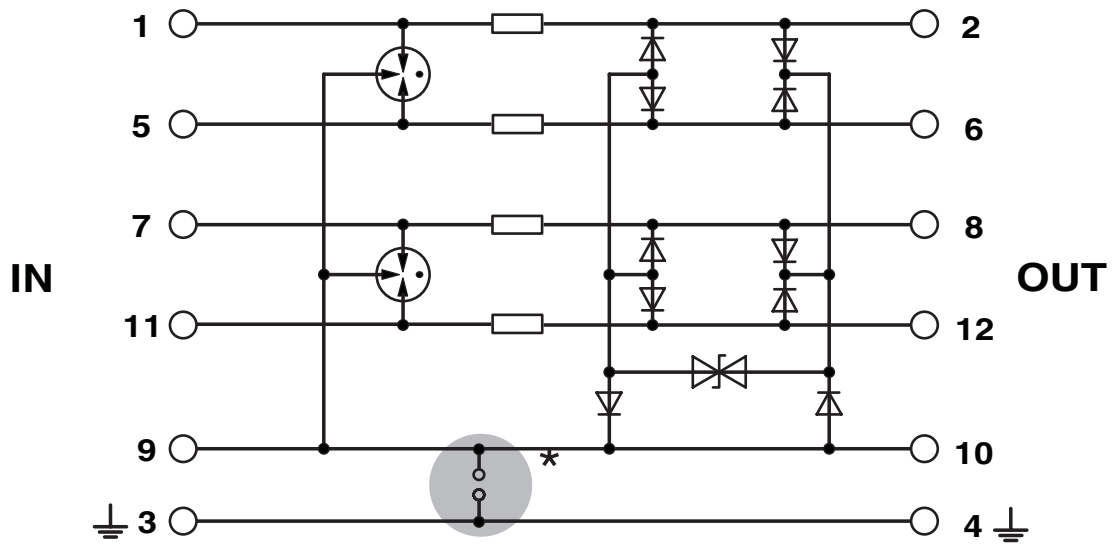
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Circuit diagram



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Approvals



EAC

Approval ID: EAC-Zulassung



DNV GL

Approval ID: TAE00001N6



EAC

Approval ID: RU C-DE: *09.B.00169



UL Listed

Approval ID: FILE E 138168

| | Nominal Voltage U_N | Nominal Current I_N | Cross Section AWG | Cross Section mm^2 |
|--|-----------------------|-----------------------|-------------------|----------------------|
| | 12 V | 0.45 A | - | - |



cUL Listed

Approval ID: FILE E 333250



UL Listed

Approval ID: FILE E 333250

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Classifications

ECLASS

ECLASS-11.0

27130807

ETIM

ETIM 8.0

EC000943

UNSPSC

UNSPSC 21.0

39121600

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Environmental Product Compliance

| | |
|------------|--|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally Friendly Use Period = 50 years |
| | For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads" |

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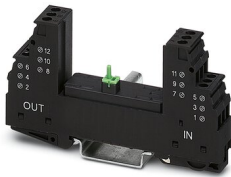
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Mandatory Accessories

PT 2X2-BE - Surge protection base-element

2839208

<https://www.phoenixcontact.com/in/products/2839208>

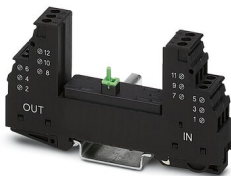


Base element for protective plug PT with protective circuit for two 2-wire floating signal circuit, bridge between the connections 3-4 (GND) and 9-10, for mounting on NS 35/7.5 and NS 35/15, housing width: 17.5 mm

PT 2X2+F-BE - Surge protection base-element

2839224

<https://www.phoenixcontact.com/in/products/2839224>



Base element for protective plug PT with protective circuit for two 2-wire floating signal circuit, gas-filled surge arrester between the connections 3-4 (GND) and 9-10, for mounting on NS 35/7.5 and NS 35/15, housing width: 17.5 mm

Accessories

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X-PEN 0,35 - Marker pen

0811228

<https://www.phoenixcontact.com/in/products/0811228>



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

ZBF 5:UNBEDRUCKT - Zack Marker strip, flat

0808642

<https://www.phoenixcontact.com/in/products/0808642>



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.1 x 5.2 mm, Number of individual labels: 10

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

0808668

<https://www.phoenixcontact.com/in/products/0808668>



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 1000

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

0808671

<https://www.phoenixcontact.com/in/products/0808671>



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 491 ... 500, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

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

0810821

<https://www.phoenixcontact.com/in/products/0810821>



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: consecutive even numbers 2 ... 20, 22 ... 40, etc. up to 82 ... 100, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

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

0810863

<https://www.phoenixcontact.com/in/products/0810863>



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: Odd numbers 1 - 19, 21 - 39, etc. up to 81 - 99, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

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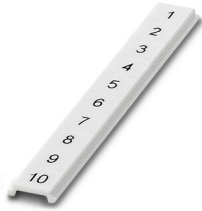
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ZBF 5,QR:FORTL.ZAHLEN - Zack Marker strip, flat

0808697

<https://www.phoenixcontact.com/in/products/0808697>



Zack Marker strip, flat, Strip, white, labeled, Printed vertically: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... 100, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

ZBN 18:UNBEDRUCKT - Zack marker strip

2809128

<https://www.phoenixcontact.com/in/products/2809128>



Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

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SSA 3-6 - Shield connection

2839295

<https://www.phoenixcontact.com/in/products/2839295>

Shield fast connection for 3 ... 6 mm cable diameter. Potential connecting cable:
200 mm, 1 mm², color: black



SSA 5-10 - Shield connection

2839512

<https://www.phoenixcontact.com/in/products/2839512>

Shield fast connection for 5 ... 10 mm cable diameter. Potential connecting cable:
200 mm, 1 mm², color: black



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