

TTC-6P-1X2-M-24DC-UT-I - Surge protection device



2906738

<https://www.phoenixcontact.com/us/products/2906738>

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Surge protection, consisting of protective plug and base element, with integrated status indicator and disconnect knife for a 2-wire floating signal circuit, e.g., 0(4) ... 20 mA current loop, Ex e approval for zone 2, HART-compatible.

Your advantages

- Space-saving and cost-saving with a narrow overall width of just 6 mm
- Continuous monitoring of protective devices, plus mechanical status indicator with optional remote signaling
- Finding the right product for all possible requirements in MCR applications is easy, thanks to the complete range of products with customized features
- Easy testing and documentation with CHECKMASTER 2 with pluggable protective modules
- The signal is not influenced during maintenance work, thanks to the impedance-neutral insertion and removal of protective plugs

Commercial data

| | |
|--------------------------------------|---------------------|
| Item number | 2906738 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | CL23 |
| Product key | CL2161 |
| Catalog page | Page 116 (C-4-2019) |
| GTIN | 4055626134703 |
| Weight per piece (including packing) | 57 g |
| Weight per piece (excluding packing) | 54.8 g |
| Customs tariff number | 85363010 |
| Country of origin | DE |

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Technical data

Product properties

| | |
|-------------------------|-----------------------------------------|
| IEC test classification | C1 |
| | C2 |
| | C3 |
| | D1 |
| Type | DIN rail module, two-section, divisible |
| Product type | Surge protection for MCR technology |
| Product family | TERMITRAB complete |
| Wire pairs per module | 1 |

Insulation characteristics

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

Electrical properties

| | |
|-----------------------|---------|
| Nominal voltage U_N | 24 V DC |
|-----------------------|---------|

Connection data

| | |
|----------------------------------|---------------------------------------------|
| Connection method | Screw connection |
| Screw thread | M3 |
| Tightening torque | 0.5 Nm ... 0.6 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 |

Ex data

| | |
|---------------------------------|------------------------------------------|
| Maximum input current | 600 mA (T4 / ≤ 30 °C) |
| | 500 mA (T4 / > 30 °C ... ≤ 50 °C) |
| | 400 mA (T4 / > 50 °C ... ≤ 70 °C) |
| Maximum input voltage | 30 V DC |
| Altitude | ≤ 2000 m (amsl) |
| Ambient temperature (operation) | -40 °C ... 70 °C (T4) |

Dimensions

| | |
|---------------------|--------------------------------|
| Dimensional drawing | |
| Width | 6.2 mm +0.1 mm |
| Height | 105.8 mm |
| Depth | 100 mm (incl. DIN rail 7.5 mm) |

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Material specifications

| | |
|----------------------------------------|-----|
| Flammability rating according to UL 94 | V-0 |
| Insulating material | PBT |
| Housing material | PBT |

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 | 30 V DC |
| | 21 V AC |
| Rated current | 600 mA (56 °C) |
| Operating effective current I_C at U_C | $\leq 5 \mu\text{A}$ |
| Residual current I_{PE} | $\leq 1 \mu\text{A}$ |
| Nominal discharge current I_n (8/20) μs (line-line) | 5 kA |
| Nominal discharge current I_n (8/20) μs (line-ground) | 5 kA |
| Pulse discharge current I_{imp} (10/350) μs (line-line) | 0.5 kA |
| Pulse discharge current I_{imp} (10/350) μs (line-earth) | 0.5 kA |
| Total discharge current I_{total} (8/20) μs | 10 kA |
| Voltage protection level U_p (line-line) | $\leq 200 \text{ V}$ (C1 - 1 kV / 500 A) |
| | $\leq 320 \text{ V}$ (C2 - 10 kV / 5 kA) |
| | $\leq 50 \text{ V}$ (C3 - 25 A) |
| | $\leq 55 \text{ V}$ (C3 - 100 A) |
| Voltage protection level U_p (line-earth) | $\leq 750 \text{ V}$ (C1 - 1 kV / 500 A) |
| | $\leq 750 \text{ V}$ (C2 - 10 kV / 5 kA) |
| | $\leq 700 \text{ V}$ (C3 - 25 A) |
| | $\leq 750 \text{ V}$ (C3 - 100 A) |
| Voltage protection level U_p static (line-line) | $\leq 50 \text{ V}$ (C1 - 1 kV / 500 A) |
| | $\leq 120 \text{ V}$ (C2 - 10 kV / 5 kA) |
| Voltage protection level U_p static (line-earth) | $\leq 750 \text{ V}$ (C1 - 1 kV / 500 A) |
| | $\leq 750 \text{ V}$ (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. 0.3 dB ($\leq 250 \text{ kHz}$ / 150 Ω) |
| Cut-off frequency f_g (3 dB), sym. in 150 Ω system | typ. 940 kHz |
| Capacity (Core-Core) | typ. 2.2 nF |
| Resistance per path | 1.65 Ω $\pm 20 \%$ |
| Surge protection fault message | optical |
| Max. required back-up fuse | 630 mA (FF) |
| | C1 - 1 kV / 500 A |

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| | |
|---------------------------------|-------------------|
| Impulse durability (line-line) | C2 - 10 kV / 5 kA |
| | C3 - 100 A |
| Impulse durability (line-earth) | C1 - 1 kV / 500 A |
| | C2 - 10 kV / 5 kA |
| | C3 - 100 A |
| | D1 - 500 A |
| Pulse reset time (line-line) | ≤ 700 ms |
| Pulse reset time (line-earth) | ≤ 1500 ms |

Additional technical data

| | |
|------------------------------------------------------------------------|---------------------|
| Max. total discharge current $I_{\text{total max}} (8/20) \mu\text{s}$ | 20 kA (1x - non Ex) |
|------------------------------------------------------------------------|---------------------|

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) |
| Permissible humidity (operation) | 5 % ... 95 % |

Standards and regulations

| | |
|--------------------------|-------------------------------------------------------|
| Standards/specifications | IEC 61643-21 |
| Note | 2000 + corrigendum 2001 + A1:2008, modified + A2:2012 |

EN 61643-21

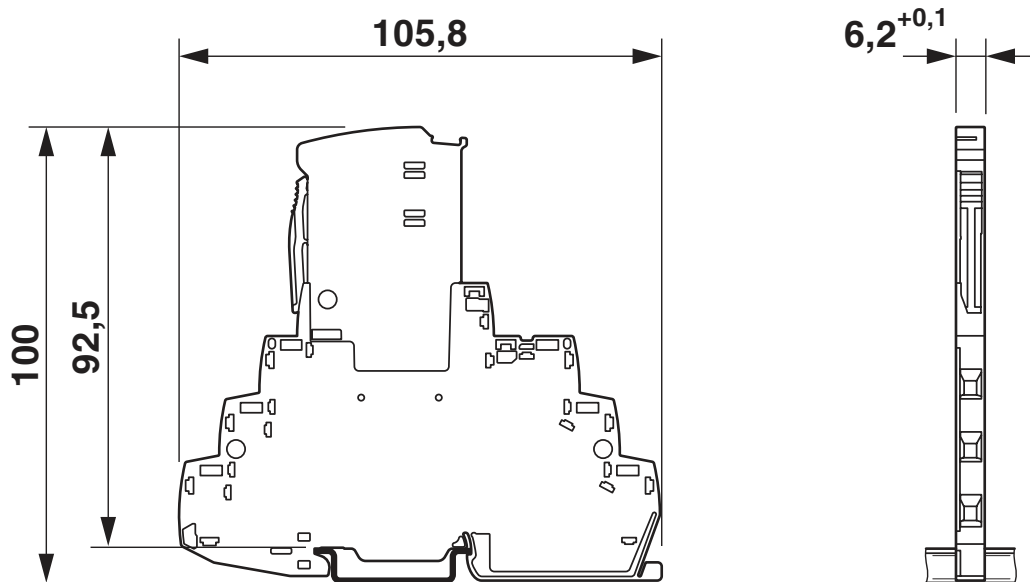
| | |
|--------------------------|--------------------------|
| Standards/specifications | EN 61643-21 |
| Note | 2001 + A1:2009 + A2:2013 |
| Standards/specifications | IEC 60079-0 |
| Note | 2017 |
| Standards/specifications | IEC 60079-7 |
| Note | 2017 |
| Standards/specifications | EN IEC 60079-0 |
| Note | 2018 |
| Standards/specifications | EN IEC 60079-7 |
| Note | 2015 + A1:2018 |

Mounting

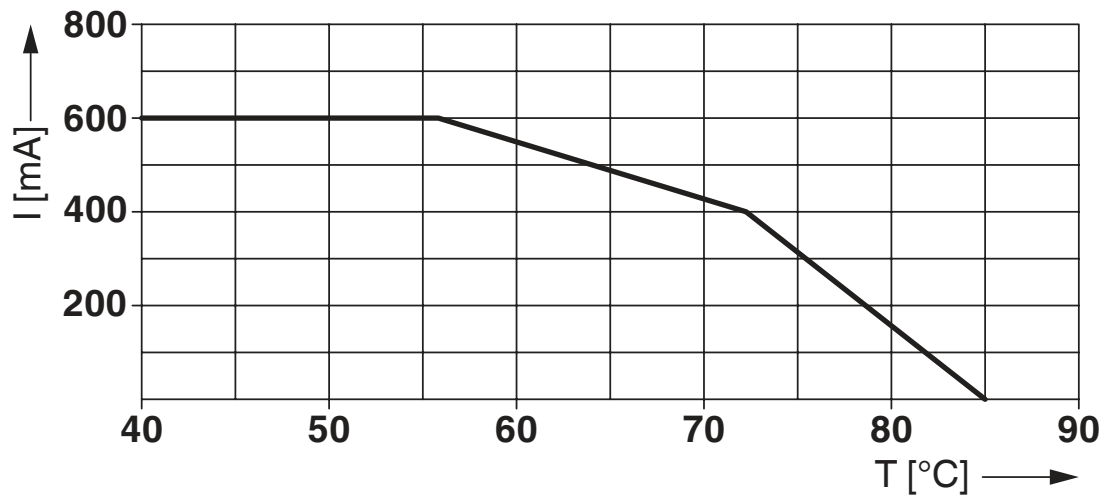
| | |
|---------------|--------------------------|
| Mounting type | DIN rail: TH 35 - 7.5 mm |
|---------------|--------------------------|

Drawings

Dimensional drawing



Diagram



Diagram

Derating for Ex-areas (Zone 2, EX ec)

| ϑ [°C] | I [mA] |
|------------------------------------------------------|--------|
| $\leq 30^{\circ}\text{C}$ | 600 mA |
| $> 30^{\circ}\text{C} \dots \leq 50^{\circ}\text{C}$ | 500 mA |
| $> 50^{\circ}\text{C} \dots \leq 70^{\circ}\text{C}$ | 400 mA |

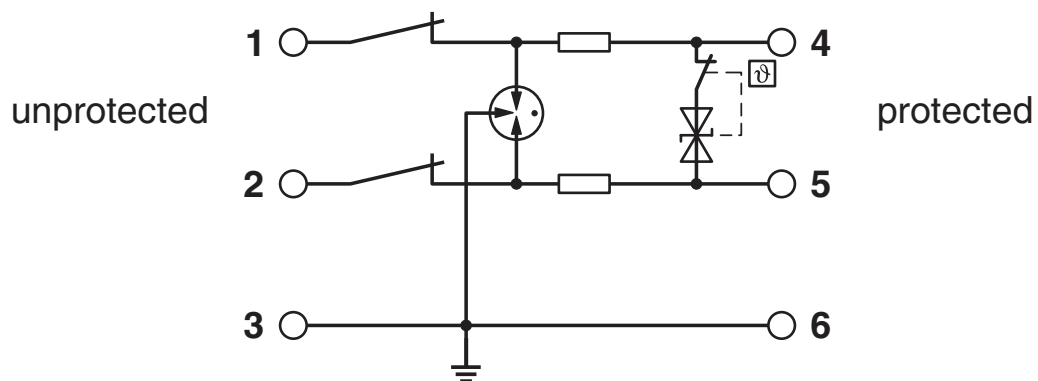
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Circuit diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2906738>



CSA

Approval ID: 70136717



DNV GL

Approval ID: TAE000027G



UL Listed

Approval ID: FILE E 138168



CSAus

Approval ID: 70136717

UAE-RoHS

Approval ID: 22-06-16191

UAE-RoHS

Approval ID: 22-06-16192

UAE-RoHS

Approval ID: 22-06-16781

UAE-RoHS

Approval ID: 22-06-16783



IECEX

Approval ID: IECEX BVS 21.0057X



ATEX

Approval ID: BVS 21 ATEX E 052 X



CCC

Approval ID: 2022122304116080

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cCSAus

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-11.0 | 27130807 |
| ECLASS-13.0 | 27171501 |

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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Accessories

X-PEN 0,35 - Marker pen

0811228

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



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

ZBF 6 CUS - Zack Marker strip, flat

0825027

<https://www.phoenixcontact.com/us/products/0825027>



Zack Marker strip, flat, Strip, can be ordered: Strip, white, labeled according to customer specifications, mounting type: snap into flat marker groove, for terminal block width: 6.2 mm, lettering field size: 5.15 x 6.15 mm, Number of individual labels: 10

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ZBF 6:UNBEDRUCKT - Zack Marker strip, flat

0808710

<https://www.phoenixcontact.com/us/products/0808710>



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 6.2 mm, lettering field size: 5.15 x 6.15 mm, Number of individual labels: 10

ZBF 6/WH-100:UNBEDRUCKT - Zack Marker strip, flat

0808736

<https://www.phoenixcontact.com/us/products/0808736>



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 6.2 mm, lettering field size: 5.15 x 6.15 mm, Number of individual labels: 1000

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ZBF 6,QR:FORTL.ZAHLEN - Zack Marker strip, flat

0808765

<https://www.phoenixcontact.com/us/products/0808765>



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: 6.2 mm, lettering field size: 5.15 x 6.15 mm, Number of individual labels: 10

CLIPFIX 35-5 - End clamp

3022276

<https://www.phoenixcontact.com/us/products/3022276>



Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, with parking option for FBS...5, FBS...6, KSS 5, KSS 6, width: 5.15 mm, color: gray

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TTC-6-FMRS-UT - Remote signaling set

2907810

<https://www.phoenixcontact.com/us/products/2907810>



Module set for the optical monitoring and floating remote signaling of adjacent surge protective devices in the TERMITRAB complete or CLIXTRAB product family. Suitable for directly grounded DIN rails.

TTC-6-FC-UT - Fuse holder

1054762

<https://www.phoenixcontact.com/us/products/1054762>



Fuse carrier for surge protective devices of the TERMITRAB complete product range with screw connection technology. Multi-level connection on TTC-6 housings possible. For conventional 5x20 mm miniature fuses.

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SSA 3-6 - Shield connection

2839295

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

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



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TTC-6P-1X2-24DC-I-P - Surge protection plug

2907840

<https://www.phoenixcontact.com/us/products/2907840>



Surge protection plug with integrated status indicator on the module for a 2-wire floating signal circuit. Nominal voltage: 24 V DC

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