

## Surge protection device - TTC-6P-2X1-M-EX-24DC-UT-I - 2906825

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Surge protection, consisting of protective plug and base element, with integrated status indicator and disconnect knife for a 2-wire Ex i signal circuit with common reference potential, e.g., Digital IN/OUT.

### 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



### Key Commercial Data

|              |                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------|
| Packing unit | 1 pc                                                                                                    |
| GTIN         | <br>4 055626 135878 |
| GTIN         | 4055626135878                                                                                           |

### Technical data

#### Dimensions

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

#### Ambient conditions

|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Ambient temperature (operation)         | -40 °C ... 85 °C                       |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C                       |
| Permissible humidity (operation)        | 5 % ... 95 %                           |
| Altitude                                | ≤ 2000 m (amsl (above mean sea level)) |
| Degree of protection                    | IP20                                   |

#### General

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## Technical data

### General

|                                        |                                                                                    |
|----------------------------------------|------------------------------------------------------------------------------------|
| Housing material                       | PBT                                                                                |
| Flammability rating according to UL 94 | V-0                                                                                |
| Color                                  | sky blue RAL 5015                                                                  |
| Mounting type                          | DIN rail: TH 35 - 7.5 mm                                                           |
| Type                                   | DIN rail module, two-section, divisible                                            |
| Direction of action                    | Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground |

### Protective circuit

|                                                                 |                                           |
|-----------------------------------------------------------------|-------------------------------------------|
| IEC test classification                                         | C1                                        |
|                                                                 | C2                                        |
|                                                                 | C3                                        |
|                                                                 | D1                                        |
| Nominal voltage $U_N$                                           | 24 V DC                                   |
| Maximum continuous voltage $U_C$                                | 30 V DC                                   |
| Rated current                                                   | 600 mA (40 °C)                            |
| Operating effective current $I_C$ at $U_C$                      | $\leq 5 \mu A$                            |
| Residual current $I_{PE}$                                       | $\leq 10 \mu A$                           |
| Nominal discharge current $I_n$ (8/20) $\mu s$ (line-earth)     | 5 kA                                      |
| Pulse discharge current $I_{imp}$ (10/350) $\mu s$ (line-earth) | 0.5 kA                                    |
| Total discharge current $I_{total}$ (8/20) $\mu s$              | 10 kA                                     |
| Voltage protection level $U_p$ (line-earth)                     | $\leq 140 V$ (C1 - 1 kV/500 A)            |
|                                                                 | $\leq 190 V$ (C2 - 10 kV / 5 kA)          |
|                                                                 | $\leq 50 V$ (C3 - 100 A)                  |
| Voltage protection level $U_p$ static (line-earth)              | $\leq 55 V$ (C1 - 1 kV/500 A)             |
|                                                                 | $\leq 120 V$ (C2 - 10 kV / 5 kA)          |
| Response time $t_A$ (line-earth)                                | $\leq 1 ns$                               |
| Input attenuation aE, asym.                                     | typ. 0.3 dB ( $\leq 270 kHz/150 \Omega$ ) |
| Cut-off frequency $f_g$ (3 dB), asym. (PE) in 150 Ohm system    | typ. 960 kHz                              |
| Capacity (line-earth)                                           | typ. 2.2 nF                               |
| Resistance per path                                             | 1.65 $\Omega \pm 20 \%$                   |
| Surge protection fault message                                  | optical                                   |
| Max. required back-up fuse                                      | 630 mA (FF)                               |
| Impulse durability (line-earth)                                 | C1 - 1 kV / 500 A                         |
|                                                                 | C2 - 10 kV / 5 kA                         |
|                                                                 | C3 - 100 A                                |
|                                                                 | D1 - 500 A                                |
| Pulse reset time (line-earth)                                   | $\leq 300 ms$                             |

### Connection data

|                   |                  |
|-------------------|------------------|
| Connection method | Screw connection |
| Screw thread      | M3               |

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## Technical data

### Connection data

|                                  |                     |
|----------------------------------|---------------------|
| Tightening torque                | 0.5 Nm ... 0.6 Nm   |
| Stripping length                 | 8 mm                |
| Conductor cross section flexible | 0.2 mm² ... 2.5 mm² |
| Conductor cross section solid    | 0.2 mm² ... 4 mm²   |
| Conductor cross section AWG      | 24 ... 12           |

### Standards and Regulations

|                          |                                                                    |
|--------------------------|--------------------------------------------------------------------|
| Standards/specifications | EN 60079-0 2012 + A11:2013                                         |
|                          | EN 60079-11 2012                                                   |
|                          | EN 61643-21 2001 + A1:2009 + A2:2013                               |
|                          | IEC 60079-0 2011 (modified) + corrigendum 2012 + corrigendum 2013  |
|                          | IEC 60079-11 2008                                                  |
|                          | IEC 61643-21 2000 + corrigendum 2001 + A1:2008, modified + A2:2012 |

### General

|                                 |                                                |
|---------------------------------|------------------------------------------------|
| Maximum inner capacitance $C_i$ | negligible                                     |
| Max. internal inductance $L_i$  | negligible                                     |
| Max. input current $I_i$        | 400 mA ( $T_4 / \leq 50^\circ\text{C}$ )       |
|                                 | 350 mA ( $T_6 / \leq 35^\circ\text{C}$ )       |
| Max. input voltage $U_i$        | 30 V DC                                        |
| Ambient temperature (operation) | -40 °C ... 35 °C ( $T_6 / 85^\circ\text{C}$ )  |
|                                 | -40 °C ... 50 °C ( $T_4 / 135^\circ\text{C}$ ) |

### Conformity / approvals

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

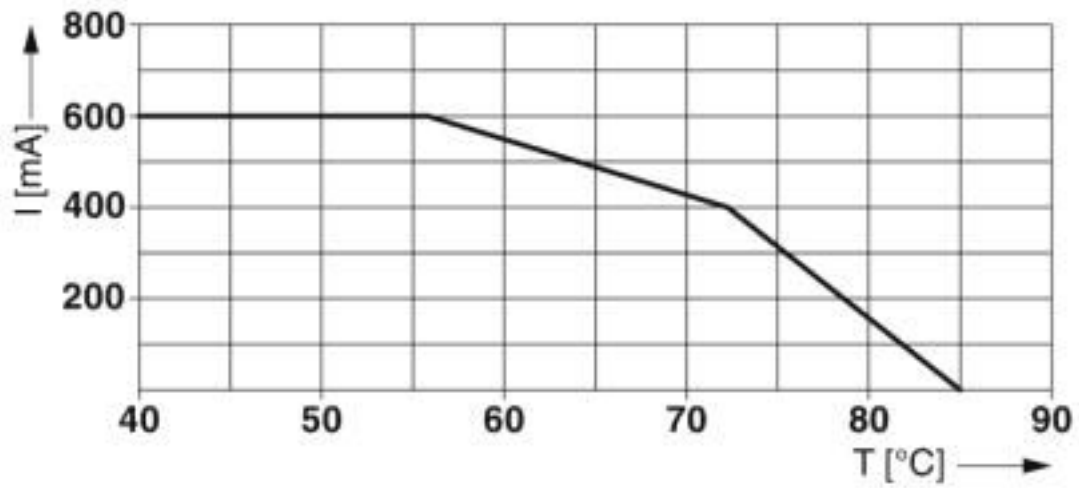
### Environmental Product Compliance

|            |                                                                                                     |
|------------|-----------------------------------------------------------------------------------------------------|
| REACH SVHC | Lead 7439-92-1                                                                                      |
| China RoHS | Environmentally Friendly Use Period = 50 years                                                      |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

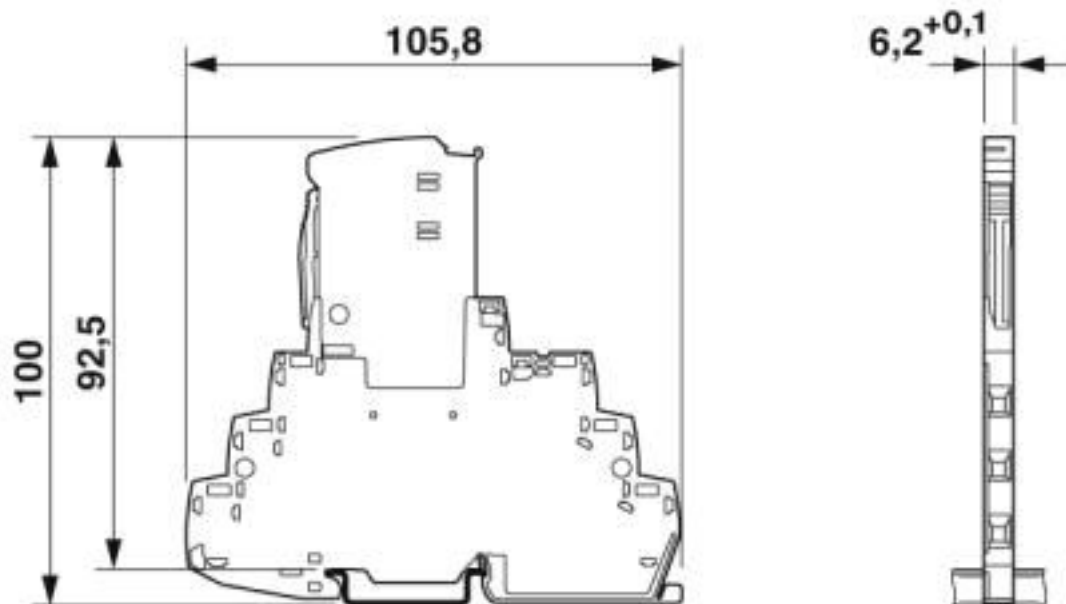
## Drawings

## Surge protection device - TTC-6P-2X1-M-EX-24DC-UT-I - 2906825

Diagram

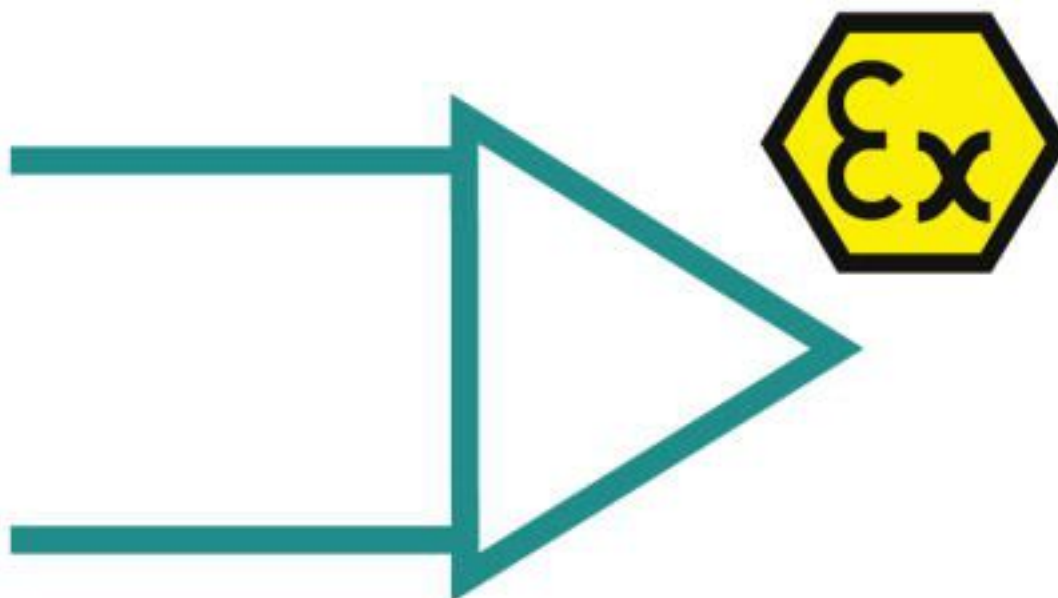


Dimensional drawing

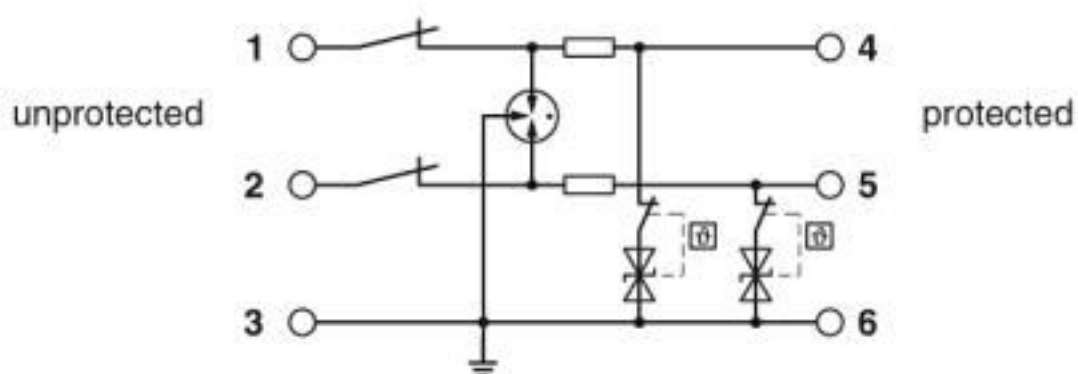


## Surge protection device - TTC-6P-2X1-M-EX-24DC-UT-I - 2906825

Pictogram



Circuit diagram



### Classifications

eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27130807 |
| eCl@ss 11.0   | 27130807 |
| eCl@ss 4.0    | 27140201 |
| eCl@ss 4.1    | 27130801 |
| eCl@ss 5.0    | 27130801 |
| eCl@ss 5.1    | 27130801 |
| eCl@ss 6.0    | 27130800 |
| eCl@ss 7.0    | 27130807 |
| eCl@ss 8.0    | 27130807 |
| eCl@ss 9.0    | 27130807 |

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### Classifications

#### ETIM

|          |          |
|----------|----------|
| ETIM 3.0 | EC000943 |
| ETIM 4.0 | EC000943 |
| ETIM 5.0 | EC000943 |
| ETIM 6.0 | EC000943 |
| ETIM 7.0 | EC000943 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30212010 |
| UNSPSC 7.0901 | 39121610 |
| UNSPSC 11     | 39121610 |
| UNSPSC 12.01  | 39121610 |
| UNSPSC 13.2   | 39121620 |
| UNSPSC 18.0   | 39121620 |
| UNSPSC 19.0   | 39121620 |
| UNSPSC 20.0   | 39121620 |
| UNSPSC 21.0   | 39121620 |

### Approvals

#### Approvals

##### Approvals

DNV GL / CSA / UL Listed / CSAus / cCSAus

##### Ex Approvals

IECEx / ATEX / UL Listed / cUL Listed / INMETRO / cULus Listed

#### Approval details

|           |                                                                                     |                                                                                                                                                       |               |
|-----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| DNV GL    |  | <a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>                                                                     | TAE000027G    |
| CSA       |  | <a href="http://www.csagroup.org/services-industries/product-listing/">http://www.csagroup.org/services-industries/product-listing/</a>               | 70136717      |
| UL Listed |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 138168 |

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### Approvals

|       |                                                                                   |                                                                                                                                         |          |
|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------|
| CSAus |  | <a href="http://www.csagroup.org/services-industries/product-listing/">http://www.csagroup.org/services-industries/product-listing/</a> | 70136717 |
|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------|

|        |                                                                                   |  |  |
|--------|-----------------------------------------------------------------------------------|--|--|
| cCSAus |  |  |  |
|--------|-----------------------------------------------------------------------------------|--|--|

### Accessories

#### Accessories

##### End block

End clamp - CLIPFIX 35-5 - 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

##### Labeled terminal marker

Zack Marker strip, flat - ZBF 6 CUS - 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

Zack Marker strip, flat - ZBF 6,QR:FORTL.ZAHLEN - 0808765



Zack Marker strip, flat, Strip, white, labeled, Printed vertically: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... 100, 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

##### Marker pen

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### Accessories

Marker pen - X-PEN 0,35 - 0811228



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

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### Terminal marking

Zack Marker strip, flat - ZBF 6:UNBEDRUCKT - 0808710



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, 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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Zack Marker strip, flat - ZBF 6/WH-100:UNBEDRUCKT - 0808736



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, 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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### Additional products

Remote signaling set - TTC-6-FMRS-UT - 2907810



Module set for the optical monitoring and floating remote signaling of neighboring surge protective devices of the TERMITRAB complete product range.

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Separating plate - TTC-EX-PP - 1011977



Partition plate for NS-35/7,5 DIN rails to ensure a clearance of 50 mm between the remote signaling module and surge protection in TTC-EX systems.

## Surge protection device - TTC-6P-2X1-M-EX-24DC-UT-I - 2906825

### Accessories

#### Shield connection - SSA 3-6 - 2839295



Shield fast connection for 3 ... 6 mm cable diameter. Potential connecting cable: 200 mm, 1 mm<sup>2</sup>, color: black

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#### Shield connection - SSA 5-10 - 2839512



Shield fast connection for 5 ... 10 mm cable diameter. Potential connecting cable: 200 mm, 1 mm<sup>2</sup>, color: black

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### Spare parts

#### Surge protection plug - TTC-6P-2X1-EX-24DC-I-P - 2907832



Surge protection plug with integrated status indicator for one 2-wire Ex i signal circuit with common reference potential. Nominal voltage: 24 V DC

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