

## Surge protection device - TTC-6P-2X1-48DC-UT-I - 2908203

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Surge protection, consisting of protective plug and base element, with integrated status indicator for two signal wires with common reference potential, e.g., Digital IN/OUT.

### Your advantages

- ✓ Space-saving installation due to the narrow overall width of 6.2 mm
- ✓ Signaling without additional auxiliary power, thanks to the mechanical status indicator
- ✓ Optional remote signaling module monitors up to 40 items, without additional wiring
- ✓ The signal is not influenced during maintenance work, thanks to the impedance-neutral insertion and removal of protective plugs
- ✓ Error-free replacement of protective plugs, thanks to coding
- ✓ Safe behavior in the event of overload, thanks to the integrated disconnect device
- ✓ Simple testing and documentation with CHECKMASTER 2, thanks to pluggable protective modules



### Key Commercial Data

|              |               |
|--------------|---------------|
| Packing unit | 1 pc          |
| GTIN         |               |
| GTIN         | 4055626282886 |

### 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                                | ≤ 4000 m (amsl (above mean sea level)) |

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## Technical data

### Ambient conditions

|                      |      |
|----------------------|------|
| Degree of protection | IP20 |
|----------------------|------|

### General

|                                        |                                                                                    |
|----------------------------------------|------------------------------------------------------------------------------------|
| Housing material                       | PBT                                                                                |
| Flammability rating according to UL 94 | V-0                                                                                |
| Color                                  | traffic grey A RAL 7042                                                            |
|                                        | light grey RAL 7035                                                                |
| 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 $U_N$                                           | 48 V DC                                       |
| Maximum continuous voltage $U_C$                                | 53 V DC                                       |
|                                                                 | 30 V AC                                       |
| Rated current                                                   | 220 mA DC (75 °C)                             |
|                                                                 | 600 mA AC (56 °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)                     | $\leq 110 V$ (C1 - 1 kV/500 A)                |
|                                                                 | $\leq 150 V$ (C2 - 10 kV / 5 kA)              |
|                                                                 | $\leq 80 V$ (C3 - 25 A)                       |
|                                                                 | $\leq 90 V$ (C3 - 50 A)                       |
| Voltage protection level $U_p$ static (line-earth)              | $\leq 105 V$ (C1 - 1 kV/500 A)                |
|                                                                 | $\leq 150 V$ (C2 - 10 kV / 5 kA)              |
| Response time $t_A$ (line-earth)                                | $\leq 1 ns$                                   |
| Input attenuation aE, asym.                                     | typ. 0.3 dB ( $\leq 480 kHz$ / 150 $\Omega$ ) |
| Cut-off frequency $f_g$ (3 dB), asym. (PE) in 150 Ohm system    | typ. 1.7 MHz                                  |
| Capacity (line-earth)                                           | typ. 1.2 nF                                   |
| Resistance per path                                             | 1.65 $\Omega \pm 20 \%$                       |
| Max. required back-up fuse                                      | 160 mA DC (FF)                                |
|                                                                 | 630 mA AC (FF)                                |
| Impulse durability (line-earth)                                 | C1 - 1 kV / 500 A                             |
|                                                                 | C2 - 10 kV / 5 kA                             |

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### Technical data

#### Protective circuit

|                               |            |
|-------------------------------|------------|
|                               | C3 - 57 A  |
|                               | D1 - 500 A |
| Pulse reset time (line-earth) | ≤ 600 ms   |

#### Additional technical data

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

#### Connection data

|                                  |                                             |
|----------------------------------|---------------------------------------------|
| Connection method                | Screw connection                            |
| Screw thread                     | M3                                          |
| Tightening torque                | 0.5 Nm ... 0.6 Nm                           |
| Stripping length                 | 8 mm                                        |
| Conductor cross section flexible | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross section solid    | 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>   |
| Conductor cross section AWG      | 24 ... 12                                   |

#### Standards and Regulations

|                          |                                                                    |
|--------------------------|--------------------------------------------------------------------|
| Standards/specifications | IEC 61643-21 2000 + corrigendum 2001 + A1:2008, modified + A2:2012 |
|                          | EN 61643-21 2001 + A1:2009 + A2:2013                               |

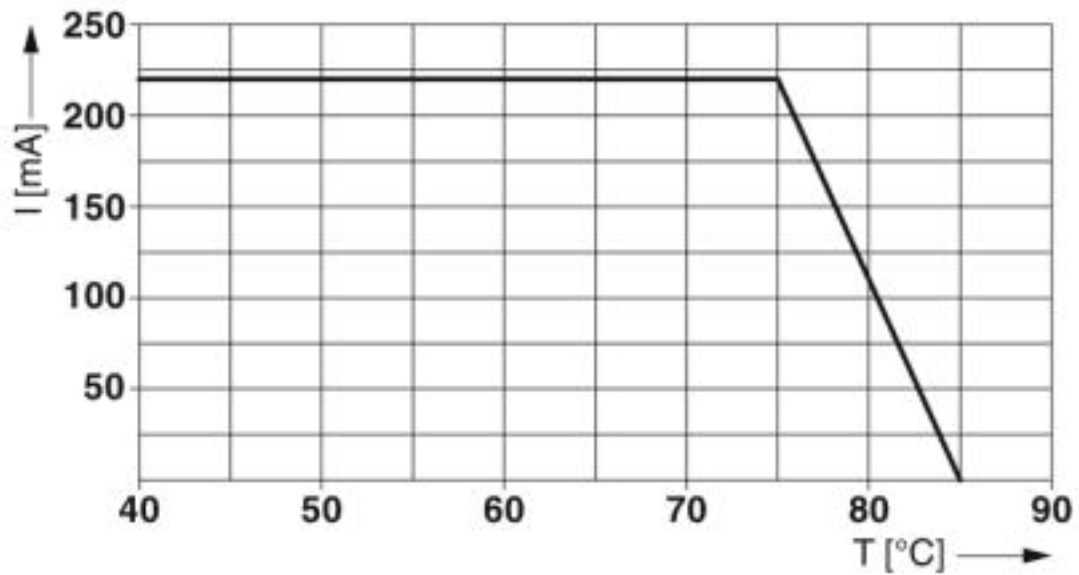
#### Environmental Product Compliance

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

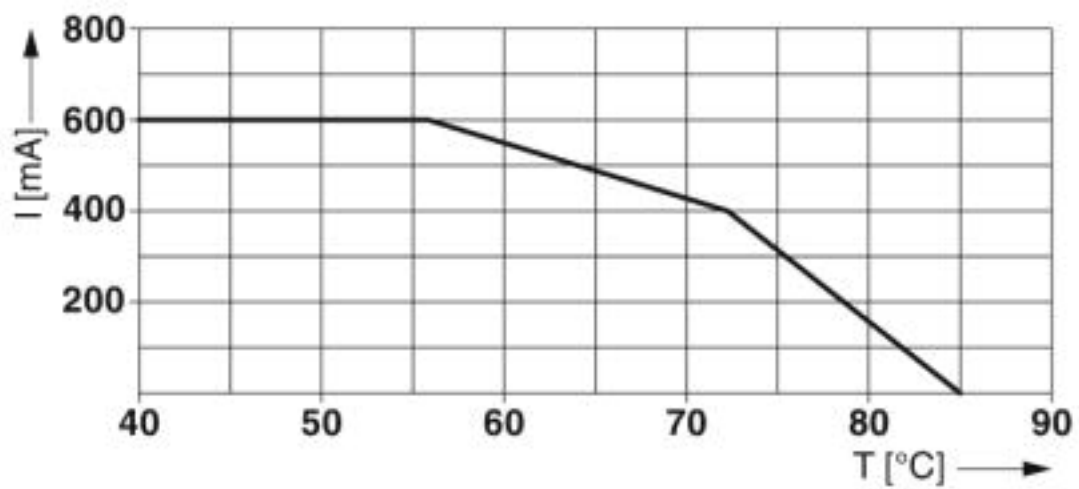
## Surge protection device - TTC-6P-2X1-48DC-UT-I - 2908203

Diagram



Derating curve at 55.2 V DC

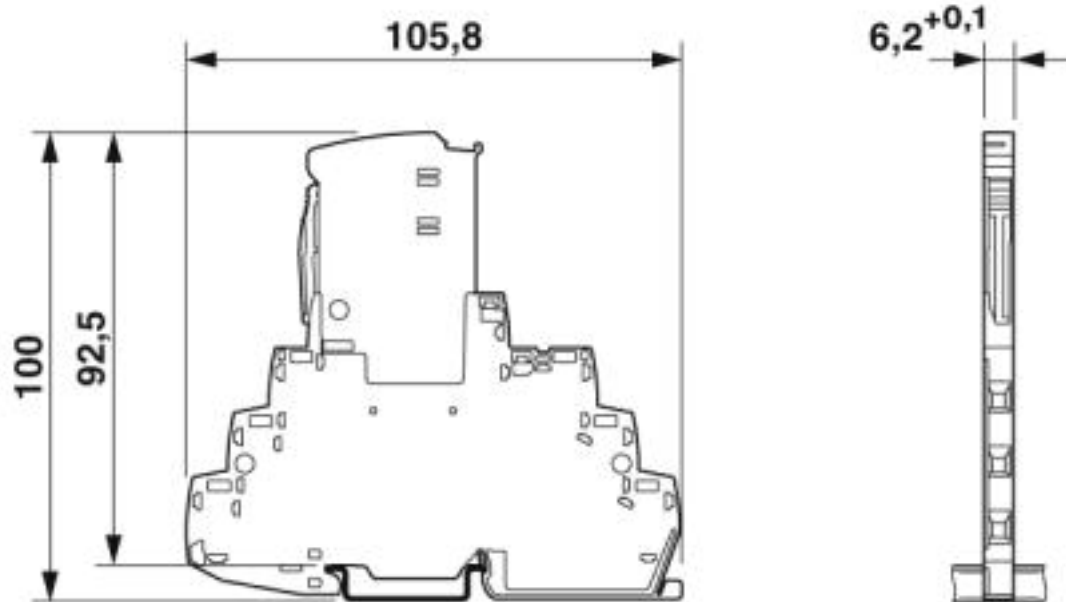
Diagram



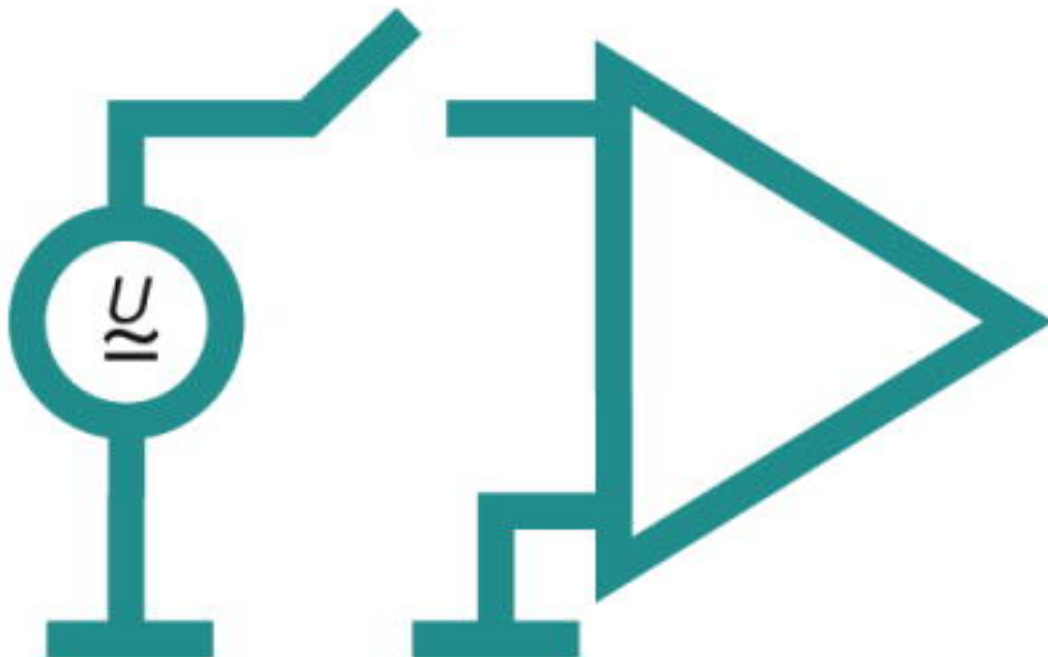
Derating curve at 30 V AC

## Surge protection device - TTC-6P-2X1-48DC-UT-I - 2908203

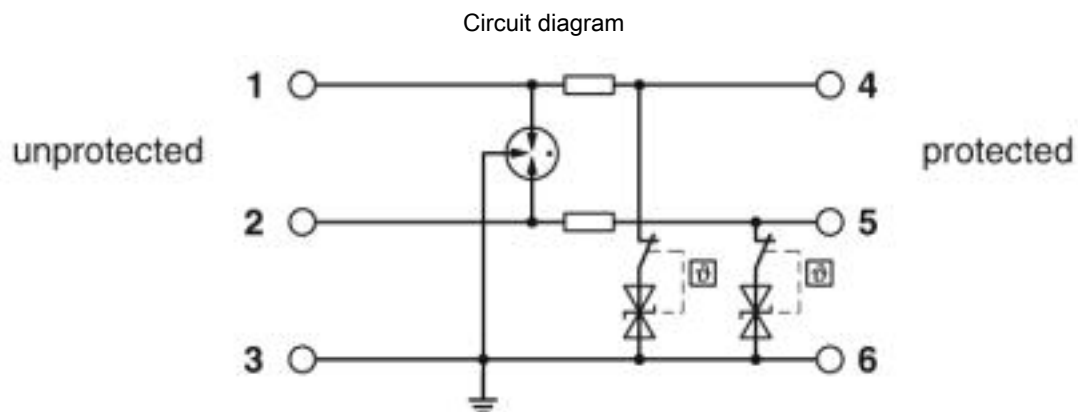
Dimensional drawing



Pictogram



## Surge protection device - TTC-6P-2X1-48DC-UT-I - 2908203



### Classifications

#### eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 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 |

#### 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 |

## Surge protection device - TTC-6P-2X1-48DC-UT-I - 2908203

### Approvals

#### Approvals

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#### Approvals

DNV GL / CSA / UL Listed / CSAus / cCSAus

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#### Ex Approvals

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#### 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 |
| 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

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### Accessories

#### 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

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

#### 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

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

#### Additional products

## Surge protection device - TTC-6P-2X1-48DC-UT-I - 2908203

### Accessories

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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Fuse holder - TTC-6-FC-UT - 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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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-2X1-48DC-I-P - 2907844



Surge protection plug with integrated status indicator on the module for two signal wires with a common reference potential. Nominal voltage: 48 V DC

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