

## Surge protection device - TTC-6P-1X2-48DC-UT-I - 2908194

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Surge protection, consisting of protective plug and base element, with integrated status indicator for a 2-wire floating signal circuit.

### 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 282695 |
| GTIN         | 4055626282695   |

### 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)) |
| Degree of protection                    | IP20                                   |

#### General

# Surge protection device - TTC-6P-1X2-48DC-UT-I - 2908194

## Technical data

### 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 $U_C$                                      | 55.2 V DC   |
|   | 30 V AC   |
| Rated current   | 160 mA DC (75 °C)                                   |
|   | 600 mA AC (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) $\mu\text{s}$ (line-line)      | 5 kA  |
| Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (line-earth)     | 5 kA  |
| Pulse discharge current $I_{imp}$ (10/350) $\mu\text{s}$ (line-line)  | 0.5 kA  |
| Pulse discharge current $I_{imp}$ (10/350) $\mu\text{s}$ (line-earth) | 0.5 kA  |
| Total discharge current $I_{total}$ (8/20) $\mu\text{s}$              | 10 kA   |
| Voltage protection level $U_p$ (line-line)                            | $\leq 180 \text{ V}$ (C1 - 1 kV/500 A)              |
|   | $\leq 400 \text{ V}$ (C2 - 10 kV / 5 kA)            |
|   | $\leq 85 \text{ V}$ (C3 - 25 A)                     |
|   | $\leq 90 \text{ V}$ (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)                     | $\leq 45 \text{ V}$ (C1 - 1 kV/500 A)               |
|   | $\leq 160 \text{ V}$ (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 ( $\leq 470 \text{ kHz} / 150 \Omega$ ) |

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## Technical data

### Protective circuit

|   |                          |
|---|--------------------------|
| Cut-off frequency $f_g$ (3 dB), sym. in 150 $\Omega$ system | typ. 1.8 MHz             |
| Capacity (line-line)  | typ. 1.1 nF              |
| Resistance per path   | 1.65 $\Omega$ $\pm$ 20 % |
| Surge protection fault message                              | optical                  |
| Max. required back-up fuse                                  | 160 mA DC (FF)           |
|   | 630 mA AC (FF)           |
| Impulse durability (line-line)                              | C1 - 1 kV / 500 A        |
|   | C2 - 10 kV / 5 kA        |
|   | C3 - 50 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)                                | $\leq$ 700 ms            |
| Pulse reset time (line-earth)                               | $\leq$ 1500 ms           |

### Additional technical data

|  |            |
|--|------------|
| Max. total discharge current $I_{total\ max}$ (8/20) $\mu$ 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" |

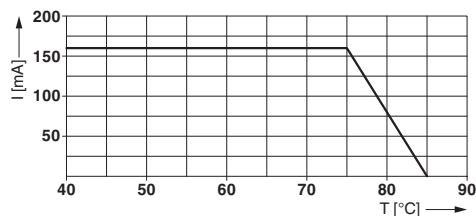
## Drawings

# Surge protection device - TTC-6P-1X2-48DC-UT-I - 2908194

Pictogram

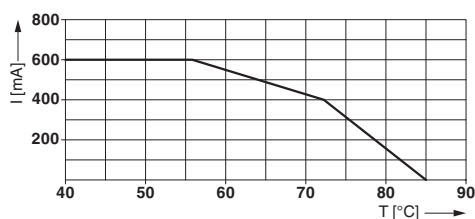


Diagram



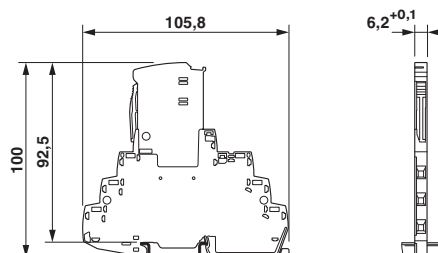
Derating curve at 55.2 V DC

Diagram

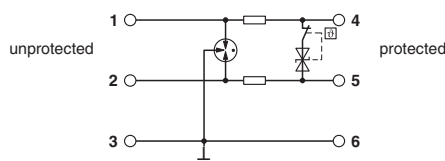


Derating curve at 30 V AC

Dimensional drawing



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 9.0    | 27130807 |

### ETIM

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

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## Classifications

### 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

### 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 |  |  |  |
|--------|--|--|--|

## Surge protection device - TTC-6P-1X2-48DC-UT-I - 2908194

### 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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### 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

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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

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### 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

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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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## Accessories

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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 adjacent surge protective devices in the TERMITRAB complete or CLIXTRAB product family. Suitable for directly grounded DIN rails.

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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 device - TTC-6P-1X2-48DC-UT-I - 2908194

### Accessories

Surge protection plug - TTC-6P-1X2-48DC-I-P - 2907841



Surge protection plug with integrated status indicator on the module for a 2-wire floating signal circuit. Nominal voltage: 48 V DC

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