

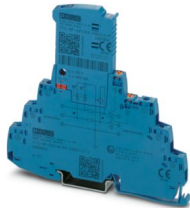
TTC-6P-2X1-M-EX-24DC-UT-I - Surge protection device



2906825

<https://www.phoenixcontact.com/be/products/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

Commercial data

| | |
|--------------------------------------|---------------------|
| Item number | 2906825 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | CL2163 |
| Product key | CL2163 |
| Catalog page | Page 157 (C-4-2019) |
| GTIN | 4055626135878 |
| Weight per piece (including packing) | 66,9 g |
| Weight per piece (excluding packing) | 62,6 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 |

Insulation characteristics

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

Electrical properties

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

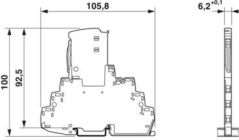
Connection data

| | |
|----------------------------------|---|
| 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 inner capacitance C_i | negligible |
| Max. internal inductance L_i | negligible |
| Max. input current I_i | 400 mA (T4 / -40 °C ... +50 °C) |
| | 250 mA (T4 / -40 °C ... +70 °C) |
| | 350 mA (T6 / -40 °C ... +35 °C) |
| | 100 mA (T6 / -40 °C ... +70 °C) |
| Max. input voltage U_i | 30 V DC |
| Ambient temperature (operation) | -40 °C ... 70 °C (with current derating) |

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 6.2 mm +0.1 mm |
| Height | 105.8 mm |

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| | |
|-------|--------------------------------|
| Depth | 100 mm (incl. DIN rail 7.5 mm) |
|-------|--------------------------------|

Material specifications

| | |
|--|-----------------|
| Color | blue (RAL 5015) |
| 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 |
| Rated current | 600 mA (40 °C) |
| Operating effective current I_C at U_C | $\leq 5 \mu\text{A}$ |
| Residual current I_{PE} | $\leq 10 \mu\text{A}$ |
| Nominal discharge current I_n (8/20) μs (line-ground) | 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-earth) | $\leq 140 \text{ V}$ (C1 - 1 kV / 500 A) |
| | $\leq 190 \text{ V}$ (C2 - 10 kV / 5 kA) |
| | $\leq 50 \text{ V}$ (C3 - 100 A) |
| Voltage protection level U_p static (line-earth) | $\leq 55 \text{ V}$ (C1 - 1 kV / 500 A) |
| | $\leq 120 \text{ V}$ (C2 - 10 kV / 5 kA) |
| Response time t_A (line-earth) | $\leq 1 \text{ ns}$ |
| Input attenuation aE, asym. | typ. 0.3 dB ($\leq 270 \text{ kHz}/150 \Omega$) |
| Cut-off frequency f_g (3 dB), asym. (PE) in 150 Ω system | typ. 960 kHz |
| Capacity (Core-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) | $\leq 300 \text{ ms}$ |

Environmental and real-life conditions

Ambient conditions

| | |
|---------------------------------|------------------|
| Degree of protection | IP20 |
| Ambient temperature (operation) | -40 °C ... 85 °C |

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| | |
|---|------------------|
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Altitude | ≤ 2000 m (amsl) |
| Permissible humidity (operation) | 5 % ... 95 % |

Approvals

Conformity/Approvals

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

Standards and regulations

| | |
|--------------------------|-------------|
| Standards/specifications | EN 60079-0 |
| Note | 2018 |
| Standards/specifications | EN 60079-11 |
| Note | 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 60079-11 |
| Note | 2008 |
| Standards/specifications | IEC 61643-21 |
| Note | 2000 + corrigendum 2001 + A1:2008, modified + A2:2012 |

Mounting

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

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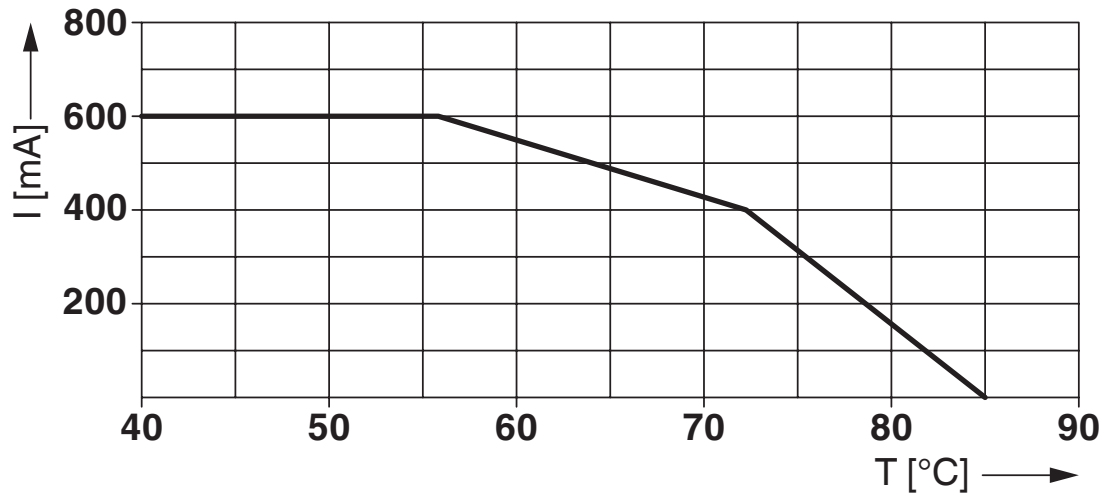


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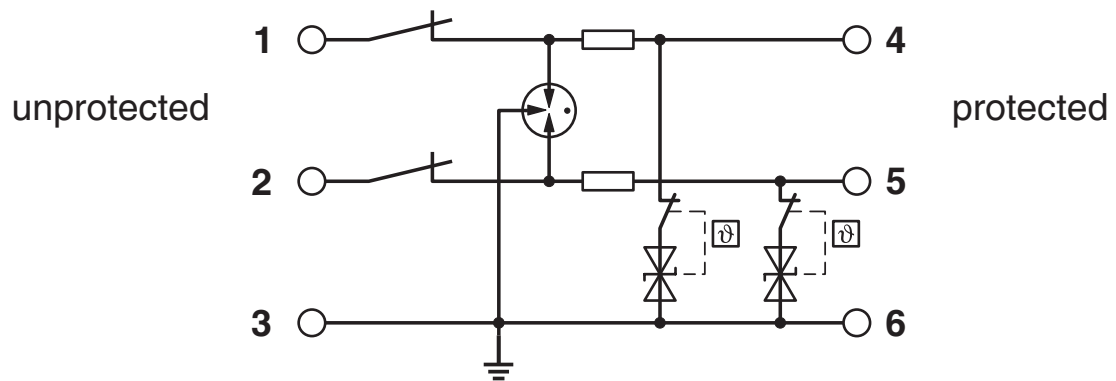
Drawings

Diagram



Derating for non-Ex applications

Circuit diagram



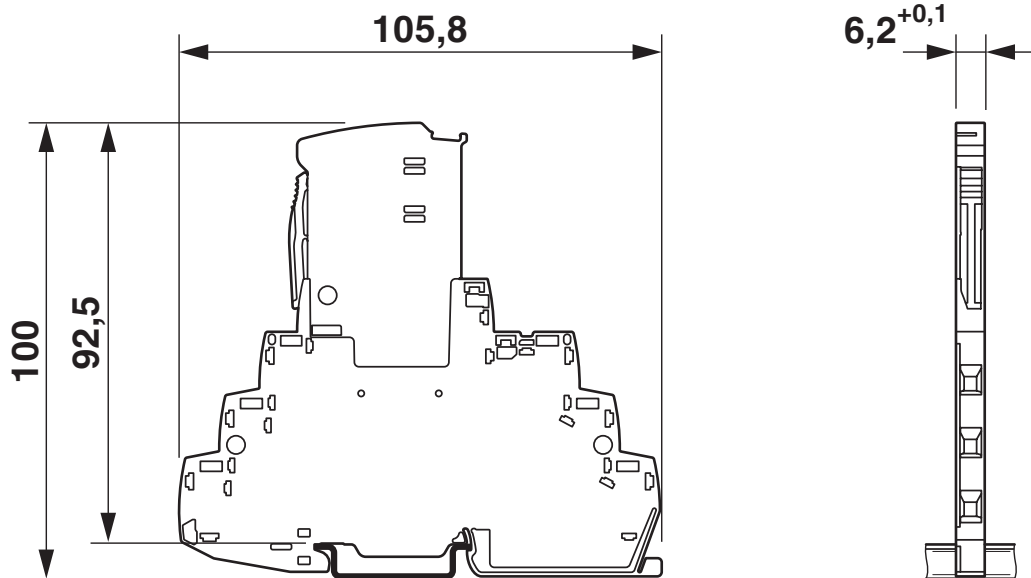
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Dimensional drawing



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/be/products/2906825>

 **CSA**
Approval ID: 70136717


 **DNV GL**
Approval ID: TAE000027G


 **UL Listed**
Approval ID: FILE E 138168

 **CSAus**
Approval ID: 70136717


UAE-RoHS
Approval ID: 22-06-16781

Functional Safety
Approval ID: 16-06-072 R022 V4R2

 **IECEx**
Approval ID: IECEx BVS 16.0090X

 **cUL Listed**
Approval ID: FILE E 333250

 **UL Listed**
Approval ID: FILE E 333250

 **ATEX**
Approval ID: BVS 16 ATEX E 125 X

INMETRO
Approval ID: DNV 19.0077 X

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NEPSI-EX

Approval ID: GYJ20.1114X



CCC

Approval ID: 2020322316000780



UKCA-EX

Approval ID: DEKRA 23UKEX0110X

cCSAus

cULus Listed

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-11.0 | 27130807 |
| ECLASS-13.0 | 27171502 |

ETIM

| | |
|----------|----------|
| ETIM 9.0 | 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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