

Surge protection device - PT-IQ-1X2-24DC-PT



2801255

<https://www.phoenixcontact.com/us/products/2801255>

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Surge protection, consisting of protective plug and base element, with integrated multi-stage status indicator on the module, for one 2-wire floating signal circuit, HART-compatible.

Your advantages

- Predictive monitoring with 3-stage LED display
- Integration of the status message into the system controller via group remote signaling
- Install quickly and error-free with DIN rail connectors
- Maximum ease of maintenance, thanks to the 2-piece design
- Maximum protection for MCR applications with high discharge capacity

Commercial Data

| | |
|--------------------------------------|--------------------------------|
| Item number | 2801255 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Note | Made to Order (non-returnable) |
| Sales Key | C07 |
| Product Key | CL2153 |
| Catalog Page | Page 120 (C-4-2019) |
| GTIN | 4046356766388 |
| Weight per Piece (including packing) | 113.3 g |
| Weight per Piece (excluding packing) | 109.2 g |
| Customs tariff number | 85363030 |
| Country of origin | DE |

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Technical Data

Notes

General

| | |
|------|---|
| Note | Remote signaling as well as the power supply of the DIN rail connector are established by snapping the module into place on the DIN rail connector. |
|------|---|

Product properties

| | |
|--------------------------------|---|
| IEC test classification | C1 |
| | C2 |
| | C3 |
| | D1 |
| Type | DIN rail module, two-section, divisible |
| Product type | Surge protection for MCR technology |
| Surge protection fault message | Optical, multi-stage |
| Wire pairs per module | 1 |

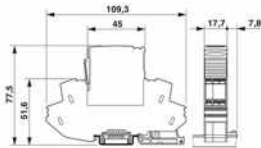
Insulation characteristics

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

Connection data

| | |
|----------------------------------|---|
| Connection method | Push-in connection |
| Conductor cross section flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross section solid | 0.2 mm ² ... 4 mm ² |
| Conductor cross section AWG | 24 ... 12 |

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 17.7 mm |
| Height | 109.3 mm |
| Depth | 77.5 mm (incl. DIN rail 7.5 mm) |
| Horizontal pitch | 1 Div. |

Material specifications

| | |
|--|--------------------|
| Color | jet black RAL 9005 |
| Flammability rating according to UL 94 | V-0 |
| Housing material | PA 6.6 |

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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 | 1000 mA (40 °C) |
| Operating effective current I_C at U_C | ≤ 1 mA (in the signal circuit) |
| Residual current I_{PE} | ≤ 2 μ A (per signal circuit) |
| Nominal discharge current I_n (8/20) μ s (line-line) | 10 kA |
| Nominal discharge surge current I_n (8/20) μ s (Core-Earth) | 10 kA |
| Pulse discharge current I_{imp} (10/350) μ s (line-earth) | 2.5 kA |
| Total discharge current I_{total} (8/20) μ s | 20 kA |
| Voltage protection level U_p (line-line) | ≤ 80 V (C1 - 1 kV / 500 A) |
| | ≤ 130 V (C2 - 10 kV / 5 kA) |
| | ≤ 55 V (C3 - 25 A) |
| | ≤ 60 V (C3 - 100 A) |
| Voltage protection level U_p (line-earth) | ≤ 600 V (C1 - 1 kV / 500 A) |
| | ≤ 750 V (C2 - 10 kV / 5 kA) |
| | ≤ 700 V (C3 - 25 A) |
| | ≤ 800 V (C3 - 100 A) |
| Voltage protection level U_p static (line-line) | ≤ 65 V (C1 - 1 kV / 500 A) |
| Voltage protection level U_p static (line-earth) | ≤ 60 V (C2 - 10 kV / 5 kA) |
| | ≤ 40 V (C3 - 25 A) |
| | ≤ 100 V (C3 - 100 A) |
| Response time t_A (line-line) | ≤ 1 ns |
| Response time t_A (line-earth) | ≤ 100 ns |
| Input attenuation aE, sym. | typ. 0.3 dB (≤ 270 kHz/150 Ω) |
| Cut-off frequency f_g (3 dB), sym. in 150 Ω system | typ. 1.1 MHz |
| Capacity (Core-Core) | typ. 2 nF |
| Resistance per path | 1.2 $\Omega \pm 5$ % |
| Surge protection fault message | Optical, multi-stage |
| Max. required back-up fuse | 1 A (FF) |
| Impulse durability (line-line) | C1 - 1 kV / 500 A |
| | C2 - 10 kV / 5 kA |
| | C2 - 10 kA |
| | C3 - 100 A |
| Impulse durability (line-earth) | C1 - 1 kV / 500 A |
| | C2 - 10 kV / 5 kA |
| | C2 - 10 kA |

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| | |
|-------------------------------|-------------|
| | C3 - 100 A |
| | D1 - 2.5 kA |
| Pulse reset time (line-line) | ≤ 4000 ms |
| Pulse reset time (line-earth) | ≤ 2600 ms |

Environmental and real-life conditions

Ambient conditions

| | |
|---|--|
| Degree of protection | IP20 |
| Ambient temperature (operation) | -40 °C ... 70 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Altitude | ≤ 4000 m (amsl (above mean sea level)) |

Standards and regulations

| | |
|--------------------------|--------------|
| Standards/specifications | IEC 61643-21 |
| Standards/specifications | EN 61643-21 |
| Standards/specifications | EN 61000-6-2 |
| Standards/specifications | EN 61000-6-3 |

Mounting

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

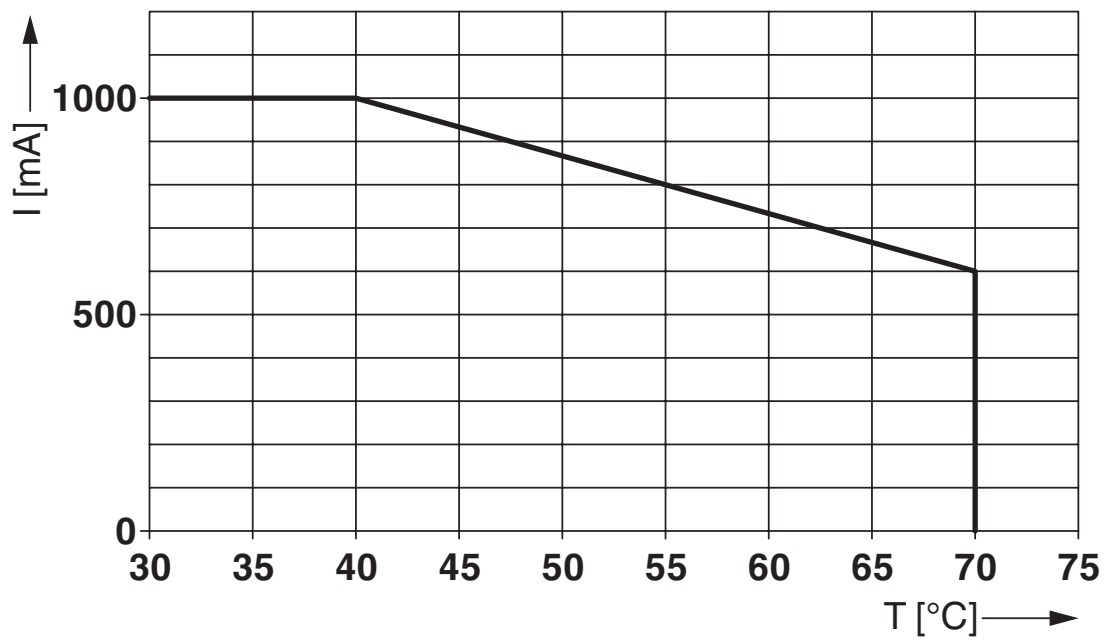
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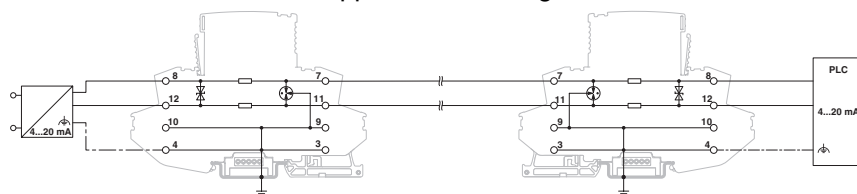
<https://www.phoenixcontact.com/us/products/2801255>

Drawings

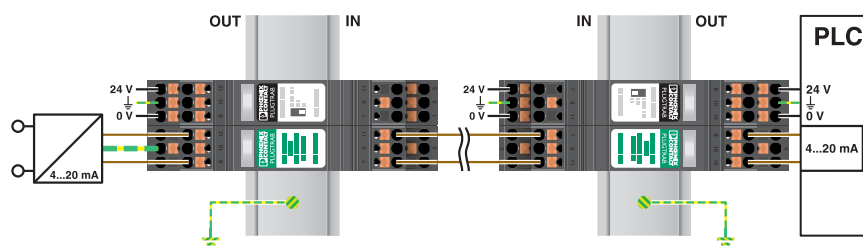
Diagram



Application drawing



Application drawing

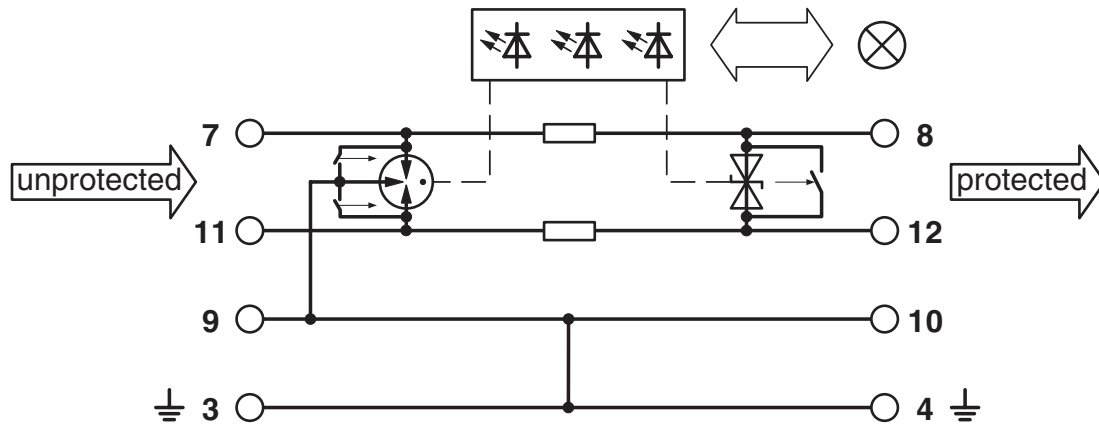


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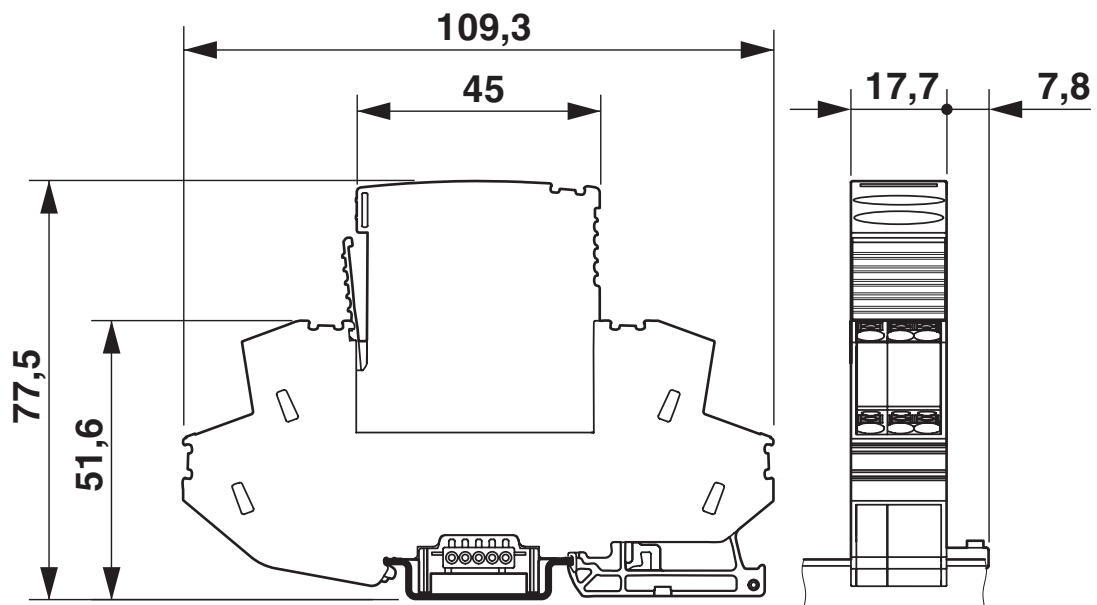
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Circuit diagram



Dimensional drawing



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Approvals

 **CSA**
Approval ID: 2761632

 **EAC**
Approval ID: RU C-DE.*09.B.00169

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

 **CSAus**
Approval ID: 2761632

cCSAus

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Classifications

ECLASS

| | |
|---------------|----------|
| ECLASS-9.0 | 27130807 |
| ECLASS-10.0.1 | 27130807 |
| ECLASS-11.0 | 27130807 |

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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Mandatory Accessories

Supply and remote module

Supply and remote module - PT-IQ-PTB-PT - 2801296

<https://www.phoenixcontact.com/us/products/2801296>



Module for power supply and multi-stage, floating remote signaling of connected surge protection modules.

Accessories

Marker pen

Marker pen - X-PEN 0,35 - 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

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Zack Marker strip, flat

Zack Marker strip, flat - ZBF 5:UNBEDRUCKT - 0808642

<https://www.phoenixcontact.com/us/products/0808642>



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.1 x 5.2 mm, Number of individual labels: 10

Zack Marker strip, flat

Zack Marker strip, flat - ZBF 5/WH-100:UNBEDRUCKT - 0808668

<https://www.phoenixcontact.com/us/products/0808668>



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 1000

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Zack Marker strip, flat

Zack Marker strip, flat - ZBF 5,LGS:FORTL.ZAHLEN - 0808671

<https://www.phoenixcontact.com/us/products/0808671>



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 491 ... 500, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

Zack Marker strip, flat

Zack Marker strip, flat - ZBF 5,LGS:GERADE ZAHLEN - 0810821

<https://www.phoenixcontact.com/us/products/0810821>



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: consecutive even numbers 2 ... 20, 22 ... 40, etc. up to 82 ... 100, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

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Zack Marker strip, flat

Zack Marker strip, flat - ZBF 5,LGS:UNGERADE ZAHLEN - 0810863

<https://www.phoenixcontact.com/us/products/0810863>



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: Odd numbers 1 - 19, 21 - 39, etc. up to 81 - 99, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

Zack Marker strip, flat

Zack Marker strip, flat - ZBF 5,QR:FORTL.ZAHLEN - 0808697

<https://www.phoenixcontact.com/us/products/0808697>



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

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Zack marker strip

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128

<https://www.phoenixcontact.com/us/products/2809128>



Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

End clamp

End clamp - E/ME TBUS NS35 GY - 2713780

<https://www.phoenixcontact.com/us/products/2713780>



End clamp, stable construction for DIN rail bus connector

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PCB connector

PCB connector - FK-MC 0,5/ 5-ST-2,5 - 1881354

<https://www.phoenixcontact.com/us/products/1881354>



PCB connector, nominal cross section: 0.5 mm², color: green, nominal current: 4 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, product range: FK-MC 0,5/..-ST, pitch: 2.5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, number of solder pins per potential: 1, plug-in system: COMBICON FK-MC 0,5, locking: without, mounting: without, type of packaging: packed in cardboard

Shield connection

Shield connection - SSA 3-6 - 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

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Shield connection

Shield connection - SSA 5-10 - 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

Surge protection plug

Surge protection plug - PT-IQ-1X2-24DC-P - 2800772

<https://www.phoenixcontact.com/us/products/2800772>



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

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DIN rail bus connectors

DIN rail bus connectors - PT-IQ-17,5-TBUS-5-2.0 - 2906878

<https://www.phoenixcontact.com/us/products/2906878>



DIN rail connector for PT-IQ system for establishing remote signaling and the power supply when a surge protection module is snapped on.

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