

## Surge protection device - PT-IQ-4X1+F-48DC-PT - 2801274

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Surge protection, consisting of protective plug and base element, with integrated multi-stage status indicator on the module for four signal wires with common reference potential. Indirect grounding via gas-filled surge arrester.



### Key Commercial Data

|              |               |
|--------------|---------------|
| Packing unit | 1 pc          |
| GTIN         |               |
| GTIN         | 4046356766562 |

### Technical data

#### Dimensions

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

#### Ambient conditions

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

#### General

|                                        |                                                                                    |
|----------------------------------------|------------------------------------------------------------------------------------|
| Housing material                       | PA 6.6                                                                             |
| Flammability rating according to UL 94 | V-0                                                                                |
| Color                                  | jet black RAL 9005                                                                 |
| Mounting type                          | DIN rail: 35 mm                                                                    |
| Type                                   | DIN rail module, two-section, divisible                                            |
| Direction of action                    | Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground |

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## Technical data

### Additional descriptions

|      |                                                                                                                                                     |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 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. |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------|

### Protective circuit

|                                                                              |                                                       |
|------------------------------------------------------------------------------|-------------------------------------------------------|
| IEC test classification                                                      | C1                                                    |
|                                                                              | C2                                                    |
|                                                                              | C3                                                    |
|                                                                              | D1                                                    |
| Nominal voltage $U_N$                                                        | 48 V DC                                               |
| Maximum continuous voltage $U_C$                                             | 53 V DC                                               |
|                                                                              | 37 V AC                                               |
| Rated current                                                                | 300 mA                                                |
| Operating effective current $I_C$ at $U_C$                                   | $\leq 6 \mu\text{A}$ (per path)                       |
| Residual current $I_{PE}$                                                    | $\leq 1 \mu\text{A}$                                  |
| Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (line-earth)            | 10 kA                                                 |
| Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (line-signal ground)    | 10 kA                                                 |
| Pulse discharge current $I_{imp}$ (10/350) $\mu\text{s}$ (line-earth)        | 2.5 kA                                                |
| Pulse discharge current $I_{imp}$ (10/350) $\mu\text{s}$ (line-signalground) | 2.5 kA                                                |
| Total discharge current $I_{total}$ (8/20) $\mu\text{s}$                     | 20 kA                                                 |
| Voltage protection level $U_p$ (line-earth)                                  | $\leq 750 \text{ V}$ (C1 - 1 kV/500 A)                |
|                                                                              | $\leq 950 \text{ V}$ (C2 - 10 kV / 5 kA)              |
|                                                                              | $\leq 850 \text{ V}$ (C3 - 25 A)                      |
| Voltage protection level $U_p$ (line-signalground)                           | $\leq 105 \text{ V}$ (C1 - 1 kV/500 A)                |
|                                                                              | $\leq 160 \text{ V}$ (C2 - 10 kV / 5 kA)              |
|                                                                              | $\leq 90 \text{ V}$ (C3 - 25 A)                       |
| Voltage protection level $U_p$ static (line-earth)                           | $\leq 200 \text{ V}$ (C2 - 10 kV / 5 kA)              |
| Response time $t_A$ (line-signalground)                                      | $\leq 1 \text{ ns}$                                   |
| Response time $t_A$ (line-earth)                                             | $\leq 100 \text{ ns}$                                 |
| Input attenuation aE, asym.                                                  | typ. 0.3 dB ( $\leq 530 \text{ kHz}$ / 150 $\Omega$ ) |
| Cut-off frequency $f_g$ (3 dB), asym. (GND) in 150 Ohm system                | typ. 1.9 MHz                                          |
| Capacity (line-signalground)                                                 | typ. 1.5 nF                                           |
| Resistance per path                                                          | 1.2 $\Omega \pm 5 \%$                                 |
| Surge protection fault message                                               | Optical, multi-stage                                  |
| Max. required back-up fuse                                                   | 315 mA (FF)                                           |
| Impulse durability (line-earth)                                              | C1 - 1 kV / 500 A                                     |
|                                                                              | C2 - 10 kV / 5 kA                                     |
|                                                                              | C2 - 10 kA                                            |
|                                                                              | C3 - 25 A                                             |
|                                                                              | D1 - 2.5 kA                                           |
| Impulse durability (line-signalground)                                       | C1 - 1 kV / 500 A                                     |

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### Technical data

#### Protective circuit

|                                      |                   |
|--------------------------------------|-------------------|
|                                      | C2 - 10 kV / 5 kA |
|                                      | C2 - 10 kA        |
|                                      | C3 - 25 A         |
|                                      | D1 - 2,5 kA       |
| Pulse reset time (line-earth)        | ≤ 250 ms          |
| Pulse reset time (line-signalground) | ≤ 1500 ms         |

#### Connection data

|                                  |                     |
|----------------------------------|---------------------|
| Connection method                | Push-in connection  |
| Stripping length                 | 10 mm               |
| Conductor cross section flexible | 0.2 mm² ... 2.5 mm² |
| Conductor cross section solid    | 0.5 mm² ... 4 mm²   |
| Conductor cross section AWG      | 24 ... 12           |

#### Connection, equipotential bonding

|                   |               |
|-------------------|---------------|
| Connection method | DIN rail NS35 |
|-------------------|---------------|

#### Standards and Regulations

|                          |                                       |
|--------------------------|---------------------------------------|
| Standards/specifications | IEC 61643-21 2000 + A1:2008, modified |
|                          | EN 61643-21 2001 + A1:2009            |
|                          | EN 61000-6-3 2007 + A1:2011           |
|                          | EN 61000-6-2 2005                     |

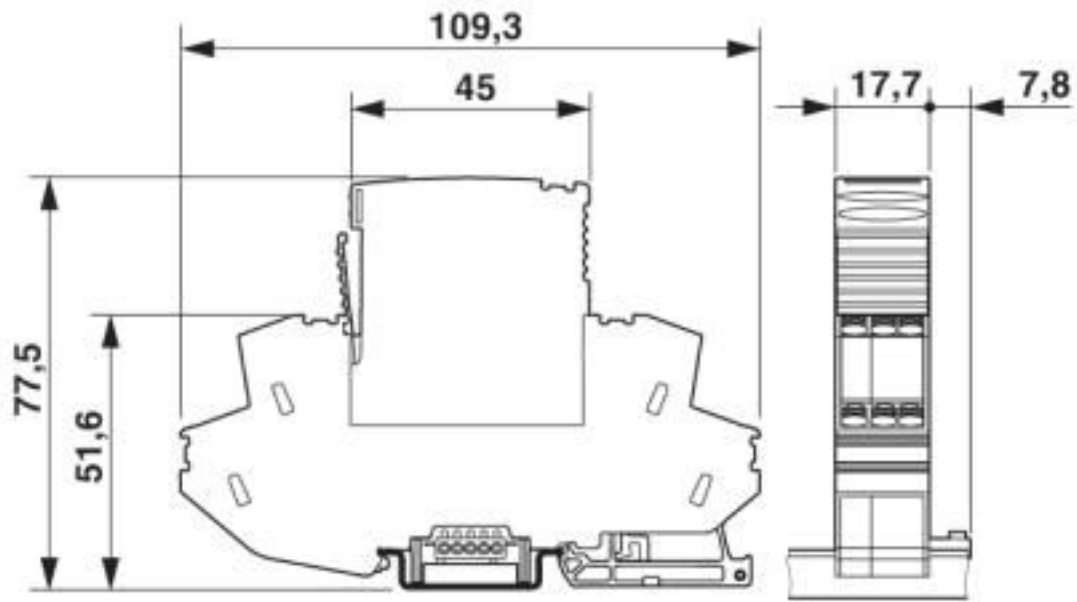
#### Environmental Product Compliance

|            |                                                                                                     |
|------------|-----------------------------------------------------------------------------------------------------|
| 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" |

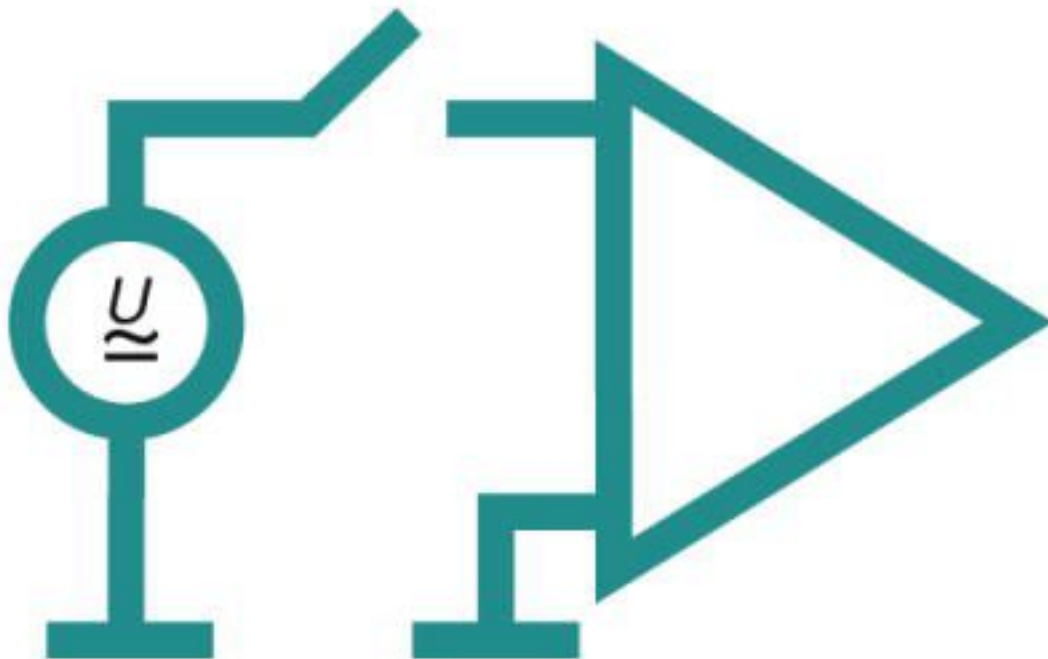
### Drawings

## Surge protection device - PT-IQ-4X1+F-48DC-PT - 2801274

Dimensional drawing

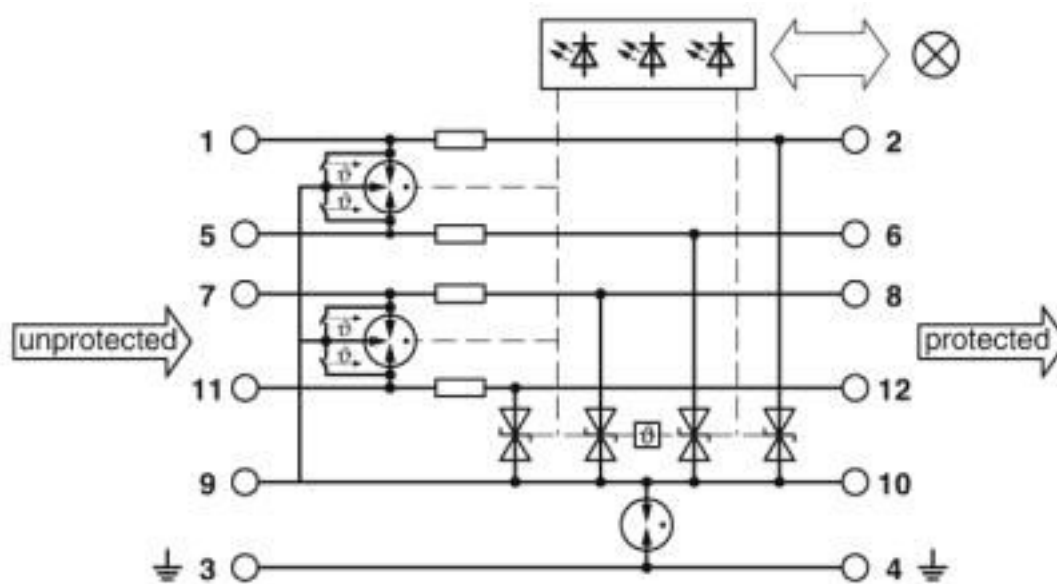


Pictogram



## Surge protection device - PT-IQ-4X1+F-48DC-PT - 2801274

Circuit diagram



### Classifications

#### eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27130807 |
| eCl@ss 4.0    | 27130800 |
| eCl@ss 4.1    | 27130800 |
| eCl@ss 5.0    | 27130800 |
| eCl@ss 5.1    | 27130800 |
| 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 |

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## Classifications

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 18.0 | 39121620 |
| UNSPSC 19.0 | 39121620 |
| UNSPSC 20.0 | 39121620 |
| UNSPSC 21.0 | 39121620 |

## Approvals

### Approvals

Approvals

UL Listed

Ex Approvals

### Approval details

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

## Accessories

### Accessories

#### Device marking

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128



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

### Labeled terminal marker

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



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

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### Accessories

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



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

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



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

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



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: 5 mm, lettering field size: 5.15 x 5.15 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

### Mounting material

End clamp - E/ME TBUS NS35 GY - 2713780



End clamp, stable construction for DIN rail bus connector

### PCB plug

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## Accessories

Printed-circuit board connector - FK-MC 0,5/ 5-ST-2,5 - 1881354



PCB connector, nominal current: 4 A, rated voltage (III/2): 160 V, nominal cross section: 0.5 mm<sup>2</sup>, number of positions: 5, pitch: 2.5 mm, connection method: Push-in spring connection, color: green, contact surface: Tin

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## Terminal marking

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



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: 5 mm, lettering field size: 5.1 x 5.2 mm, Number of individual labels: 10

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



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

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## Necessary add-on products

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



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

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## Additional products

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



## Surge protection device - PT-IQ-4X1+F-48DC-PT - 2801274

### Accessories

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 - PT-IQ-4X1-48DC-P - 2800814



Surge protection plug with integrated multi-stage status indicator on the module for four signal wires with common reference potential. Nominal voltage: 48 V DC

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