

## Surge protection device - PT-IQ-2X2-48DC-UT - 2800986

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

### Your advantages

- ✓ Surge protection system
- ✓ Multi-level state monitoring
- ✓ Collective message about supply and remote module
- ✓ System supplied via DIN rail bus
- ✓ Up to 28 protection modules per supply module
- ✓ Maximum ease of maintenance thanks to the two-piece design
- ✓ Codable plug
- ✓ Impedance-neutral disconnection of plug for maintenance purposes
- ✓ Base element remains an integral part of the installation



### Key Commercial Data

|              |               |
|--------------|---------------|
| Packing unit | 1 pc          |
| GTIN         |               |
| GTIN         | 4046356665742 |

### Technical data

#### Dimensions

|                  |                                 |
|------------------|---------------------------------|
| Height           | 91.1 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 |

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## Technical data

### Ambient conditions

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

### 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                             |
| Nominal current $I_N$                                           | 300 mA                              |
| Rated current                                                   | 300 mA                              |
| Operating effective current $I_C$ at $U_C$                      | ≤ 5 $\mu$ A (in the signal circuit) |
| Residual current $I_{PE}$                                       | ≤ 2 $\mu$ A (per signal circuit)    |
| Nominal discharge current $I_n$ (8/20) $\mu$ s (line-line)      | 10 kA                               |
| Nominal discharge current $I_n$ (8/20) $\mu$ s (line-earth)     | 10 kA                               |
| Pulse discharge current $I_{imp}$ (10/350) $\mu$ s (line-earth) | 2.5 kA                              |
| Total discharge current $I_{total}$ (8/20) $\mu$ s              | 20 kA                               |
| Voltage protection level $U_p$ (line-line)                      | ≤ 100 V (C1 - 1 kV/500 A)           |
|                                                                 | ≤ 150 V (C2 - 10 kV / 5 kA)         |
|                                                                 | ≤ 170 V (C2 - 10 kA)                |
|                                                                 | ≤ 90 V (C3 - 25 A)                  |
|                                                                 | ≤ 95 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)         |
|                                                                 | ≤ 800 V (C2 - 10 kA)                |
|                                                                 | ≤ 700 V (C3 - 25 A)                 |
|                                                                 | ≤ 800 V (C3 - 100 A)                |

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## Technical data

### Protective circuit

|                                                        |                                             |
|--------------------------------------------------------|---------------------------------------------|
| Voltage protection level $U_p$ static (line-line)      | $\leq 85$ V (C2 - 10 kA)                    |
| Response time $t_A$ (line-line)                        | $\leq 1$ ns                                 |
| Response time $t_A$ (line-earth)                       | $\leq 100$ ns                               |
| Input attenuation aE, sym.                             | typ. 0.3 dB ( $\leq 450$ kHz/150 $\Omega$ ) |
| Cut-off frequency $f_g$ (3 dB), sym. in 150 Ohm system | typ. 1.9 MHz                                |
| Capacity (line-earth)                                  | 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-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                                  |
|                                                        | C3 - 100 A                                  |
|                                                        | D1 - 2.5 kA                                 |
| Pulse reset time (line-line)                           | $\leq 300$ ms                               |
| Pulse reset time (line-earth)                          | $\leq 4000$ ms                              |

### Connection data

|                                  |                                             |
|----------------------------------|---------------------------------------------|
| Connection method                | Screw connection                            |
| Screw thread                     | M3                                          |
| Tightening torque                | 0.5 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                                   |

### 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 + A2:2013  |
|                          | 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 |

## Surge protection device - PT-IQ-2X2-48DC-UT - 2800986

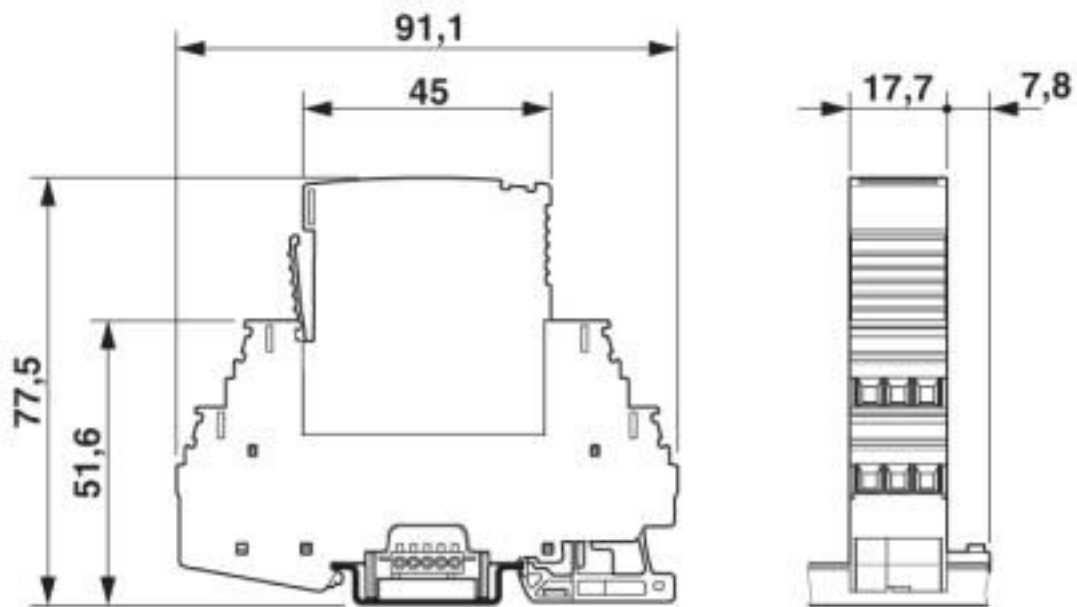
### Technical data

#### Environmental Product Compliance

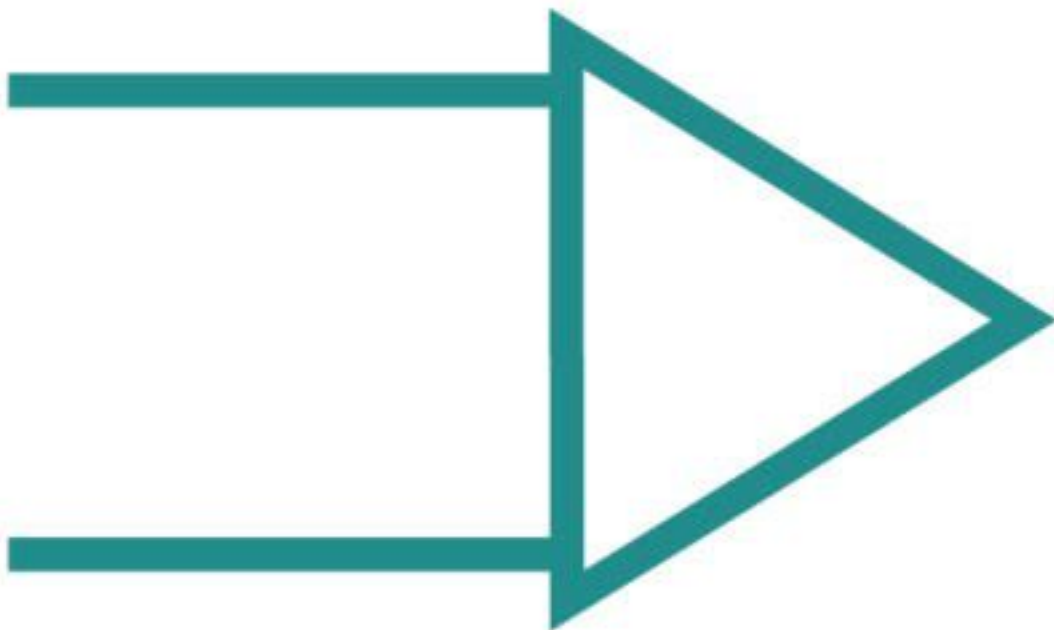
|  |                                                                                                     |
|--|-----------------------------------------------------------------------------------------------------|
|  | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |
|--|-----------------------------------------------------------------------------------------------------|

### Drawings

Dimensional drawing

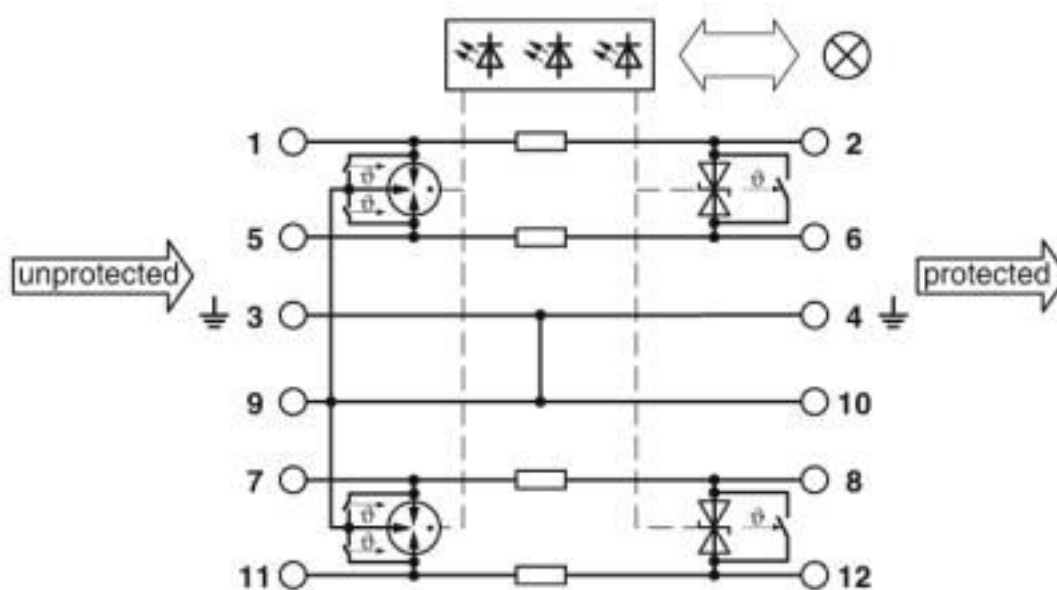


Pictogram



## Surge protection device - PT-IQ-2X2-48DC-UT - 2800986

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 |

## Surge protection device - PT-IQ-2X2-48DC-UT - 2800986

### Classifications

#### UNSPSC

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

### Approvals

#### Approvals

#### Approvals

CSA / UL Listed / CSAus / EAC / cCSAus

#### Ex Approvals

#### Approval details

|     |                                                                                     |                                                                                                                                         |         |
|-----|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------|
| CSA |  | <a href="http://www.csagroup.org/services-industries/product-listing/">http://www.csagroup.org/services-industries/product-listing/</a> | 2761632 |
|-----|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------|

|           |                                                                                     |                                                                                                                                                       |               |
|-----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 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> | 2761632 |
|-------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------|

|     |                                                                                     |  |                         |
|-----|-------------------------------------------------------------------------------------|--|-------------------------|
| EAC |  |  | RU C-<br>DE.*09.B.00169 |
|-----|-------------------------------------------------------------------------------------|--|-------------------------|

|        |                                                                                     |  |  |
|--------|-------------------------------------------------------------------------------------|--|--|
| cCSAus |  |  |  |
|--------|-------------------------------------------------------------------------------------|--|--|

### Accessories

#### Accessories

#### Device marking

## Surge protection device - PT-IQ-2X2-48DC-UT - 2800986

### Accessories

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

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### 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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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

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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

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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

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### Marker pen

## Surge protection device - PT-IQ-2X2-48DC-UT - 2800986

### Accessories

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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### Mounting material

End clamp - E/ME TBUS NS35 GY - 2713780



End clamp, stable construction for DIN rail bus connector

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### PCB plug

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

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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

## Surge protection device - PT-IQ-2X2-48DC-UT - 2800986

### Accessories

Supply and remote module - PT-IQ-PTB-UT - 2800768



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

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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 - PT-IQ-2X2-48DC-P - 2800810



Surge protection plug with integrated multi-stage status indicator on the module for two 2-wire floating signal circuits.  
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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