

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



2800976

<https://www.phoenixcontact.com/us/products/2800976>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



Surge protection, consisting of protective plug and base element, with integrated multi-stage status indicator on the module, for a 2-wire floating signal circuit, HART-compatible. Can be used in safety-related circuits up to SIL 3.

## 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                          | 2800976       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CL22          |
| Product key                          | CL2151        |
| GTIN                                 | 4046356665186 |
| Weight per piece (including packing) | 108.9 g       |
| Weight per piece (excluding packing) | 105.8 g       |
| Customs tariff number                | 85363010      |
| Country of origin                    | DE            |

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



2800976

<https://www.phoenixcontact.com/us/products/2800976>

## 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

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

#### 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                                      |
| Conductor cross-section flexible | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross-section rigid    | 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>   |
| Conductor cross-section AWG      | 24 ... 12                                   |

### Dimensions

|                     |                                 |
|---------------------|---------------------------------|
| Dimensional drawing |                                 |
| Width               | 17.7 mm                         |
| Height              | 91.1 mm                         |
| Depth               | 77.5 mm (incl. DIN rail 7.5 mm) |

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



2800976

<https://www.phoenixcontact.com/us/products/2800976>

|                  |        |
|------------------|--------|
| Horizontal pitch | 1 Div. |
|------------------|--------|

## Material specifications

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

## 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 |
| Nominal voltage $U_N$   | 24 V DC  |
| Maximum continuous operating voltage $U_C$                      | 30 V DC  |
|   | 21 V AC  |
| Rated current   | 1000 mA (40 °C)  |
| Operating effective current $I_C$ at $U_C$                      | $\leq 1$ mA (in the signal circuit)  |
| Protective conductor current $I_{PE}$                           | $\leq 2$ $\mu$ 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-ground)    | 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)                      | $\leq 80$ V (C1 - 1 kV / 500 A)  |
|   | $\leq 130$ V (C2 - 10 kV / 5 kA)   |
|   | $\leq 150$ V (C2 - 10 kA)  |
|   | $\leq 55$ V (C3 - 25 A)  |
|   | $\leq 60$ V (C3 - 100 A)   |
| Voltage protection level $U_p$ (line-earth)                     | $\leq 600$ V (C1 - 1 kV / 500 A)   |
|   | $\leq 750$ V (C2 - 10 kV / 5 kA)   |
|   | $\leq 800$ V (C2 - 10 kA)  |
|   | $\leq 700$ V (C3 - 25 A)   |
|   | $\leq 800$ V (C3 - 100 A)  |
| Voltage protection level $U_p$ static (line-line)               | $\leq 65$ V (C1 - 1 kV / 500 A)  |
|   | $\leq 65$ 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 ( $\leq 270$ kHz/150 $\Omega$ )  |
| Cut-off frequency $f_g$ (3 dB), sym. in 150 $\Omega$ 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   |

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



2800976

<https://www.phoenixcontact.com/us/products/2800976>

|                                 |                   |
|---------------------------------|-------------------|
| 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        |
|                                 | 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)  |
| Permissible humidity (operation)        | 5 % ... 95 %     |

## Standards and regulations

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

## Mounting

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

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



2800976

<https://www.phoenixcontact.com/us/products/2800976>

## Drawings

Dimensional drawing

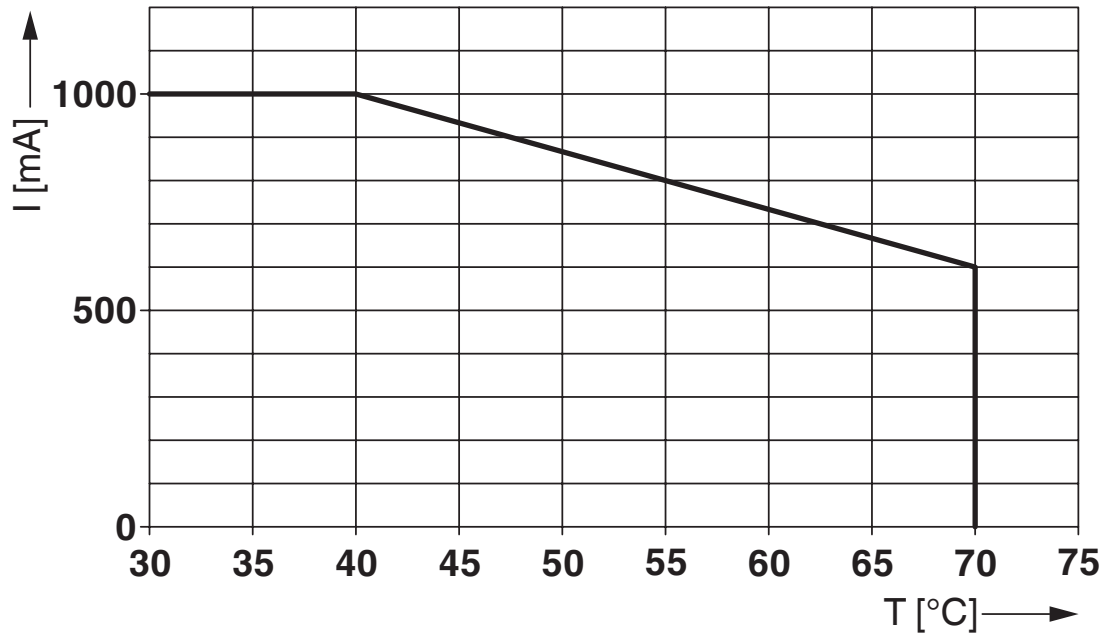


Schematic diagram

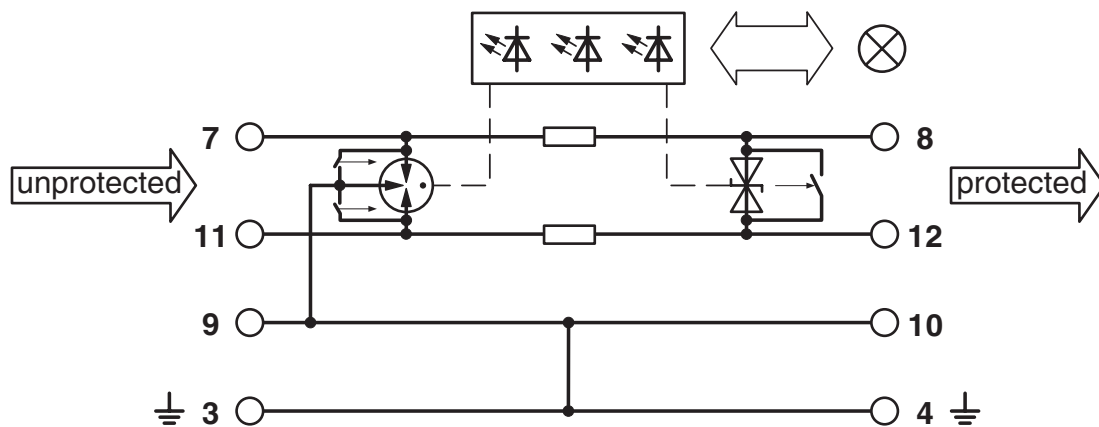
| PT-IQ-1X2-...DC-UT(PT)   |                          |                           |                          |       |                          |                            |      |                          |       |
|--|--------------------------|---------------------------|--------------------------|-------|--------------------------|----------------------------|------|--------------------------|-------|
| Category   | 1oo1 architecture, HFT=0 |                           |                          |       | 1oo2 architecture, HFT=1 |                            |      |                          |       |
|  | PFD <sub>AVG</sub>       | PFH                       | Used budget of SIL 2 SIF |       | PFD <sub>AVG</sub>       | PFH                        | CCF  | Used budget of SIL 3 SIF |       |
|  |                          |                           | PFD <sub>AVG</sub>       | PFH   |                          |                            |      | PFD <sub>AVG</sub>       | PFH   |
|  | 1.07·10 <sup>-5</sup>    | 1.90·10 <sup>-9</sup> 1/h | 0.1 %                    | 0.2 % | 5.34·10 <sup>-7</sup>    | 9.50·10 <sup>-11</sup> 1/h | 5 %  | 0.1 %                    | 0.1 % |
|  |                          |                           |                          |       | 1.07·10 <sup>-6</sup>    | 1.90·10 <sup>-10</sup> 1/h | 10 % | 0.1 %                    | 0.2 % |
| Calculation based on exida report, Phoenix Contact 13/04-032 R017 V4R0<br>exida Profile 1, FMEDA Analysis 2, T <sub>proof</sub> : 1 year, MT: 10 years, MTTR: 24 hours, PTC: 99%<br>Used standards<br>IEC/EN 61508, edition 2010 (device specific)<br>IEC/EN 61511, edition 2016 + COR1:2016 + A1:2017 (system specific) |                          |                           |                          |       |                          |                            |      |                          |       |

## Functional safety scenarios

Diagram



Circuit diagram



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



2800976

<https://www.phoenixcontact.com/us/products/2800976>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2800976>



**CSA**

Approval ID: 2761632



**UL Listed**

Approval ID: FILE E 138168



**CSAus**

Approval ID: 2761632

**Functional Safety**

Approval ID: 13-04-032 R017 V4R0

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



2800976

<https://www.phoenixcontact.com/us/products/2800976>

## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27171501 |
| ECLASS-15.0 | 27171501 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC001466 |
|-----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121600 |
|-------------|----------|

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



2800976

<https://www.phoenixcontact.com/us/products/2800976>

## Environmental product compliance

### EU RoHS

|   |                    |
|---|--------------------|
| Fulfills EU RoHS substance requirements | Yes                |
| Exemption                               | 6(c), 7(a), 7(c)-I |

### China RoHS

|  |   |
|--|---|
| Environment friendly use period (EFUP) | EFUP-50   |
|  | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

### EU REACH SVHC

|                                     |  |
|-------------------------------------|--|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1)   |
|                                     | 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7) |
| SCIP                                | 2a3e44d9-7bfb-4ddf-880b-87890448e51e                           |

Phoenix Contact 2026 © - all rights reserved  
<https://www.phoenixcontact.com>

Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)