

## Surge protection device - PT-IQ-4X1+F-24DC-PT - 2801272

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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.

The figure shows the PT-IQ-2x2-24DC-PT version



### Key commercial data

|                                      |           |
|--------------------------------------|-----------|
| Packing unit                         | 1 pc      |
| Weight per Piece (excluding packing) | 160.0 GRM |
| Custom tariff number                 | 85363030  |
| Country of origin                    | Germany   |

### Technical data

#### Dimensions

|                  |          |
|------------------|----------|
| Height           | 109.3 mm |
| Width            | 17.7 mm  |
| Depth            | 77.5 mm  |
| Horizontal pitch | 1 Div.   |

#### Ambient conditions

|                                         |                  |
|-----------------------------------------|------------------|
| Ambient temperature (operation)         | -40 °C ... 70 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Degree of protection                    | IP20             |

#### General

|                                         |                   |
|-----------------------------------------|-------------------|
| Housing material                        | PA 6.6            |
| Inflammability class according to UL 94 | V0                |
| Color                                   | black             |
| Mounting type                           | DIN rail mounting |

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## Technical data

### General

|                     |                                                                                    |
|---------------------|------------------------------------------------------------------------------------|
| Type                | DIN rail module, two-section, divisible                                            |
| Direction of action | Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground |

### Protective circuit

|                                                                  |                                               |
|------------------------------------------------------------------|-----------------------------------------------|
| IEC test classification                                          | C1                                            |
|                                                                  | C2                                            |
|                                                                  | C3                                            |
|                                                                  | D1                                            |
| Nominal voltage $U_N$                                            | 24 V DC                                       |
| Maximum continuous operating voltage $U_C$                       | 30 V DC                                       |
|                                                                  | 21 V AC                                       |
| Nominal current $I_N$                                            | 700 mA (up to 50°C)                           |
| Operating effective current $I_C$ at $U_C$                       | $\leq 1$ mA (per path)                        |
| Residual current $I_{PE}$                                        | $\leq 1$ $\mu$ A                              |
| Nominal discharge current $I_n$ (8/20) $\mu$ s (Core-Earth)      | 10 kA                                         |
| Impulse discharge current (10/350) $\mu$ s, peak value $I_{imp}$ | 2.5 kA                                        |
| Voltage protection level $U_P$ (Core-Earth)                      | $\leq 800$ V (C1 - 1 kV/500 A)                |
|                                                                  | $\leq 950$ V (C2 - 10 kV / 5 kA)              |
|                                                                  | $\leq 780$ V (C3 - 25 A)                      |
| Voltage protection level $U_P$ (Core-GND)                        | $\leq 75$ V (C1 - 1 kV/500 A)                 |
|                                                                  | $\leq 135$ V (C2 - 10 kV / 5 kA)              |
|                                                                  | $\leq 55$ V (C3 - 25 A)                       |
| Voltage protection level $U_P$ static (core-ground)              | $\leq 80$ V (C2 - 10 kV / 5 kA)               |
|                                                                  | $\leq 75$ V (C3 - 25 A)                       |
| Response time $t_A$ (Core-Earth)                                 | $\leq 1$ ns                                   |
|                                                                  | $\leq 100$ ns                                 |
| Input attenuation aE, asym.                                      | typ. 0.3 dB ( $\leq 300$ kHz / 150 $\Omega$ ) |
| Cut-off frequency $f_g$ (3 dB), asym. (GND) in 150 Ohm system    | typ. 1.1 MHz                                  |
| Capacity (Core-GND)                                              | typ. 2 nF                                     |
| Resistance in series                                             | 1.2 $\Omega \pm 5\%$                          |
| Surge protection fault message                                   | Optical, multi-stage                          |
| Max. required back-up fuse                                       | 0.8 A (FF)                                    |
| Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)   | D1 - 2,5 kA                                   |
|                                                                  | C2 - 10 kA                                    |
|                                                                  | C3 - 25 A                                     |
| Surge carrying capacity in acc. with IEC 61643-21 (Core-GND)     | C2 - 10 kA                                    |
|                                                                  | C3 - 25 A                                     |

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## Technical data

### Protective circuit

|                                                                     |               |
|---------------------------------------------------------------------|---------------|
| Pulse reset time $t_r$ in acc. with IEC 61643-21 (Core-Earth)       | $\leq 30$ ms  |
| Pulse reset time $t_r$ in acc. with IEC 61643-21 (Core-GND)         | $\leq 350$ ms |
| Overload failure mode as per IEC 61643-21 (plug)                    | Mode 2        |
| Overload failure mode as per IEC 61643-21 (GND-Ground base element) | Mode 2        |

### Connection data

|                                        |                     |
|----------------------------------------|---------------------|
| Connection method                      | Push-in connection  |
| Connection type IN                     | Push-in connection  |
| Connection type OUT                    | Push-in connection  |
| Stripping length                       | 10 mm               |
| Conductor cross section stranded min.  | 0.2 mm <sup>2</sup> |
| Conductor cross section stranded max.  | 2.5 mm <sup>2</sup> |
| Conductor cross section solid min.     | 0.5 mm <sup>2</sup> |
| Conductor cross section solid max.     | 4 mm <sup>2</sup>   |
| Conductor cross section AWG/kcmil min. | 24                  |
| Conductor cross section AWG/kcmil max  | 12                  |

### Connection, equipotential bonding

|                   |                                             |
|-------------------|---------------------------------------------|
| Connection method | NS 35 DIN rail or connection terminal block |
|-------------------|---------------------------------------------|

## Classifications

### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 4.0 | 27140201 |
| eCl@ss 4.1 | 27130801 |
| eCl@ss 5.0 | 27130801 |
| eCl@ss 5.1 | 27130801 |
| eCl@ss 6.0 | 27130807 |
| eCl@ss 7.0 | 27130807 |
| eCl@ss 8.0 | 27130807 |

### ETIM

|          |          |
|----------|----------|
| ETIM 3.0 | EC000943 |
| ETIM 4.0 | EC000943 |
| ETIM 5.0 | EC000943 |

### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30212010 |
| UNSPSC 7.0901 | 39121610 |

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## Classifications

### UNSPSC

|              |          |
|--------------|----------|
| UNSPSC 11    | 39121610 |
| UNSPSC 12.01 | 39121610 |
| UNSPSC 13.2  | 39121620 |

## Approvals

### Approvals

Approvals

UL Listed

Ex Approvals

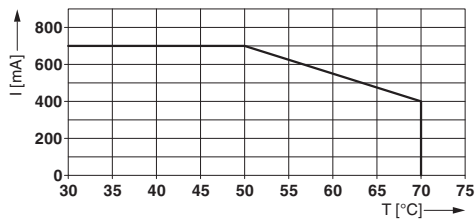
Approvals submitted

### Approval details

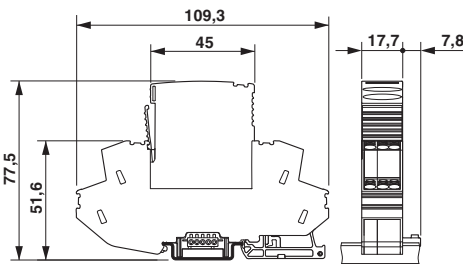
UL Listed 

## Drawings

Diagram

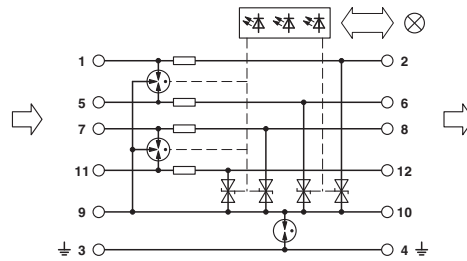


Dimensioned drawing

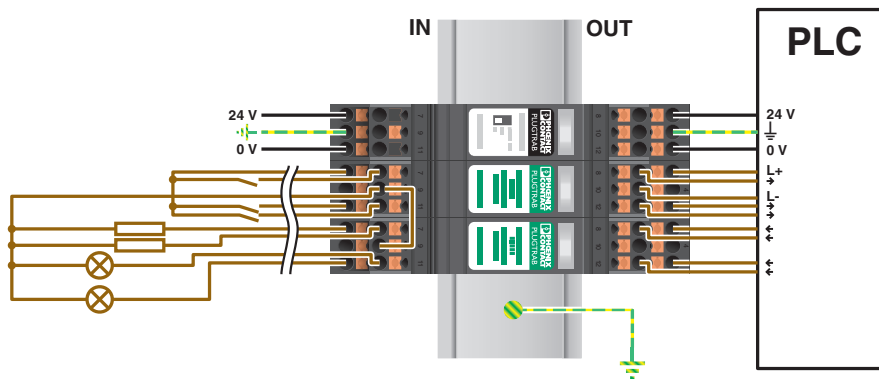


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Circuit diagram



Application drawing



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