

## Surge protection device - PT-IQ-2X2+F-24DC-UT - 2800981

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's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)



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. Indirect grounding via gas-filled surge arrester.

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

### Product Features

- 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      |
| Weight per Piece (excluding packing) | 160.0 GRM |
| Custom tariff number                 | 85363010  |
| Country of origin                    | Germany   |

### Technical data

#### Dimensions

|        |         |
|--------|---------|
| Height | 91 mm   |
| Width  | 17.7 mm |

# Surge protection device - PT-IQ-2X2+F-24DC-UT - 2800981

## Technical data

### Dimensions

|                  |         |
|------------------|---------|
| 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  |
| 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                              |
| Maximum continuous operating voltage $U_C$                       | 30 V DC                           |
|  | 21 V AC                           |
| Nominal current $I_N$  | 700 mA (up to 45°C)               |
| Operating effective current $I_C$ at $U_C$                       | $\leq 1$ mA (per system)          |
| Residual current $I_{PE}$  | $\leq 1$ $\mu$ A                  |
| Nominal discharge current $I_n$ (8/20) $\mu$ s (Core-Core)       | 10 kA                             |
| 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-Core)                       | $\leq 80$ V (C1 - 1 kV/500 A)     |
|  | $\leq 130$ V (C2 - 10 kV / 5 kA)  |
|  | $\leq 140$ V (C2 - 10 kA)         |
|  | $\leq 55$ V (C3 - 25 A)           |
|  | $\leq 60$ V (C3 - 100 A)          |
| Voltage protection level $U_P$ (Core-Earth)                      | $\leq 900$ V (C1 - 1 kV/500 A)    |
|  | $\leq 1300$ V (C2 - 10 kV / 5 kA) |
|  | $\leq 1200$ V (C2 - 10 kA)        |

## Surge protection device - PT-IQ-2X2+F-24DC-UT - 2800981

### Technical data

#### Protective circuit

|  |                             |
|--|-----------------------------|
|  | ≤ 1000 V (C3 - 25 A)        |
|  | ≤ 1300 V (C3 - 100 A)       |
| Voltage protection level $U_p$ (Core-GND)              | ≤ 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)        |
| Voltage protection level $U_p$ static (core-core)      | ≤ 65 V (C1 - 1 kV/500 A)    |
| Response time $t_A$ (Core-Core)                        | ≤ 1 ns                      |
| Response time $t_A$ (Core-Earth)                       | ≤ 100 ns                    |
|  | ≤ 100 ns                    |
| Input attenuation $a_E$ , sym.                         | typ. 0.3 dB (≤ 270 kHz)     |
| Cut-off frequency $f_g$ (3 dB), sym. in 150 Ohm system | typ. 1.1 MHz                |
| Capacity (Core-Earth)                                  | 2 nF                        |
| Resistance in series                                   | 1.2 Ω ±5 %                  |
| Surge protection fault message                         | Optical, multi-stage        |
| Max. required back-up fuse                             | 0.8 A (FF)                  |
| Surge current resistance (conductor-conductor)         | C1 (1 kV/500 A)             |
|  | C2 (10 kV/5 kA)             |
|  | C2 (10 kA)                  |
|  | C3 - 25 A                   |
|  | C3 (50 A)                   |
|  | C3 - 100 A                  |
| Surge current resistance (conductor-ground)            | C1 (1 kV / 500 A)           |
|  | C2 (10 kV / 5 kA)           |
|  | C2 (10 kA)                  |
|  | C3 (25 A)                   |
|  | C3 (50 A)                   |
|  | C3 - 100 A                  |
|  | D1 - 2,5 kA                 |
| Surge current resistance (conductor-GND)               | C1 - 1 kV/500 A             |
|  | C2 - 10 kV/5 kA             |
|  | C2 - 10 kA                  |
|  | C3 - 25 A                   |
|  | C3 - 50 A                   |
|  | C3 - 100 A                  |
| Pulse reset time (conductor-conductor)                 | ≤ 4000 ms                   |

# Surge protection device - PT-IQ-2X2+F-24DC-UT - 2800981

## Technical data

### Protective circuit

|   |           |
|---|-----------|
| Pulse reset time (conductor-ground)             | ≤ 30 ms   |
| Pulse reset time (conductor-GND)                | ≤ 2600 ms |
| Overload failure mode (connector)               | Mode 2    |
| Overload failure mode (GND-ground base element) | Mode 2    |

### Connection data

|  |                       |
|--|-----------------------|
| Connection method                      | Screw connection      |
| Connection type IN                     | Screw terminal blocks |
| Connection type OUT                    | Screw terminal blocks |
| Tightening torque                      | 0.5 Nm                |
| Stripping length                       | 8 mm                  |
| Conductor cross section solid min.     | 0.2 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 |
| UNSPSC 11     | 39121610 |

# Surge protection device - PT-IQ-2X2+F-24DC-UT - 2800981

## Classifications

### UNSPSC

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

## Approvals

### Approvals

---

Approvals

UL Listed

---

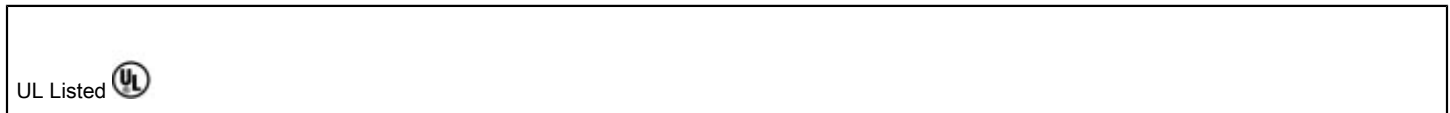
Ex Approvals

---

Approvals submitted

---

### Approval details



## Accessories

### Accessories

#### Device marking

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128



Zack marker strip, Strip, white, unlabeled, can be labeled with: Plotter, Mounting type: Snap into tall marker groove, for terminal block width: 18 mm, Lettering field: 18 x 5 mm

### Labeled terminal marker

## Surge protection device - PT-IQ-2X2+F-24DC-UT - 2800981

### Accessories

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: 5.15 x 5.15 mm

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: 5.15 x 5.15 mm

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: 5.15 x 5.15 mm

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: 5.15 x 5.15 mm

### 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

## Surge protection device - PT-IQ-2X2+F-24DC-UT - 2800981

### Accessories

#### Mounting material

Electronic housing - E/ME TBUS NS35 GY - 2713780



End clamp, stable construction for DIN rail bus connector

---

#### PCB plug

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



Plug component, Nominal current: 4 A, Rated voltage (III/2): 160 V, Number of positions: 5, Pitch: 2.5 mm, Connection method: Spring-cage connection, Color: green, Contact surface: Tin

---

#### Terminal marking

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



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: Plotter, Mounting type: Snap into flat marker groove, for terminal block width: 5 mm, Lettering field: 5.1 x 5.2 mm

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



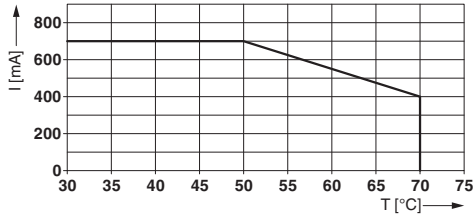
Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: Plotter, Mounting type: Snap into flat marker groove, for terminal block width: 5 mm, Lettering field: 5.15 x 5.15 mm

---

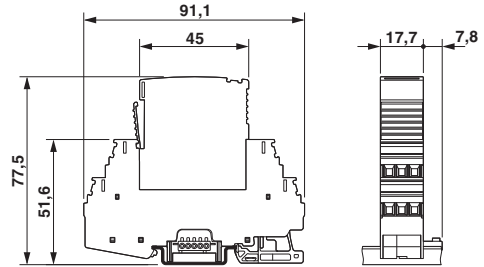
### Drawings

# Surge protection device - PT-IQ-2X2+F-24DC-UT - 2800981

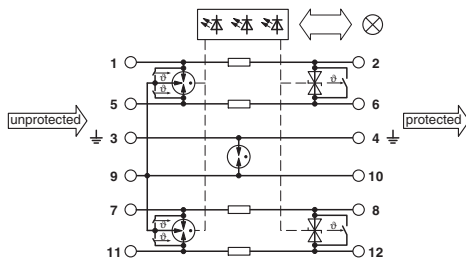
Diagram



Dimensioned drawing



Circuit diagram



Catalog photo



Figure may contain other products.