

# PT-IQ-2X1+F-48DC-UT - Surge protection device



2800790

<https://www.phoenixcontact.com/us/products/2800790>

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

## 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                          | 2800790             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Sales key                            | CL22                |
| Product key                          | CL2151              |
| Catalog page                         | Page 133 (C-4-2019) |
| GTIN                                 | 4046356645133       |
| Weight per piece (including packing) | 112.166 g           |
| Weight per piece (excluding packing) | 107.8 g             |
| Customs tariff number                | 85363010            |
| Country of origin                    | DE                  |

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## 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                    |

#### Insulation characteristics

|                      |     |
|----------------------|-----|
| Overvoltage category | III |
| Pollution degree     | 2   |

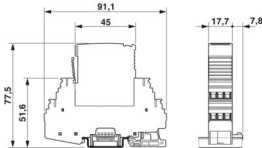
### Electrical properties

|                       |         |
|-----------------------|---------|
| Nominal voltage $U_N$ | 48 V DC |
|-----------------------|---------|

### Connection data

|                                  |                     |
|----------------------------------|---------------------|
| Connection method                | Screw connection    |
| Screw thread                     | M3                  |
| Tightening torque                | 0.5 Nm              |
| Conductor cross section flexible | 0.2 mm² ... 2.5 mm² |
| Conductor cross section rigid    | 0.2 mm² ... 4 mm²   |
| 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)                                                      |
| Horizontal pitch    | 1 Div.                                                                               |

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## 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 |
| Maximum continuous voltage $U_C$                                             | 53 V DC                                                                            |
|                                                                              | 37 V AC                                                                            |
| Rated current                                                                | 300 mA                                                                             |
| Operating effective current $I_C$ at $U_C$                                   | $\leq 6 \mu A$ (per path)                                                          |
| Residual current $I_{PE}$                                                    | $\leq 1 \mu A$                                                                     |
| 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-earth)                                  | $\leq 750 V$ (C1 - 1 kV / 500 A)                                                   |
|                                                                              | $\leq 950 V$ (C2 - 10 kV / 5 kA)                                                   |
|                                                                              | $\leq 850 V$ (C3 - 25 A)                                                           |
| Voltage protection level $U_p$ (line-signalground)                           | $\leq 105 V$ (C1 - 1 kV / 500 A)                                                   |
|                                                                              | $\leq 160 V$ (C2 - 10 kV / 5 kA)                                                   |
|                                                                              | $\leq 90 V$ (C3 - 25 A)                                                            |
| Voltage protection level $U_p$ static (line-earth)                           | $\leq 200 V$ (C2 - 10 kV / 5 kA)                                                   |
| Response time $t_A$ (line-earth)                                             | $\leq 100 ns$                                                                      |
| Response time $t_A$ (line-signalground)                                      | $\leq 1 ns$                                                                        |
| Input attenuation aE, asym.                                                  | typ. 0.3 dB ( $\leq 530 kHz / 150 \Omega$ )                                        |
| Cut-off frequency $f_g$ (3 dB), asym. (signal ground) in 150 $\Omega$ system | typ. 1.9 MHz                                                                       |
| Capacity (Core-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-earth)                                              | C1 - 1 kV / 500 A                                                                  |
|                                                                              | C2 - 10 kV / 5 kA                                                                  |
|                                                                              | C2 - 10 kA                                                                         |
|                                                                              | C3 - 25 A                                                                          |
|                                                                              | D1 - 2.5 kA                                                                        |
|                                                                              | C1 - 1 kV / 500 A                                                                  |

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|                                        |                   |
|----------------------------------------|-------------------|
| Impulse durability (line-signalground) | 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         |

## 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 |
|---------------|-----------------|

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