

## Surge protection device - PT-IQ-3-HF+F-12DC-UT - 2800995


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Surge protection, consisting of protective plug and base element, with integrated multi-stage status indicator on the module for three signal wires with common reference potential. For HF applications and telecommunications interfaces without supply voltage (up to 90 Mbps).



### Key Commercial Data

|                                      |   |
|--------------------------------------|---|
| Packing unit                         | 1 STK   |
| GTIN                                 | <br>4 046356 667418 |
| GTIN                                 | 4046356667418   |
| Weight per Piece (excluding packing) | 140.000 g   |
| Custom tariff number                 | 85363010  |
| Country of origin                    | Germany   |

### 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                       |
| Altitude                                | ≤ 4000 m (amsl (above mean sea level)) |
| Degree of protection                    | IP20                                   |

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## Technical data

### General

|   |  |
|---|--|
| Housing material                                | PA 6.6   |
| Flammability rating according to UL 94          | V-0  |
| Color   | jet black RAL 9005   |
| Standards for clearances and creepage distances | IEC 60664-1  |
| 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 |

### Protective circuit

|  |  |
|--|--|
| IEC test classification  | C1                                       |
|  | C2                                       |
|  | C3                                       |
|  | D1                                       |
| Nominal voltage $U_N$  | 12 V DC                                  |
| Maximum continuous voltage $U_C$                                       | 15 V DC                                  |
|  | 10 V AC                                  |
| Rated current  | 600 mA (40 °C)                           |
| Operating effective current $I_C$ at $U_C$                             | $\leq 100 \mu\text{A}$ (per path)        |
| Residual current $I_{PE}$  | $\leq 10 \mu\text{A}$                    |
| Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (Core-Core)       | 10 kA                                    |
| Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (core-earth)      | 10 kA                                    |
| Pulse discharge current $I_{imp}$ (10/350) $\mu\text{s}$ (core-ground) | 2.5 kA                                   |
| Pulse discharge current $I_{imp}$ (10/350) $\mu\text{s}$ (core-GND)    | 2.5 kA                                   |
| Total discharge current $I_{total}$ (8/20) $\mu\text{s}$               | 20 kA                                    |
| Voltage protection level $U_p$ (core-core)                             | $\leq 40 \text{ V}$ (C3 - 25 A)          |
|  | $\leq 90 \text{ V}$ (C1 - 1 kV/500 A)    |
|  | $\leq 145 \text{ V}$ (C2 - 10 kV / 5 kA) |
|  | $\leq 40 \text{ V}$ (C3 - 50 A)          |
| Voltage protection level $U_p$ (core-ground)                           | $\leq 900 \text{ V}$ (C3 - 25 A)         |
|  | $\leq 730 \text{ V}$ (C1 - 1 kV/500 A)   |
|  | $\leq 900 \text{ V}$ (C2 - 10 kV / 5 kA) |
|  | $\leq 900 \text{ V}$ (C3 - 50 A)         |
| Voltage protection level $U_p$ (core-GND)                              | $\leq 90 \text{ V}$ (C1 - 1 kV/500 A)    |
|  | $\leq 145 \text{ V}$ (C2 - 10 kV / 5 kA) |
|  | $\leq 40 \text{ V}$ (C3 - 25 A)          |
|  | $\leq 40 \text{ V}$ (C3 - 50 A)          |

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### Technical data

#### Protective circuit

|   |  |
|---|--|
| Voltage protection level $U_p$ static (core-core)             | $\leq 55$ V (C1 - 1 kV/500 A)              |
| Voltage protection level $U_p$ static (core-GND)              | $\leq 55$ V (C1 - 1 kV/500 A)              |
| Response time $t_A$ (core-core)                               | $\leq 1$ ns                                |
| Response time $t_A$ (core-earth)                              | $\leq 1$ ns                                |
|   | $\leq 100$ ns                              |
| Input attenuation $a_E$ , sym.                                | typ. 0.3 dB ( $\leq 10$ MHz/150 $\Omega$ ) |
| Input attenuation $a_E$ , asym.                               | typ. 0.3 dB ( $\leq 10$ MHz/150 $\Omega$ ) |
| Cut-off frequency $f_g$ (3 dB), sym. in 150 Ohm system        | typ. 60 MHz                                |
| Cut-off frequency $f_g$ (3 dB), asym. (GND) in 150 Ohm system | typ. 60 MHz                                |
| Capacity (core-core)  | typ. 30 pF                                 |
| Capacity (Core-GND)   | typ. 30 pF                                 |
| Resistance in series  | 1.2 $\Omega \pm 5\%$                       |
| Surge protection fault message                                | Optical, multi-stage                       |
| Max. required back-up fuse                                    | 600 mA (FF)                                |
| Impulse durability (conductor-conductor)                      | C1 - 1 kV/500 A                            |
|   | C2 - 10 kV/5 kA                            |
|   | C3 - 50 A                                  |
| Impulse durability (conductor-ground)                         | C1 - 1 kV/500 A                            |
|   | C2 - 10 kV/5 kA                            |
|   | C3 - 50 A                                  |
|   | D1 - 2.5 kA                                |
| Impulse durability (conductor-GND)                            | C1 - 1 kV/500 A                            |
|   | C2 - 10 kV/5 kA                            |
|   | C3 - 50 A                                  |
|   | D1 - 2,5 kA                                |
| Pulse reset time (conductor-conductor)                        | $\leq 15$ ms                               |
| Pulse reset time (conductor-ground)                           | $\leq 15$ ms                               |
| Pulse reset time (conductor-GND)                              | $\leq 15$ 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                                   |

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## Technical data

### Connection, equipotential bonding

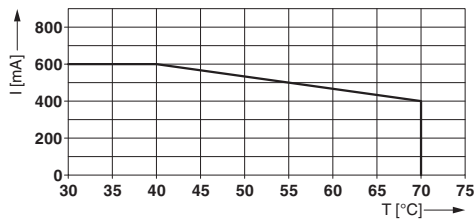
|                   |               |
|-------------------|---------------|
| Connection method | DIN rail NS35 |
|-------------------|---------------|

### Standards and Regulations

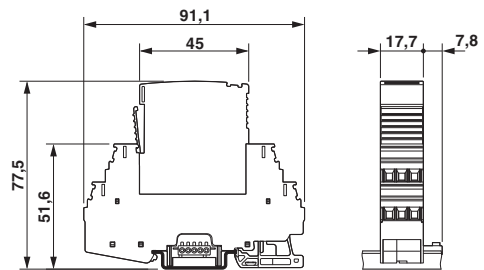
|                          |                                       |
|--------------------------|---------------------------------------|
| Standards/specifications | IEC 61643-21 2000 + A1:2008 + A2:2012 |
|                          | EN 61643-21 2001 + A1:2009            |
|                          | EN 61000-6-2 2007 + A1:2011           |
|                          | EN 61000-6-3 2005                     |

## Drawings

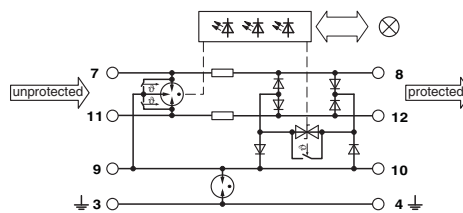
Diagram



Dimensional drawing



Circuit diagram



## 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 |

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## Classifications

eCl@ss

|            |          |
|------------|----------|
| eCl@ss 9.0 | 27130807 |
|------------|----------|

## ETIM

|          |          |
|----------|----------|
| ETIM 3.0 | EC000943 |
| ETIM 4.0 | EC000943 |
| ETIM 5.0 | EC000943 |
| ETIM 6.0 | EC000943 |

## UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30212010 |
| UNSPSC 7.0901 | 39121610 |
| UNSPSC 11     | 39121610 |
| UNSPSC 12.01  | 39121610 |
| UNSPSC 13.2   | 39121620 |

## Approvals

Approvals

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Approvals

UL Listed

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Ex Approvals

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## Approval details

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

## Accessories

Accessories

Device marking

## Surge protection device - PT-IQ-3-HF+F-12DC-UT - 2800995

### 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

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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

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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

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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

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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

## Surge protection device - PT-IQ-3-HF+F-12DC-UT - 2800995

### Accessories

#### 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

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### Mounting material

Electronic housing - 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



Plug component, nominal current: 4 A, rated voltage (III/2): 160 V, 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: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.1 x 5.2 mm

## Surge protection device - PT-IQ-3-HF+F-12DC-UT - 2800995

### Accessories

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

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### Necessary add-on products

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 device - PT-IQ-3-HF+F-12DC-UT - 2800995

### Accessories

Surge protection plug - PT-IQ-3-HF-12DC-P - 2800784



Surge protection plug with integrated multi-stage status indicator on the module for three signal wires. For HF applications. Nominal voltage: 12 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.