

## Surge protection device - PT-IQ-2X2+F-12DC-UT - 2800985

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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



### Key Commercial Data

Packing unit	1 STK
Custom tariff number	85363010
Country of origin	Germany

### Technical data

#### Dimensions

Height	91 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
Flammability rating according to UL 94	V-0
Color	jet black RAL 9005

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### Technical data

#### General

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

#### Additional descriptions

Note	Remote signaling as well as the power supply of the T-BUS are established by snapping the module onto the T-BUS.
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#### 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
Nominal current $I_N$	700 mA (50 °C)
Rated current	700 mA (50 °C)
Operating effective current $I_C$ at $U_C$	$\leq 1 \mu\text{A}$ (in the signal circuit)
Residual current $I_{PE}$	$\leq 1 \mu\text{A}$
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
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (Core-GND)	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)	$\leq 65 \text{ V}$ (C1 - 1 kV/500 A)
	$\leq 95 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 110 \text{ V}$ (C2 - 10 kA)
	$\leq 35 \text{ V}$ (C3 - 25 A)
	$\leq 40 \text{ V}$ (C3 - 50 A)
Voltage protection level $U_p$ (core-ground)	$\leq 900 \text{ V}$ (C1 - 1 kV/500 A)
	$\leq 1300 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 1200 \text{ V}$ (C2 - 10 kA)
	$\leq 1000 \text{ V}$ (C3 - 25 A)
	$\leq 1300 \text{ V}$ (C3 - 100 A)
Voltage protection level $U_p$ (core-GND)	$\leq 600 \text{ V}$ (C1 - 1 kV/500 A)

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### Technical data

#### Protective circuit

	$\leq 750 \text{ V (C2 - 10 kV / 5 kA)}$
	$\leq 800 \text{ V (C2 - 10 kA)}$
	$\leq 700 \text{ V (C3 - 25 A)}$
	$\leq 800 \text{ V (C3 - 100 A)}$
Voltage protection level $U_p$ static (core-core)	$\leq 45 \text{ V (C1 - 1 kV/500 A)}$
	$\leq 50 \text{ V (C2 - 10 kA)}$
Response time $t_A$ (Core-Core)	$\leq 1 \text{ ns}$
Response time $t_A$ (Core-Earth)	$\leq 100 \text{ ns}$
	$\leq 100 \text{ ns}$
Input attenuation $aE$ , sym.	typ. $0.3 \text{ dB } (\leq 95 \text{ kHz/150 } \Omega)$
Cut-off frequency $f_g$ (3 dB), sym. in 150 Ohm system	typ. $600 \text{ kHz}$
Capacity (Core-Core)	typ. $4 \text{ nF}$
Resistance in series	$1.2 \Omega \pm 5 \%$
Max. required back-up fuse	$800 \text{ mA (FF)}$
Impulse durability (conductor-conductor)	C1 - $1 \text{ kV/500 A}$
	C2 - $10 \text{ kV/5 kA}$
	C2 - $10 \text{ kA}$
	C3 - $50 \text{ A}$
Impulse durability (conductor-ground)	C1 - $1 \text{ kV/500 A}$
	C2 - $10 \text{ kV/5 kA}$
	C2 - $10 \text{ kA}$
	C3 - $100 \text{ A}$
	D1 - $2,5 \text{ kA}$
Impulse durability (conductor-GND)	C1 - $1 \text{ kV/500 A}$
	C2 - $10 \text{ kV/5 kA}$
	C2 - $10 \text{ kA}$
	C3 - $100 \text{ A}$
	D1 - $2.5 \text{ kA}$
Pulse reset time (conductor-conductor)	$\leq 25 \text{ ms}$
Pulse reset time (conductor-ground)	$\leq 50 \text{ ms}$
Pulse reset time (conductor-GND)	$\leq 50 \text{ ms}$

#### Connection data

Connection method	Screw connection
Connection type IN	Screw terminal blocks
Connection type OUT	Screw terminal blocks
Screw thread	M3
Tightening torque	0.5 Nm

# Surge protection device - PT-IQ-2X2+F-12DC-UT - 2800985

## Technical data

### Connection data

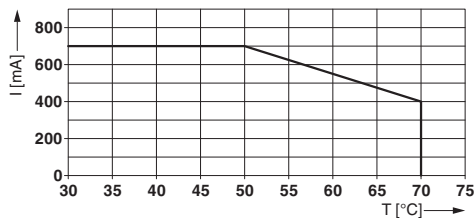
Stripping length	8 mm
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section solid	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12

### Standards and Regulations

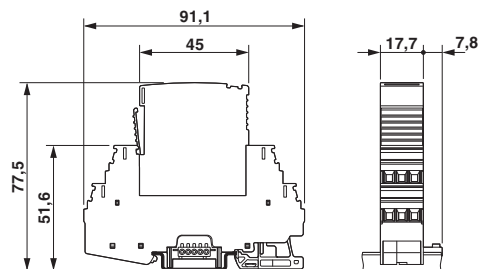
Standards/specifications	IEC 61643-21 2000 + A1:2008, modified
	EN 61643-21 2001 + A1:2009
	EN 61000-6-2 2007 + A1:2011
	EN 61000-6-3 2005

## Drawings

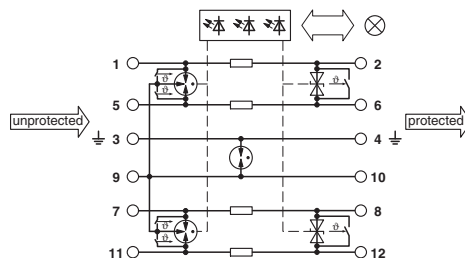
Diagram



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

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## Classifications

### eCl@ss

eCl@ss 6.0	27130807
eCl@ss 7.0	27130807
eCl@ss 8.0	27130807
eCl@ss 9.0	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
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
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## Accessories

Accessories

Device marking

## Surge protection device - PT-IQ-2X2+F-12DC-UT - 2800985

### Accessories

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

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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: 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

## Surge protection device - PT-IQ-2X2+F-12DC-UT - 2800985

### 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: Plotter, Mounting type: Snap into flat marker groove, for terminal block width: 5 mm, Lettering field: 5.1 x 5.2 mm

## Surge protection device - PT-IQ-2X2+F-12DC-UT - 2800985

### Accessories

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

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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 connections for conductor diameter 3 - 6 mm. Potential connection cable: 200 mm, black

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Shield connection - SSA 5-10 - 2839512



Shield fast connection for conductor diameters 5 - 10 mm. Potential connection cable: 200 mm, black

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### Spare parts



## Surge protection device - PT-IQ-2X2+F-12DC-UT - 2800985

### Accessories

Surge protection plug - PT-IQ-2X2-12DC-P - 2800803



Surge protection plug with integrated multi-stage status indicator on the module for two 2-wire floating signal circuits.  
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.