

## Surge protection connector - PT 2X2 HF-12DC-ST - 2839570

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Surge protection plug for the base element, normal mode voltage coarse and fine protection for two floating double wires in IT. Design: 12 V DC

### Why buy this product

- Plugs can be checked with CHECKMASTER
- Maximum ease of maintenance thanks to the two-piece design
- Base element remains an integral part of the installation
- Consistent plug-in signal circuit protection
- Protection for fieldbus systems, PROFIBUS, and signal circuits with 3 to 5-wire technology
- Impedance-neutral disconnection of plug for test and maintenance purposes



### Key commercial data

Packing unit	1
Minimum order quantity	1
Catalog page	Page 101 (TT-2011)
GTIN	 4 017918 591113
Custom tariff number	85363010
Country of origin	GERMANY

### Technical data

#### General

Housing material	PA
Inflammability class according to UL 94	V0
Color	black
Standards for air and creepage distances	DIN VDE 0110-1
Standards for air and creepage distances	IEC 60664-1
Total surge current (8/20) $\mu$ s	20 kA
Ambient temperature (operation)	-40 °C ... 85 °C
Mounting type	On base element
Design	DIN rail module, two-section, divisible
Number of positions	5

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## Technical data

### General

Degree of protection	IP20
Direction of action	Line-Line & Line-Signal Ground/Shield & optional Signal Ground/ Shield-Earth Ground
Arrester can be tested with CHECKMASTER from software version:	From SW rev. 1.00
Width	17.7 mm
Height	45 mm
Depth	52 mm
Pitch unit	1 Div.

### Protective circuit

IEC category	C1
IEC category	C2
IEC category	C3
IEC category	D1
VDE requirement class	C1
VDE requirement class	C2
VDE requirement class	C3
VDE requirement class	D1
Nominal voltage UN	12 V DC
Maximum continuous operating voltage UC	13 V DC
Maximum continuous operating voltage UC	9 V AC
Maximum continuous voltage UC (wire-wire)	13 V DC
Maximum continuous voltage UC (wire-wire)	9 V AC
Maximum continuous voltage UC (wire-ground)	13 V DC (with PT 2x2-BE)
Nominal current IN	450 mA (45°C)
Operating effective current IC at UC	≤ 5 μA
Ground conductor current IPE	≤ 4 μA (with PT 2x2-BE)
Ground conductor current IPE	≤ 1 μA (with PT 2x2+F-BE)
Nominal discharge surge current In (8/20) μs (Core-Core)	10 kA
Nominal discharge surge current In (8/20) μs (Core-Earth)	10 kA
Total surge current (8/20) μs	20 kA
Max. discharge surge current I <sub>max</sub> (8/20) μs maximum (Core-Core)	10 kA
Max. discharge surge current I <sub>max</sub> (8/20) μs maximum (Core-Earth)	10 kA
Nominal pulse current I <sub>an</sub> (10/1000) μs (Core-Core)	67 A
Lightning test current (10/350) μs, peak value limp	2.5 kA
Output voltage limitation at 1 kV/μs (Core-Core) spike	≤ 50 V
Output voltage limitation at 1 kV/μs (Core-Earth) spike	≤ 450 V
Output voltage limitation at 1 kV/μs (Core-Earth) spike	≤ 1 kV (with PT 2x2+F-BE)
Output voltage limitation at 1 kV/μs (Core-Core) static	≤ 25 V
Output voltage limitation at 1 kV/μs (Core-GND) static	≤ 450 V
Residual voltage at In, (conductor-conductor)	≤ 25 V

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## Technical data

### Protective circuit

Residual voltage with I <sub>an</sub> (10/1000)μs (conductor-conductor)	≤ 23 V
Protection level UP (Core-Core)	≤ 100 V (C2 (10 kV/5 kA))
Protection level UP (Core-Earth)	≤ 450 V (C2 (10 kV/5 kA))
Response time t <sub>A</sub> (Core-Core)	≤ 500 ns
Response time t <sub>A</sub> (Core-Earth)	≤ 500 ns
Input attenuation a <sub>E</sub> , sym.	0.2 dB (≤ 5 MHz)
Cut-off frequency f <sub>g</sub> (3 dB), sym. in 100 Ohm system	Typ. 70 MHz
Capacity (Core-Core)	Typ. 30 pF
Resistance in series	2.2 Ω
Max. required back-up fuse	500 mA (e.g. T in acc. with IEC 127-2/III)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Core)	C2 (10 kV/5 kA)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	C2 (10 kV/5 kA)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	D1 (2.5 kA)

### Connection data

Connection method	Screw connection (in connection with the base element)
Connection type IN	PLUGTRAB plug-in system
Connection type OUT	PLUGTRAB plug-in system
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.	0.2 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, protective circuit

Standards/regulations	IEC 61643-21
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## Classifications

### eclass

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

### etim

ETIM 2.0	EC000943
ETIM 3.0	EC000943
ETIM 4.0	EC000943

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## Classifications

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 / GOST / GL

Ex Approvals

UL Listed / cUL Listed / cULus Recognized

Approvals submitted

### Approval details

UL Listed	
Nominal current IN	0.45 A
Nominal voltage UN	24 V

GOST
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GL
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## Accessories

Accessories

Marking

## Surge protection connector - PT 2X2 HF-12DC-ST - 2839570

### Accessories

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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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

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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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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

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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: 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: 5.15 x 5.15 mm

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## Accessories

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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: 5.15 x 5.15 mm

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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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## Necessary add-on products

Surge protection base element - PT 2X2+F-BE - 2839224



Base element for protective plug PT with protective circuit for two 2-wire floating signal circuit, gas-filled surge arrester between the connections 3-4 (GND) and 9-10, for mounting on NS 35/7.5 and NS 35/15, housing width: 17.5 mm

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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



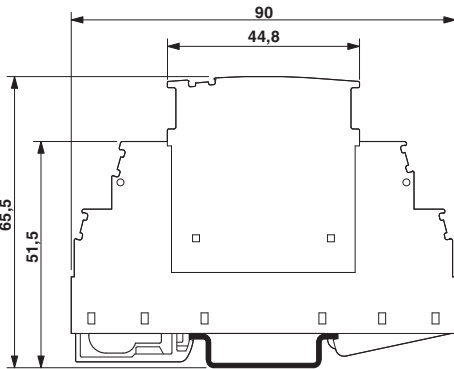
Shield fast connection for conductor diameters 5 - 10 mm. Potential connection cable: 200 mm, black

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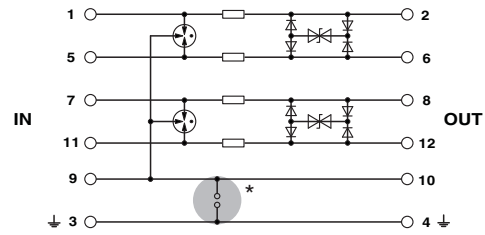
## Drawings

# Surge protection connector - PT 2X2 HF-12DC-ST - 2839570

Dimensioned drawing

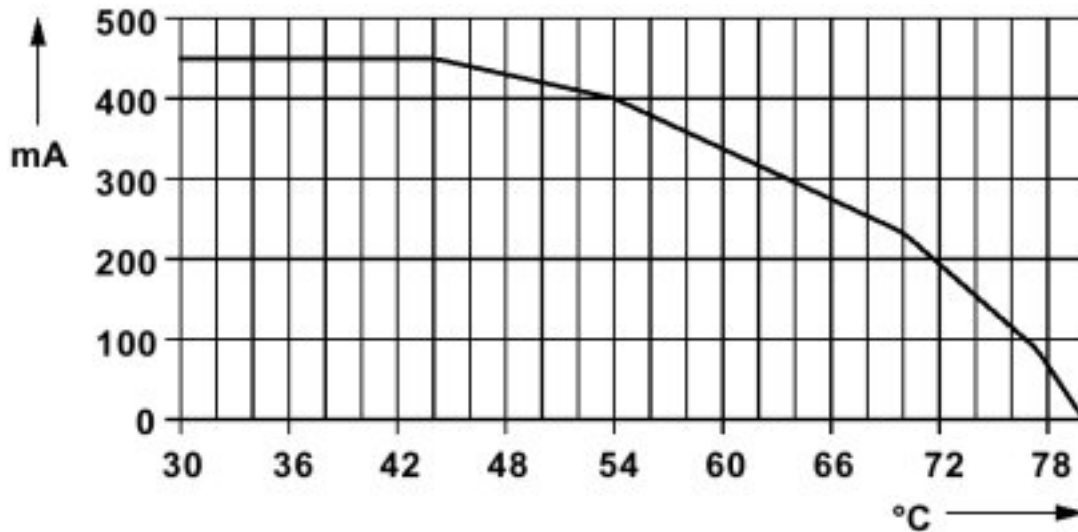


Circuit diagram



The figure shows the complete module consisting of a base element and connector

Diagram



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