

## Surge protection connector - PT 2X2-24DC-ST - 2838228

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PT protective connector with protective circuit for two 2-wire floating signal circuits. 24 V DC nominal voltage. HART-compatible.


The illustration shows version PT 2x2- 5DC-ST

### Product Features

- ✓ Plugs can be checked with CHECKMASTER
- ✓ Installed in conjunction with the PT 2x2...-BE base element
- ✓ 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 two separate floating signal circuits
- ✓ Impedance-neutral disconnection of plug for test and maintenance purposes



### Key commercial data

Packing unit	1 PCE
Minimum order quantity	10 PCE
Catalog page	Page 92 (TT-2011)
GTIN	 4 017918 182649
Custom tariff number	85363010
Country of origin	GERMANY

### Technical data

#### General

Housing material	PA 6.6
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### Technical data

#### General

Inflammability class according to UL 94	V0
Color	black
Standards for air and creepage distances	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
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 $U_N$	24 V DC
Maximum continuous operating voltage $U_C$	28 V DC
Maximum continuous operating voltage $U_C$	20 V AC
Maximum continuous voltage $U_C$ (wire-wire)	28 V DC
Maximum continuous voltage $U_C$ (wire-wire)	20 V AC
Maximum continuous voltage $U_C$ (wire-ground)	28 V DC
Maximum continuous voltage $U_C$ (wire-ground)	20 V AC
Nominal current $I_N$	450 mA (45°C)
Operating effective current $I_C$ at $U_C$	$\leq 5 \mu$ A
Ground conductor current $I_{PE}$	$\leq 1 \mu$ A (BE: 2x2+F)
Ground conductor current $I_{PE}$	$\leq 4 \mu$ A
Nominal discharge surge current $I_n$ (8/20) $\mu$ s (Core-Core)	10 kA

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### Technical data

#### Protective circuit

Nominal discharge surge current $I_n$ (8/20) $\mu$ s (Core-Earth)	10 kA
Total surge current (8/20) $\mu$ s	20 kA
Max. discharge surge current $I_{max}$ (8/20) $\mu$ s maximum (Core-Core)	10 kA
Max. discharge surge current $I_{max}$ (8/20) $\mu$ s maximum (Core-Earth)	10 kA
Lightning test current (10/350) $\mu$ s, peak value $I_{imp}$	2.5 kA (per path)
Output voltage limitation at 1 kV/ $\mu$ s (Core-Core) spike	$\leq 40$ V
Output voltage limitation at 1 kV/ $\mu$ s (Core-Earth) spike	$\leq 450$ V
Output voltage limitation at 1 kV/ $\mu$ s (Core-Core) static	$\leq 40$ V
Residual voltage at $I_n$ , (conductor-conductor)	$\leq 40$ V
Residual voltage at $I_n$ , (conductor-GND)	$\leq 450$ V
Residual voltage with $I_{an}$ (10/1000) $\mu$ s (conductor-conductor)	$\leq 50$ V
Protection level $U_p$ (Core-Core)	$\leq 50$ V (C3 - 25 A)
Response time $t_A$ (Core-Core)	$\leq 1$ ns
Response time $t_A$ (Core-Earth)	$\leq 100$ ns
Input attenuation $a_E$ , sym.	0.5 dB ( $\leq 1$ MHz)
Cut-off frequency $f_g$ (3 dB), sym. in 50 Ohm system	typ. 6 MHz
Capacity (Core-Core)	1.4 nF
Resistance in series	2.2 $\Omega$ (Path 1-2/5-6)
Resistance in series	2.2 $\Omega$ (Path 7-8, 11-12)
Message: Surge protection fault	None
Max. required back-up fuse	500 mA (e.g. T (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-Core)	C3 (25 A)
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
Screw thread	M3
Tightening torque	0.8 Nm
Stripping length	8 mm
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>

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## Technical data

### Connection data

Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	12

### Connection, protective circuit

Standards/regulations	IEC 61643-21
Standards/regulations	DIN EN 61643-21
Standards/regulations	UL 497B

## Classifications

### ETIM

ETIM 2.0	EC000943
ETIM 3.0	EC000943
ETIM 4.0	EC000943
ETIM 5.0	EC000943

### UNSPSC

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

### 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

## Approvals

### Approvals

Approvals

UL Listed / GOST / GL

# Surge protection connector - PT 2X2-24DC-ST - 2838228

## Approvals

Ex Approvals

UL Listed / cUL Listed / ATEX / cULus Listed

Approvals submitted

## Approval details

UL Listed	
Nominal current I <sub>N</sub>	0.45 A
Nominal voltage U <sub>N</sub>	24 V

GOST
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GL
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## Accessories

Accessories

Marking

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

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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### Accessories

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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

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 connector - PT 2X2-24DC-ST - 2838228

### 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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### Required add-on products

Surge protection base element - PT 2X2-BE - 2839208



Base element for protective plug PT with protective circuit for two 2-wire floating signal circuit, bridge 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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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

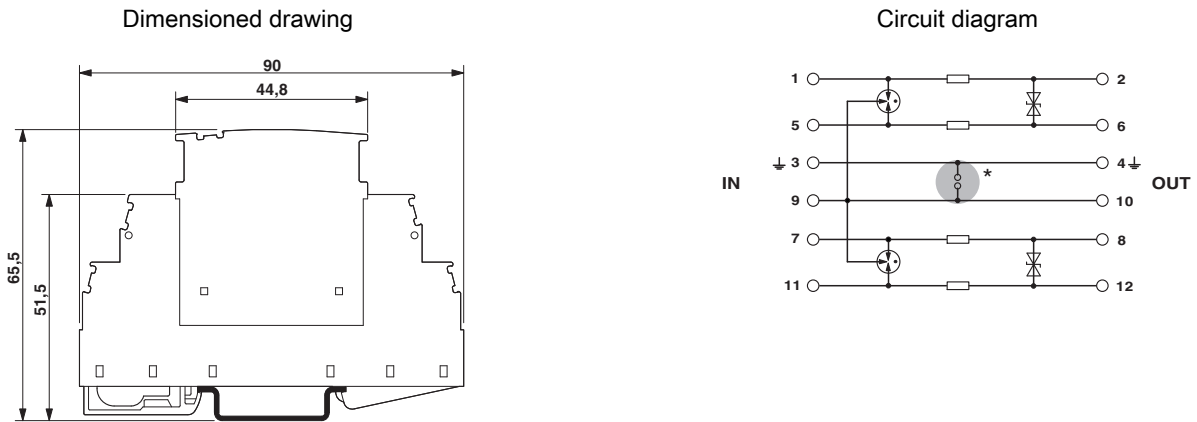


Shield fast connection for conductor diameters 5 - 10 mm. Potential connection cable: 200 mm, black

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## Accessories

## Drawings



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