

## Surge protection plug - PT 2X1-12AC-ST - 2856090

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Surge protection plug for the base element, coarse and fine protection for two signal wires with common reference potential, common mode voltage coarse protection to ground. Design: 12 V AC


The illustration shows the version PT 2x1- 5 DC-ST

### Why buy this product

- ✓ Plugs can be checked with CHECKMASTER
- ✓ Installed in conjunction with the PT 2x1...-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 conductors with common reference potential
- ✓ Impedance-neutral disconnection of plug for test and maintenance purposes



### Key commercial data

Packing unit	10 pc
GTIN	 4 017918 599157
Weight per Piece (excluding packing)	18.88 g
Custom tariff number	85363010
Country of origin	Germany
Note	Made to Order (non-returnable)

### Technical data

#### Dimensions

Height	45 mm
Width	17.7 mm
Depth	52 mm
Horizontal pitch	1 Div.

# Surge protection plug - PT 2X1-12AC-ST - 2856090

## Technical data

### Dimensions

Complete module height	90 mm
Complete module width	17.7 mm
Complete module depth	65.5 mm

### Ambient conditions

Ambient temperature (operation)	-40 °C ... 85 °C
Degree of protection	IP20

### General

Housing material	PA 6.6
Inflammability class according to UL 94	V0
Color	black
Standards for air and creepage distances	VDE 0110-1
	IEC 60664-1
Mounting type	On base element
Type	DIN rail module, two-section, divisible
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

### Protective circuit

IEC test classification	C1
	C2
	C3
	D1
VDE requirement class	C1
	C2
	C3
	D1
Nominal voltage $U_N$	12 V AC
Maximum continuous operating voltage $U_C$	18 V DC
	13 V AC
Maximum continuous voltage $U_C$ (wire-ground)	18 V DC
	13 V AC
Nominal current $I_N$	300 mA (45°C)
Operating effective current $I_C$ at $U_C$	$\leq 5 \mu A$
Residual current $I_{PE}$	$\leq 1 \mu A$ (BE: 2x1+F)
	$\leq 10 \mu A$ (Directly grounded)
Nominal discharge current $I_n$ (8/20) $\mu s$ (Core-Earth)	10 kA
Total surge current (8/20) $\mu s$	20 kA
Max. discharge current $I_{max}$ (8/20) $\mu s$ maximum (Core-Earth)	10 kA
Nominal pulse current $I_{an}$ (10/1000) $\mu s$ (Core-Earth)	49 A

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## Technical data

### Protective circuit

Impulse discharge current (10/350)# $\mu$ s, peak value $I_{imp}$	2.5 kA (per path)
Output voltage limitation at 1 kV/ $\mu$ s (Core-Earth) spike	$\leq 30$ V
Output voltage limitation at 1 kV/ $\mu$ s (Core-Earth) static	$\leq 25$ V
Residual voltage at $I_n$ , (conductor-ground)	$\leq 31$ V
Voltage protection level $U_p$ (core-ground)	$\leq 70$ V (C2 - 10 kV/5 kA)
Response time $t_A$ (Core-Earth)	$\leq 1$ ns
Input attenuation $a_E$ , asym.	0.5 dB ( $\leq 700$ kHz)
Cut-off frequency $f_g$ (3 dB), asym. (PE) in 50 Ohm system	typ. 4 MHz
Capacity (Core-Earth)	1.3 nF
Resistance in series	4.7 $\Omega$ (1-2/5-6/7-8/11-12)
Surge protection fault message	None
Max. required back-up fuse	315 mA (e.g. T ( IEC 127-2/III))
Impulse durability (conductor-ground)	C2 - 10 kV/5 kA
	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>
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	12

### Standards and Regulations

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

## 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

### ETIM

ETIM 2.0	EC000943
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 / EAC

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#### Ex Approvals

UL Listed / cUL Listed / cULus Listed

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#### Approvals submitted

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## Approval details

UL Listed	
Nominal current I <sub>N</sub>	0.3 A
Nominal voltage U <sub>N</sub>	17 V

EAC
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## Surge protection plug - PT 2X1-12AC-ST - 2856090

### Accessories

#### Accessories

#### Device marking

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

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#### Marker pen

## Surge protection plug - PT 2X1-12AC-ST - 2856090

### 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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### 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

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

Surge protection base element - PT 2X1-BE - 2856139



Base element for protective plug PT with protective circuit for 2 conductors of signal circuits grounded on one side. Mounting on NS 35/7.5 und NS 35/15, housing width: 17.5 mm.

Surge protection base element - PT 2X1+F-BE - 2856142



Base element for protective plug PT with protective circuit for 2 conductors of signal circuits grounded on one side. Integrated gas arrester as coarse protection between GND and PE. Mounting on NS 35/7.5 und NS 35/15, housing width: 17.5 mm.

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### Additional products

# Surge protection plug - PT 2X1-12AC-ST - 2856090

## Accessories

Shield connection - SSA 3-6 - 2839295



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

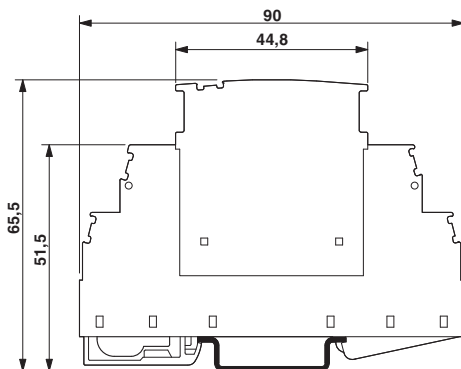
Shield connection - SSA 5-10 - 2839512



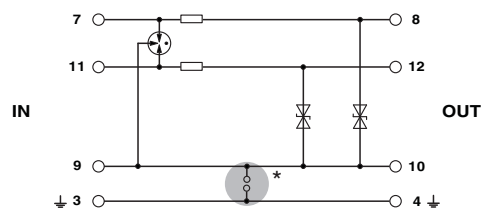
Shield fast connection for conductor diameters 5 - 10 mm. Potential connection cable: 200 mm, black

## Drawings

Dimensioned drawing



Circuit diagram



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