

Surge protection plug - PT 3-PB-ST - 2858030

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Surge protection plug for the base element, normal mode voltage coarse and fine protection for two floating signal wires in IT, common mode voltage coarse protection to ground.

Product Features

- 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
- Protection for fieldbus systems, PROFIBUS, and signal circuits with 3 to 5-wire technology
- Consistent plug-in signal circuit protection
- Impedance-neutral disconnection of plug for test and maintenance purposes



Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	20.68 g
Custom tariff number	85363090
Country of origin	Germany

Technical data

Dimensions

Height	45 mm
Width	17.7 mm
Depth	52 mm
Horizontal pitch	1 Div.
Complete module height	90 mm
Complete module width	17.7 mm

Surge protection plug - PT 3-PB-ST - 2858030

Technical data

Dimensions

Complete module depth	65.5 mm
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Ambient conditions

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

General

Housing material	PA
Flammability rating according to UL 94	V-0
Color	black
Standards for clearances and creepage distances	DIN EN 61664-1 IEC 60664-1
Mounting type	On base element
Type	DIN rail module, two-section, divisible
Number of positions	2
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. 1.10

Protective circuit

IEC test classification	C1 C2 C3 D1
VDE requirement class	C1 C2 C3 D1
Nominal voltage U_N	5 V DC
Maximum continuous voltage U_C	5.2 V DC 3.6 V AC
Maximum continuous voltage U_C (wire-wire)	5.2 V DC 3.6 V AC
Maximum continuous voltage U_C (wire-ground)	5.2 V DC (PT 1x2-BE) 3.6 V AC (PT 1x2-BE)
Nominal current I_N	450 mA (45°C)
Operating effective current I_C at U_C	$\leq 300 \mu\text{A}$
Residual current I_{PE}	$\leq 300 \mu\text{A}$ (PT 1x2-BE) $\leq 1 \mu\text{A}$ (PT 1x2+F-BE)

Surge protection plug - PT 3-PB-ST - 2858030

Technical data

Protective circuit

Nominal discharge current I_n (8/20) μ s (Core-Core)	10 kA
Nominal discharge current I_n (8/20) μ s (Core-Earth)	10 kA
Total surge current (8/20) μ s	20 kA
Max. discharge current I_{max} (8/20) μ s maximum (Core-Core)	10 kA
Max. discharge current I_{max} (8/20) μ s maximum (Core-Earth)	10 kA
Nominal pulse current I_{an} (10/1000) μ s (Core-Core)	90 A
Impulse discharge current (10/350) μ s, peak value I_{imp}	2.5 kA
Output voltage limitation at 1 kV/ μ s (Core-Core) spike	≤ 55 V
Output voltage limitation at 1 kV/ μ s (Core-Earth) spike	≤ 55 V (PT 1x2-BE)
	≤ 700 V (PT 1x2+F-BE)
Output voltage limitation at 1 kV/ μ s (Core-Core) static	≤ 15 V
Output voltage limitation at 1 kV/ μ s (Core-Earth) static	≤ 15 V
	≤ 30 V (PT 1x2+F-BE)
Residual voltage at I_n (conductor-conductor)	≤ 15 V
Residual voltage at I_n (conductor-ground)	≤ 30 V (PT 1x2-BE)
Residual voltage at I_n (conductor-GND)	≤ 15 V (PT 1x2-BE)
Residual voltage with I_{an} (10/1000) μ s (conductor-conductor)	≤ 15 V
Residual voltage with I_{an} (10/1000) μ s (conductor-GND)	≤ 15 V
Voltage protection level U_p (core-core)	≤ 70 V (C1 - 1 kV/500 A)
	≤ 45 V (C3 - 25 A)
	≤ 100 V (C2 - 10 kV/5 kA)
	≤ 70 V (6 kV/3 kA)
Voltage protection level U_p (core-ground)	≤ 80 V (C1 - 1 kV/500 A)
	≤ 110 V (C2 - 10 kV/5 kA)
	≤ 100 V (6 kV/3 kA)
	≤ 45 V (C3 - 25 A)
Voltage protection level U_p (core-GND)	≤ 45 V (C3 - 25 A)
Response time t_A (Core-Core)	≤ 500 ns
Response time t_A (Core-Earth)	≤ 500 ns
	≤ 500 ns
Input attenuation a_E , sym.	typ. 0.3 dB (≤ 5 MHz / 100 Ω)
Cut-off frequency f_g (3 dB), sym. in 100 Ohm system	typ. 60 MHz
Capacity (Core-Core)	typ. 30 pF
Resistance in series	2.2 $\Omega \pm 10$ % (7-8/11-12)
Surge protection fault message	None
Max. required back-up fuse	500 mA (e.g. T in acc. with IEC 127-2/III)
Impulse durability (conductor-conductor)	C2 - 10 kV/5 kA

Surge protection plug - PT 3-PB-ST - 2858030

Technical data

Protective circuit

	C3 (90 A)
Impulse durability (conductor-ground)	C2 - 10 kV/5 kA
	C3 (90 A)
	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 flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section solid	0.2 mm ² ... 4 mm ²
Conductor cross section AWG	24 ... 12

Connection, equipotential bonding

Stripping length	8 mm
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	4 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12

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
eCl@ss 9.0	27130807

Surge protection plug - PT 3-PB-ST - 2858030

Classifications

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


Approvals

UL Listed / GL / EAC / EAC

Ex Approvals

Approvals submitted

Approval details

UL Listed 

GL

EAC

EAC

Surge protection plug - PT 3-PB-ST - 2858030

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

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

Surge protection plug - PT 3-PB-ST - 2858030

Accessories

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

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

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

Required add-on products

Surge protection plug - PT 3-PB-ST - 2858030

Accessories

Surge protection base element - PT 1X2-BE - 2856113



Base element for protective plug PT with protective circuit for a 2-core floating signal circuit. Mounting on NS 35/7.5 und NS 35/15, housing width: 17.5 mm.

Surge protection base element - PT 1X2+F-BE - 2856126



Base element for protective plug PT with protective circuit for a 2-core floating signal circuit. 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.

Additional products

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

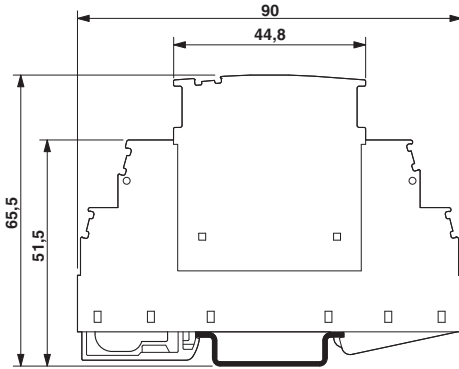


Shield fast connection for conductor diameters 5 - 10 mm. Potential connection cable: 200 mm, black

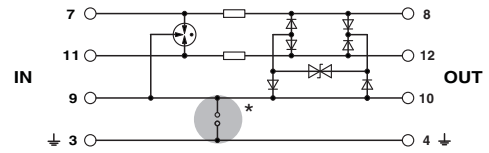
Drawings

Surge protection plug - PT 3-PB-ST - 2858030

Dimensional drawing

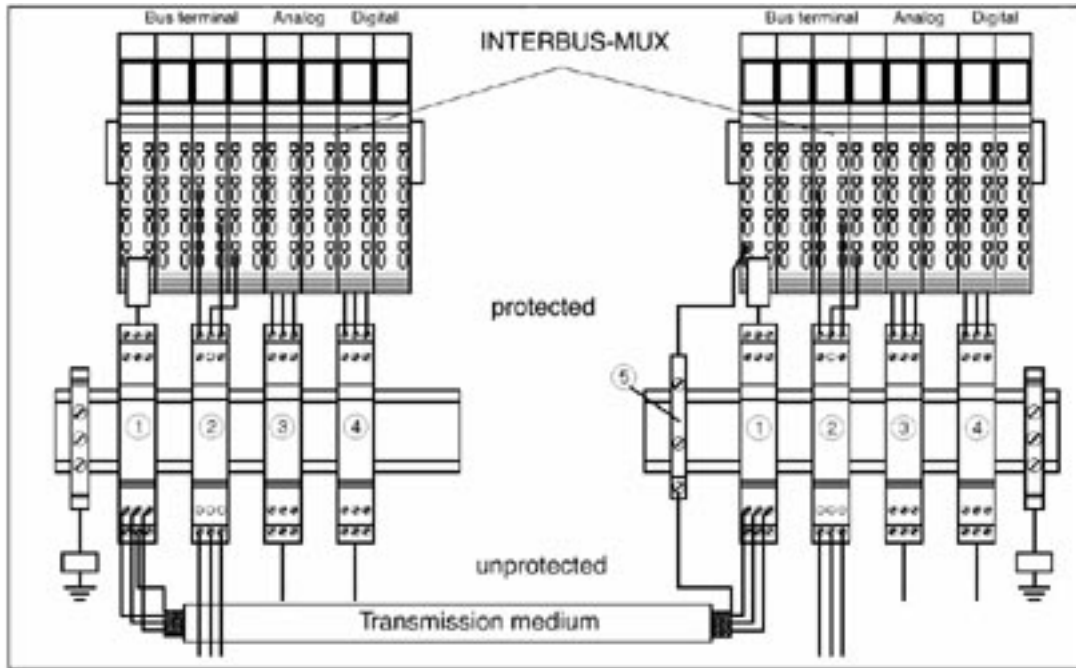


Circuit diagram



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

Application drawing



- ① PT 3-PB-ST to PT 1x2+F-BE
- ② PT 2-PE/S-24AC-ST to PT BE/FM
- ③ PT 2x2-24DC-ST to PT 2x2-BE
- ④ PT 4x1-24DC-ST to PT 4x1-BE
- ⑤ TT-SLKK5-F/110AC
When the ground potential is the same, the shield can be connected to terminal 3 of the PT 3-PB. The TT-SLKK5-F... is no longer necessary

Connecting M-UFB IBS-MUX to the field multiplexer

Mouser Electronics

Authorized Distributor

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