

Surge protection connector - 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

package_quantity	10
GTIN	4017918878030

Technical data

Dimensions

Height	45 mm
Width	17.7 mm
Depth	52 mm
Pitch unit	1 Div.
Height	90 mm
Width	17.7 mm
Depth	65.5 mm

Ambient conditions

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

General

Housing material	PA
Inflammability class according to UL 94	V0
Color	black

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Technical data

General

Standards for air and creepage distances	DIN EN 61664-1
Standards for air and creepage distances	IEC 60664-1
Mounting type	On base element
Design	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
IEC test classification	C2
IEC test classification	C3
IEC test classification	D1
VDE requirement class	C1
VDE requirement class	C2
VDE requirement class	C3
VDE requirement class	D1
Nominal voltage U_N	5 V DC
Maximum continuous operating voltage U_C	5.2 V DC
Maximum continuous operating voltage U_C	3.6 V AC
Maximum continuous voltage U_C (wire-wire)	5.2 V DC
Maximum continuous voltage U_C (wire-wire)	3.6 V AC
Maximum continuous voltage U_C (wire-ground)	5.2 V DC (PT 1x2-BE)
Maximum continuous voltage U_C (wire-ground)	3.6 V AC (PT 1x2-BE)
Nominal current I_N	450 mA (45°C)
Operating effective current I_C at U_C	$\leq 300 \mu A$
Residual current I_{PE}	$\leq 300 \mu A$ (PT 1x2-BE)
Residual current I_{PE}	$\leq 1 \mu A$ (PT 1x2+F-BE)
Nominal discharge current I_n (8/20) μs (Core-Core)	10 kA
Nominal discharge current I_n (8/20) μs (Core-Earth)	10 kA
Total surge current (8/20) μs	20 kA
Max. discharge current I_{max} (8/20) μs maximum (Core-Core)	10 kA
Max. discharge current I_{max} (8/20) μs maximum (Core-Earth)	10 kA
Nominal pulse current I_{an} (10/1000) μs (Core-Core)	90 A
Impulse discharge current (10/350) μs , peak value I_{imp}	2.5 kA
Output voltage limitation at 1 kV/ μs (Core-Core) spike	$\leq 55 V$
Output voltage limitation at 1 kV/ μs (Core-Earth) spike	$\leq 55 V$ (PT 1x2-BE)
Output voltage limitation at 1 kV/ μs (Core-Earth) spike	$\leq 700 V$ (PT 1x2+F-BE)
Output voltage limitation at 1 kV/ μs (Core-Core) static	$\leq 15 V$
Output voltage limitation at 1 kV/ μs (Core-Earth) static	$\leq 15 V$

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Technical data

Protective circuit

Output voltage limitation at 1 kV/ μ s (Core-Earth) static	≤ 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)	≤ 100 V (C2 (10 kV/5 kA))
Voltage protection level U_p (Core-Core)	≤ 34 V (C3 - 25 A)
Voltage protection level U_p (Core-Earth)	≤ 100 V (C2 (10 kV/5 kA))
Voltage protection level U_p (Core-Earth)	≤ 34 V (C3 - 25 A)
Voltage protection level U_p (Core-GND)	≤ 38 V (C3 - 25 A)
Response time t_A (Core-Core)	≤ 500 ns
Response time t_A (Core-Earth)	≤ 500 ns
Response time t_A (Core-Earth)	≤ 500 ns
Input attenuation a_E , sym.	typ. 0.2 dB (≤ 5 MHz / 100 Ω)
Cut-off frequency f_g (3 dB), sym. in 100 Ohm system	typ. 70 MHz
Capacity (Core-Core)	typ. 30 pF
Resistance in series	2.2 $\Omega \pm 10$ %
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-Core)	C3 (90 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)	C3 (90 A)
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 ²
Conductor cross section stranded 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/kcmil min.	24
Conductor cross section AWG/kcmil max	12

classifications

eCl@ss

eCl@ss 4.0	27140201
eCl@ss 4.1	27130801
eCl@ss 5.0	27130801

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classifications

eCl@ss

eCl@ss 5.1	27130801
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

UL Listed / GOST / GL /

Approval details

UL Listed 

GOST 
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GL

accessories

Marker pen

X-PEN 0,35 - 0811228



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accessories

Terminal marking

ZBF 5:UNBEDRUCKT - 0808642



ZBF 5/WH-100:UNBEDRUCKT - 0808668



Labeled terminal marker

ZBF 5,LGS:FORTL.ZAHLEN - 0808671



ZBF 5,LGS:GERADE ZAHLEN - 0810821



ZBF 5,LGS:UNGERADE ZAHLEN - 0810863



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accessories

ZBF 5,QR:FORTL.ZAHLEN - 0808697



Device marking

ZBN 18:UNBEDRUCKT - 2809128



accessories

ZBF 15:SO/CMS - 0814717



ZBF 5:SO/CMS - 0808707



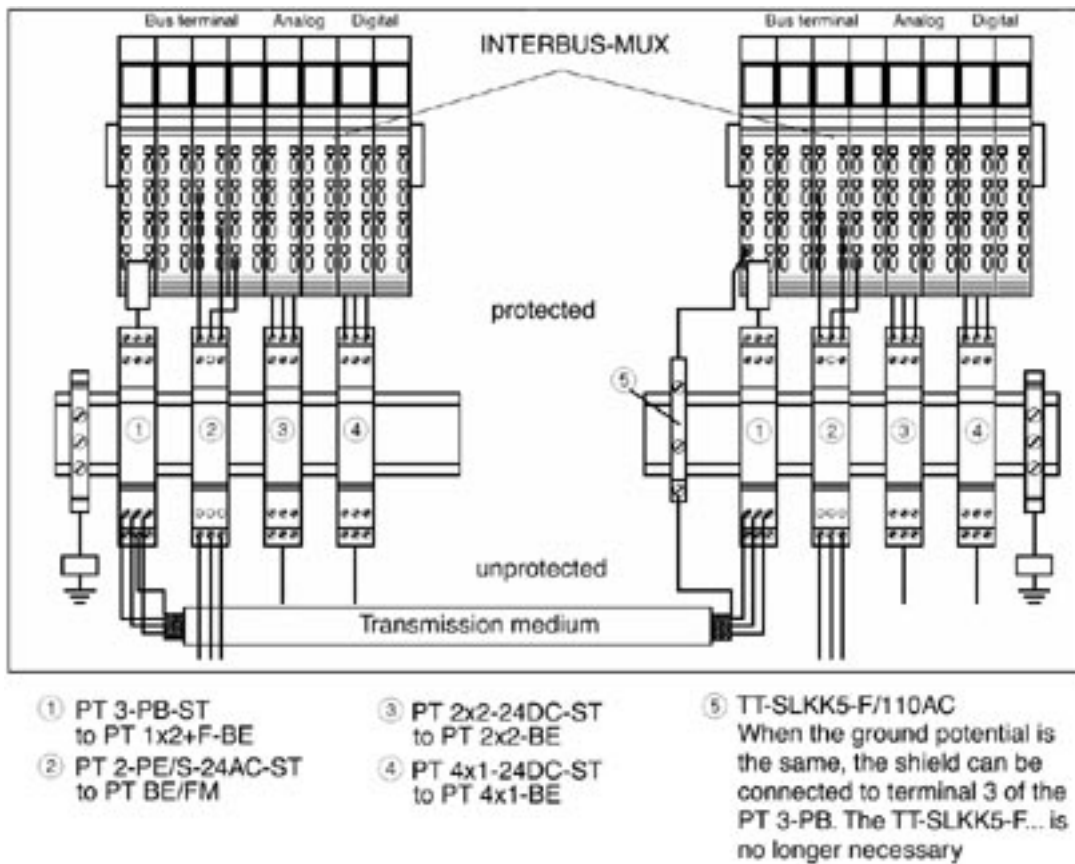
ZBN 18:SO/CMS - 0800763



Drawings

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

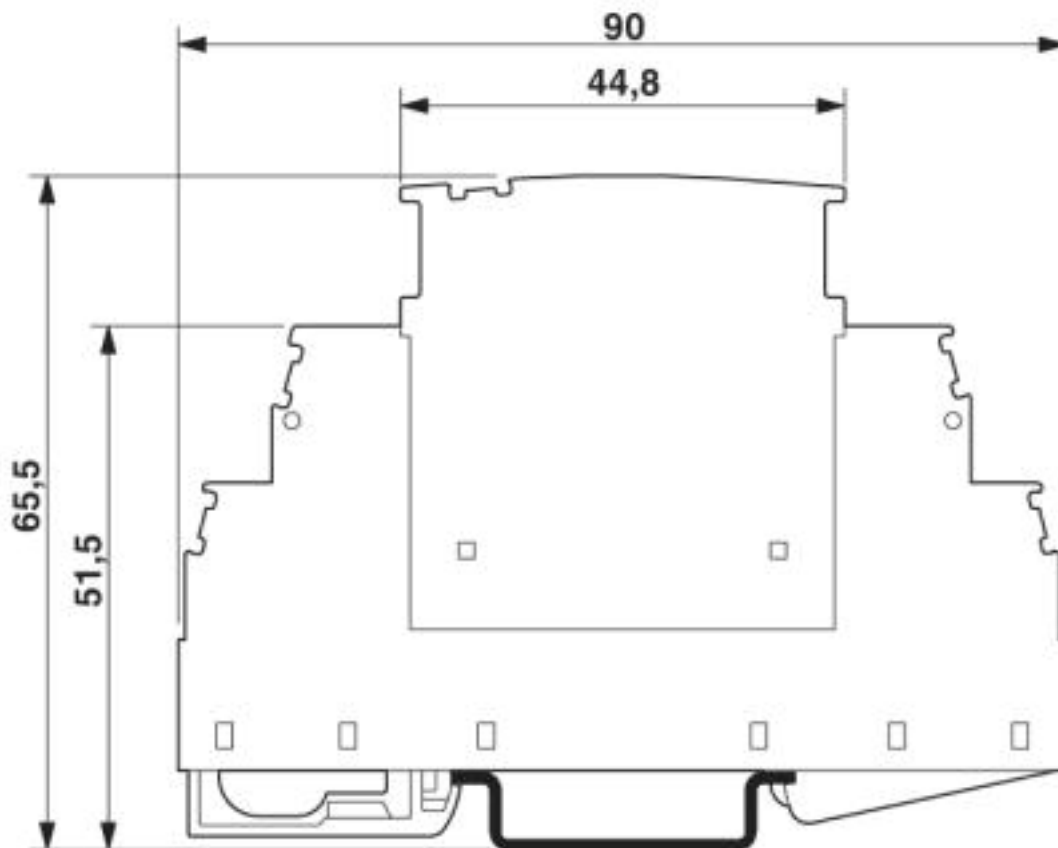
Application drawing



Connecting M-UFB IBS-MUX to the field multiplexer

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Dimensioned drawing



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

Circuit diagram

