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## 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.

### 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
- ✓ 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	10 STK
GTIN	 4 017918 878030
GTIN	4017918878030

### 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
Complete module depth	65.5 mm

#### Ambient conditions

Ambient temperature (operation)	-40 °C ... 85 °C
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# Surge protection plug - PT 3-PB-ST - 2858030

## Technical data

### Ambient conditions

Altitude	max. 2000 m
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	Male
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
Rated current	450 mA (45°C)
Operating effective current $I_C$ at $U_C$	$\leq 300 \mu\text{A}$
Residual current $I_{PE}$	$\leq 300 \mu\text{A}$ (with PT 1X2-BE)
	$\leq 1 \mu\text{A}$ (with PT 1X2+F-BE)
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (line-line)	10 kA
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (line-earth)	10 kA
Pulse discharge current $I_{imp}$ (10/350) $\mu\text{s}$	2.5 kA
Total discharge current $I_{total}$ (8/20) $\mu\text{s}$	20 kA
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (line-line)	10 kA
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (line-earth)	10 kA
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (line-line)	90 A
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-line) spike	$\leq 55 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-earth) spike	$\leq 55 \text{ V}$ (with PT 1X2-BE)
	$\leq 700 \text{ V}$ (with PT 1X2+F-BE)



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

### Technical data

#### Protective circuit

Output voltage limitation at 1 kV/μs (line-line) static	≤ 15 V
Output voltage limitation at 1 kV/μs (line-earth) static	≤ 15 V
	≤ 30 V (with PT 1X2+F-BE)
Residual voltage at I <sub>n</sub> (line-line)	≤ 15 V
Residual voltage at I <sub>n</sub> (line-earth)	≤ 30 V (with PT 1X2-BE)
Residual voltage at I <sub>n</sub> (line-signalground)	≤ 15 V (with PT 1X2-BE)
Residual voltage with I <sub>an</sub> (10/1000) μs (line-line)	≤ 15 V
Residual voltage with I <sub>an</sub> (10/1000) μs (line-signalground)	≤ 15 V
Voltage protection level U <sub>p</sub> (line-line)	≤ 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 <sub>p</sub> (line-earth)	≤ 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 <sub>p</sub> (line-signalground)	≤ 45 V (C3 - 25 A)
Response time t <sub>A</sub> (line-line)	≤ 500 ns
Response time t <sub>A</sub> (line-signalground)	≤ 500 ns
Response time t <sub>A</sub> (line-earth)	≤ 500 ns
Input attenuation aE, sym.	typ. 0.3 dB (≤ 5 MHz / 100 Ω)
Cut-off frequency f <sub>g</sub> (3 dB), sym. in 100 Ohm system	typ. 60 MHz
Capacity (line-line)	typ. 30 pF
Resistance in series	2.2 Ω ±10 % (7-8/11-12)
Max. required back-up fuse	500 mA (T)
Impulse durability (line-line)	C2 - 10 kV/5 kA
	C3 (90 A)
Impulse durability (line-earth)	C2 - 10 kV/5 kA
	C3 (90 A)
	D1 - 2.5 kA

#### Connection data

Connection method	Screw connection (in connection with the base element)
Screw thread	M3
Tightening torque	0.8 Nm
Stripping length	8 mm
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section solid	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12

#### Connection, equipotential bonding

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

## Technical data

### Connection, equipotential bonding

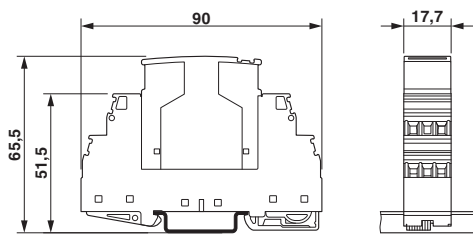
Stripping length	8 mm
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	4 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section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

### Standards and Regulations

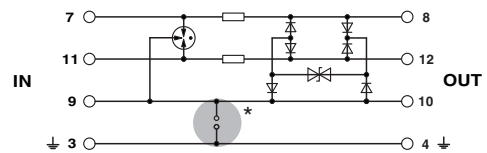
Standards/specifications	EN 61643-21/A1 2009
	IEC 61643-21/A1 2008

## Drawings

Dimensional drawing



Circuit diagram



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

## Approvals

### Approvals

#### Approvals

UL Listed / EAC / EAC / DNV GL

#### Ex Approvals

### Approval details

UL Listed



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 138168

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

### Approvals

EAC		EAC-Zulassung
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EAC		RU C- DE.A*30.B01561
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DNV GL	<a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a>	TAE00001N6
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