

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

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)



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.

### Your advantages

- ✓ 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
GTIN	 4 017918 878030
GTIN	4017918878030
Weight per Piece (excluding packing)	20.680 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.

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

### 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
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 $U_C$	$\leq 300 \mu A$
Residual current $I_{PE}$	$\leq 300 \mu A$ (with PT 1X2-BE) $\leq 1 \mu A$ (with PT 1X2+F-BE)
Nominal discharge current $I_n$ (8/20) $\mu s$ (line-line)	10 kA

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

### Technical data

#### Protective circuit

Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (line-earth)	10 kA
Pulse discharge current $I_{\text{imp}}$ (10/350) $\mu\text{s}$	2.5 kA
Total discharge current $I_{\text{total}}$ (8/20) $\mu\text{s}$	20 kA
Max. discharge current $I_{\text{max}}$ (8/20) $\mu\text{s}$ maximum (line-line)	10 kA
Max. discharge current $I_{\text{max}}$ (8/20) $\mu\text{s}$ maximum (line-earth)	10 kA
Nominal pulse current $I_{\text{an}}$ (10/1000) $\mu\text{s}$ (line-line)	90 A
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-line) spike	$\leq 55$ V
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-earth) spike	$\leq 55$ V (with PT 1X2-BE)
	$\leq 700$ V (with PT 1X2+F-BE)
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-line) static	$\leq 15$ V
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-earth) static	$\leq 15$ V
	$\leq 30$ V (with PT 1X2+F-BE)
Residual voltage at $I_n$ (line-line)	$\leq 15$ V
Residual voltage at $I_n$ (line-earth)	$\leq 30$ V (with PT 1X2-BE)
Residual voltage at $I_n$ (line-signalground)	$\leq 15$ V (with PT 1X2-BE)
Residual voltage with $I_{\text{an}}$ (10/1000) $\mu\text{s}$ (line-line)	$\leq 15$ V
Residual voltage with $I_{\text{an}}$ (10/1000) $\mu\text{s}$ (line-signalground)	$\leq 15$ V
Voltage protection level $U_p$ (line-line)	$\leq 70$ V (C1 - 1 kV/500 A)
	$\leq 45$ V (C3 - 25 A)
	$\leq 100$ V (C2 - 10 kV / 5 kA)
	$\leq 70$ V (6 kV / 3 kA)
Voltage protection level $U_p$ (line-earth)	$\leq 80$ V (C1 - 1 kV/500 A)
	$\leq 110$ V (C2 - 10 kV / 5 kA)
	$\leq 100$ V (6 kV / 3 kA)
	$\leq 45$ V (C3 - 25 A)
Voltage protection level $U_p$ (line-signalground)	$\leq 45$ V (C3 - 25 A)
Response time $t_A$ (line-line)	$\leq 500$ ns
Response time $t_A$ (line-signalground)	$\leq 500$ ns
Response time $t_A$ (line-earth)	$\leq 500$ ns
Input attenuation aE, sym.	typ. 0.3 dB ( $\leq 5$ MHz / 100 $\Omega$ )
Cut-off frequency $f_g$ (3 dB), sym. in 100 Ohm system	typ. 60 MHz
Capacity (line-line)	typ. 30 pF
Resistance per path	2.2 $\Omega \pm 10\%$ (7-8/11-12)
Max. required back-up fuse	500 mA (T)
Impulse durability (line-line)	C2 - 10 kV / 5 kA
	C3 - 90 A

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

### Technical data

#### Protective circuit

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

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

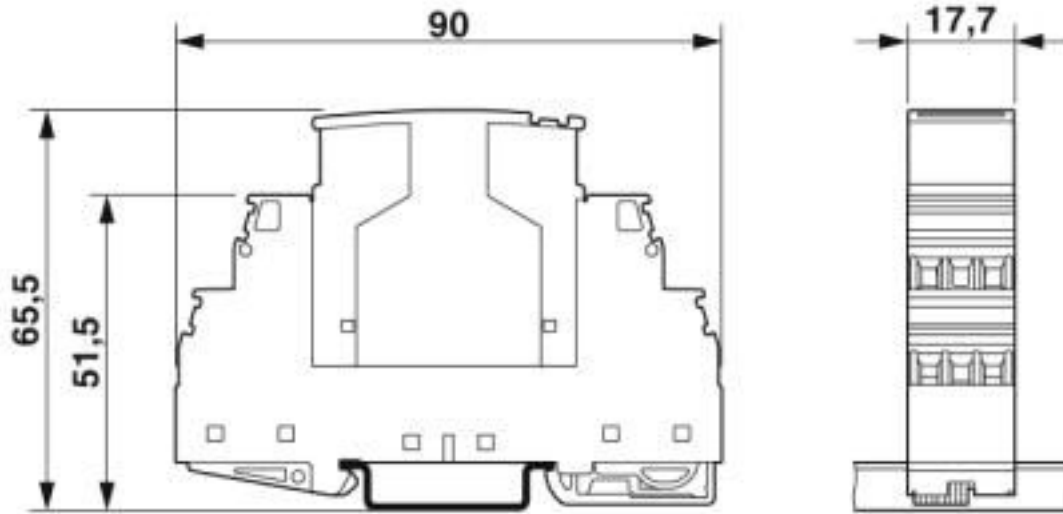
#### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

### Drawings

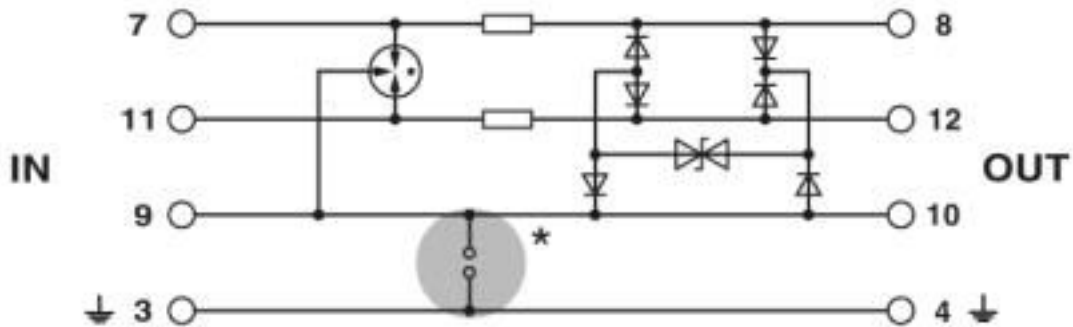
## Surge protection plug - PT 3-PB-ST - 2858030

Dimensional drawing



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

Circuit diagram



### Classifications

eCl@ss

eCl@ss 10.0.1	27130807
eCl@ss 4.0	27130800
eCl@ss 4.1	27130800
eCl@ss 5.0	27130800
eCl@ss 5.1	27130800
eCl@ss 6.0	27130800
eCl@ss 7.0	27130807
eCl@ss 8.0	27130807

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

## Classifications

eCl@ss

eCl@ss 9.0	27130807
------------	----------

## ETIM

ETIM 2.0	EC000943
ETIM 3.0	EC000943
ETIM 4.0	EC000943
ETIM 5.0	EC000943
ETIM 6.0	EC000943
ETIM 7.0	EC000943

## UNSPSC

UNSPSC 6.01	30212010
UNSPSC 7.0901	39121610
UNSPSC 11	39121610
UNSPSC 12.01	39121610
UNSPSC 13.2	39121620
UNSPSC 18.0	39121620
UNSPSC 19.0	39121620
UNSPSC 20.0	39121620
UNSPSC 21.0	39121620

## Approvals

### Approvals

---

Approvals

DNV GL / UL Listed / EAC / EAC

---

Ex Approvals

### Approval details

DNV GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	TAE00001N6
--------	--	---	------------

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

### Approvals

UL Listed		<a href="http://database.ul.com/cgi-bin/XYVV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYVV/template/LISEXT/1FRAME/index.htm</a>	FILE E 138168
-----------	--	---	---------------

EAC			EAC-Zulassung
-----	--	--	---------------

EAC			RU C- DE.A*30.B01561
-----	--	--	-------------------------

### Accessories

#### Accessories

#### Device marking

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128



Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap into tall marker groove, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

#### 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 size: 5.15 x 5.15 mm, Number of individual labels: 10

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 size: 5.15 x 5.15 mm, Number of individual labels: 10

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

### Accessories

---

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 size: 5.15 x 5.15 mm, Number of individual labels: 10

---

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 size: 5.15 x 5.15 mm, Number of individual labels: 10

---

### 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: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.1 x 5.2 mm, Number of individual labels: 10

---



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

### Accessories

Zack Marker strip, flat - ZBF 5/WH-100:UNBEDRUCKT - 0808668



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

---

### Necessary add-on products

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 connection for 3 ... 6 mm cable diameter. Potential connecting cable: 200 mm, 1 mm<sup>2</sup>, color: black

---

Shield connection - SSA 5-10 - 2839512



Shield fast connection for 5 ... 10 mm cable diameter. Potential connecting cable: 200 mm, 1 mm<sup>2</sup>, color: black

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

### Accessories

---

---

Phoenix Contact 2020 © - all rights reserved  
<http://www.phoenixcontact.com>