

## Surge protection plug - PT 3-HF-12DC-ST - 2858043

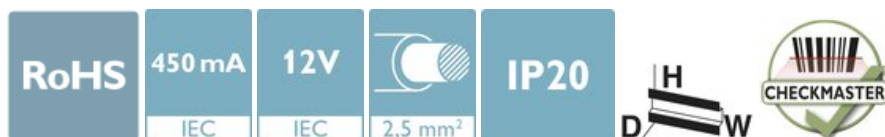
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Surge protection plug for the base element, normal mode voltage coarse and fine protection for two floating signal wires and ground in IT, common mode voltage coarse protection to ground/earth. Design: 12 V DC

### Your advantages

- ✓ Easy testing and documentation with CHECKMASTER 2 with pluggable protective modules
- ✓ Maximum ease of maintenance thanks to the two-piece design
- ✓ Easy selection for all possible demands in MCR applications with a complete product portfolio
- ✓ The signal is not influenced during maintenance work, thanks to the impedance-neutral insertion and removal of protective plugs



### Key Commercial Data

Packing unit	1 pc
GTIN	 4 017918 878047
GTIN	4017918878047
Weight per Piece (excluding packing)	20.730 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

# Surge protection plug - PT 3-HF-12DC-ST - 2858043

## Technical data

### Dimensions

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	3
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 $U_N$	12 V DC
Maximum continuous voltage $U_C$	14 V DC
	9.8 V AC
Rated current	450 mA (45 °C)
Operating effective current $I_C$ at $U_C$	$\leq 5 \mu A$
Residual current $I_{PE}$	$< 5 \mu A$ (with PT 1X2-BE)
	$< 1 \mu A$ (with PT 1X2+F-BE)
Nominal discharge current $I_n$ (8/20) $\mu s$ (line-line)	10 kA
Nominal discharge current $I_n$ (8/20) $\mu s$ (line-earth)	10 kA

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## Technical data

### Protective circuit

Nominal discharge current $I_n$ (8/20) $\mu$ s (line-signal ground)	10 kA
Pulse discharge current $I_{imp}$ (10/350) $\mu$ s	2.5 kA
Total discharge current $I_{total}$ (8/20) $\mu$ s	20 kA
Max. discharge current $I_{max}$ (8/20) $\mu$ s maximum (line-line)	10 kA
Max. discharge current $I_{max}$ (8/20) $\mu$ s maximum (line-earth)	10 kA
Nominal pulse current $I_{an}$ (10/1000) $\mu$ s (line-line)	67 A
Output voltage limitation at 1 kV/ $\mu$ s (line-line) spike	$\leq 55$ V
Output voltage limitation at 1 kV/ $\mu$ 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/ $\mu$ s (line-line) static	$\leq 25$ V
Output voltage limitation at 1 kV/ $\mu$ s (line-earth) static	$\leq 25$ V
	$\leq 40$ V (with PT 1X2+F-BE)
Residual voltage at $I_n$ (line-line)	$\leq 25$ V
Residual voltage at $I_n$ (line-earth)	$\leq 40$ V (with PT 1X2-BE)
Residual voltage at $I_n$ (line-signalground)	$\leq 25$ V (with PT 1X2-BE)
Residual voltage with $I_{an}$ (10/1000) $\mu$ s (line-line)	$\leq 25$ V
Residual voltage with $I_{an}$ (10/1000) $\mu$ s (line-signalground)	$\leq 25$ V
Voltage protection level $U_p$ (line-line)	$\leq 50$ V (C3 - 25 A)
	$\leq 80$ V (C1 - 1 kV / 500 A)
	$\leq 110$ V (C2 - 10 kV / 5 kA)
	$\leq 80$ V (6 kV / 3 kA)
Voltage protection level $U_p$ (line-earth)	$\leq 50$ V (C3 - 25 A)
	$\leq 85$ V (C1 - 1 kV / 500 A)
	$\leq 140$ V (C2 - 10 kV / 5 kA)
	$\leq 100$ V (6 kV / 3 kA)
Voltage protection level $U_p$ (line-signalground)	$\leq 50$ V (C3 - 25 A)
Response time $t_A$ (line-line)	$\leq 500$ 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 $\Omega$ 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 - 67 A
Impulse durability (line-earth)	C2 - 10 kV / 5 kA

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### Technical data

#### Protective circuit

	C3 - 67 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

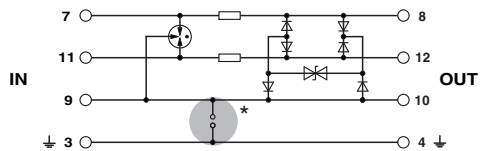
#### Environmental Product Compliance

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"

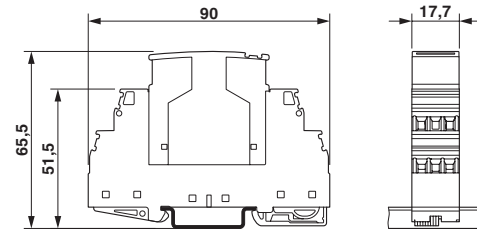
### Drawings

## Surge protection plug - PT 3-HF-12DC-ST - 2858043

Circuit diagram

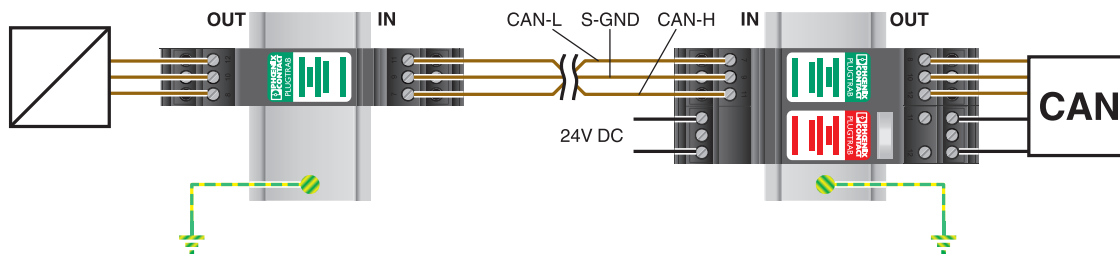


Dimensional drawing



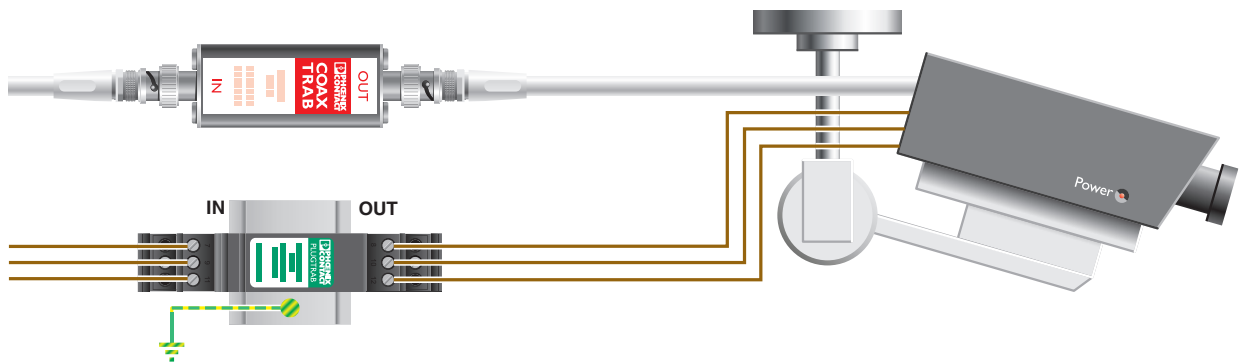
The figure shows the complete module consisting of a base element and connector

Application drawing



Surge protection plug - PT 3-HF-12DC-ST - 2858043

Application drawing



Classifications

eCl@ss

eCl@ss 10.0.1	27130807
eCl@ss 11.0	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 9.0	27130807

ETIM

ETIM 2.0	EC000943
ETIM 3.0	EC000943
ETIM 4.0	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

## Surge protection plug - PT 3-HF-12DC-ST - 2858043

### Classifications

#### UNSPSC

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
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UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 138168
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EAC			EAC-Zulassung
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EAC			RU C- DE.*09.B.00169
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### Accessories

#### Accessories

#### Device marking

## Surge protection plug - PT 3-HF-12DC-ST - 2858043

### Accessories

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128



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

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

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Zack Marker strip, flat - ZBF 5,LGS:GERADE ZAHLEN - 0810821



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: consecutive even 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

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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

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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



## Surge protection plug - PT 3-HF-12DC-ST - 2858043

### Accessories

#### 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

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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: PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.1 x 5.2 mm, Number of individual labels: 10

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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: snapped, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 1000

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#### 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 plug - PT 3-HF-12DC-ST - 2858043

### Accessories

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.

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### 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

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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