

## 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

The illustration shows the version PT 3-PB-ST

### 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)	20.73 GRM
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

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### Technical data

#### Dimensions

Complete module width	17.7 mm
Complete module 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
Standards for air 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	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 operating voltage $U_C$	14 V DC
	9.8 V AC
Maximum continuous voltage $U_C$ (wire-wire)	14 V DC
	9.8 V AC
Maximum continuous voltage $U_C$ (wire-ground)	14 V DC (PT 1x2-BE)
Nominal current $I_N$	450 mA (45°C)
Operating effective current $I_C$ at $U_C$	$\leq 5 \mu A$
Residual current $I_{PE}$	$< 5 \mu A$ (PT 1x2-BE)
	$< 1 \mu A$ (PT 1x2+F-BE)

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### Technical data

#### Protective circuit

Nominal discharge current $I_n$ (8/20) $\mu$ s (Core-Core)	10 kA
Nominal discharge current $I_n$ (8/20) $\mu$ s (Core-Earth)	10 kA
Nominal discharge current $I_n$ (8/20) $\mu$ s (Core-GND)	10 kA
Total surge current (8/20) $\mu$ s	20 kA
Max. discharge current $I_{max}$ (8/20) $\mu$ s maximum (Core-Core)	10 kA
Max. discharge current $I_{max}$ (8/20) $\mu$ s maximum (Core-Earth)	10 kA
Nominal pulse current $I_{an}$ (10/1000) $\mu$ s (Core-Core)	67 A
Impulse discharge current (10/350) $\mu$ s, peak value $I_{imp}$	2.5 kA
Output voltage limitation at 1 kV/ $\mu$ s (Core-Core) spike	$\leq 55$ V
Output voltage limitation at 1 kV/ $\mu$ s (Core-Earth) spike	$\leq 55$ V (PT 1x2-BE)
	$\leq 700$ V (PT 1x2+F-BE)
Output voltage limitation at 1 kV/ $\mu$ s (Core-Core) static	$\leq 25$ V
Output voltage limitation at 1 kV/ $\mu$ s (Core-Earth) static	$\leq 25$ V
	$\leq 40$ V (PT 1x2+F-BE)
Residual voltage at $I_n$ , (conductor-conductor)	$\leq 25$ V
Residual voltage at $I_n$ , (conductor-ground)	$\leq 40$ V (PT 1x2-BE)
Residual voltage at $I_n$ , (conductor-GND)	$\leq 25$ V (PT 1x2-BE)
Residual voltage with $I_{an}$ (10/1000) $\mu$ s (conductor-conductor)	$\leq 25$ V
Residual voltage with $I_{an}$ (10/1000) $\mu$ s (conductor-GND)	$\leq 25$ V
Voltage protection level $U_p$ (Core-Core)	$\leq 80$ V (C1 - 1 kV/500 A)
	$\leq 50$ V (C3 - 25 A)
	$\leq 100$ V (C2 (10 kV/5 kA))
	$\leq 80$ V (6 kV/3 kA)
Voltage protection level $U_p$ (Core-Earth)	$\leq 85$ V (C1 - 1 kV/500 A)
	$\leq 140$ V (C2 (10 kV/5 kA))
	$\leq 100$ V (6 kV/3 kA)
	$\leq 50$ V (C3 - 25 A)
Voltage protection level $U_p$ (Core-GND)	$\leq 50$ V (C3 - 25 A)
Response time $t_A$ (Core-Core)	$\leq 500$ ns
Response time $t_A$ (Core-Earth)	$\leq 500$ ns
Input attenuation $a_E$ , 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 (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)
Surge current resistance (conductor-conductor)	C2 - 10 kV/5 kA

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### Technical data

#### Protective circuit

	C3 (67 A)
Surge current resistance (conductor-ground)	C2 - 10 kV/5 kA
	C3 (67 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 stranded min.	0.2 mm <sup>2</sup>
Conductor cross section stranded 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/kcmil min.	24
Conductor cross section AWG/kcmil max	12

#### Connection, equipotential bonding

Stripping length	8 mm
Conductor cross section stranded min.	0.2 mm <sup>2</sup>
Conductor cross section stranded 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/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
eCl@ss 5.1	27130801
eCl@ss 6.0	27130807
eCl@ss 7.0	27130807
eCl@ss 8.0	27130807

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## 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

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#### Approvals

UL Listed / GOST / GL

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#### Ex Approvals


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Approvals submitted

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## Approval details

UL Listed 
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GOST 
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GL
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## Surge protection plug - PT 3-HF-12DC-ST - 2858043

### 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

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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: 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

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### 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

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### 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: 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



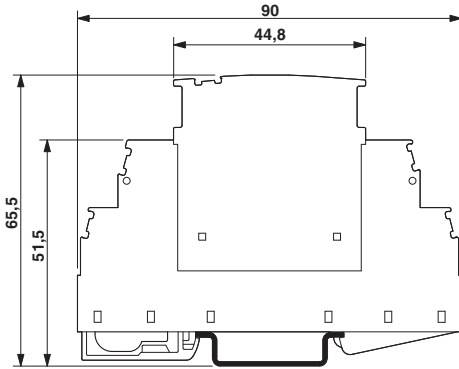
Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: Plotter, Mounting type: Snap into flat marker groove, for terminal block width: 5 mm, Lettering field: 5.15 x 5.15 mm

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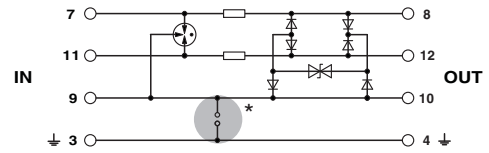
### Drawings

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

Dimensioned drawing



Circuit diagram



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

Catalog photo

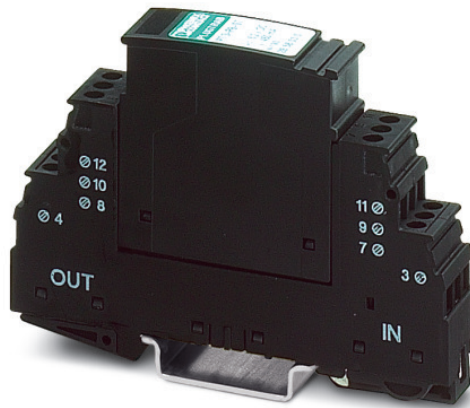
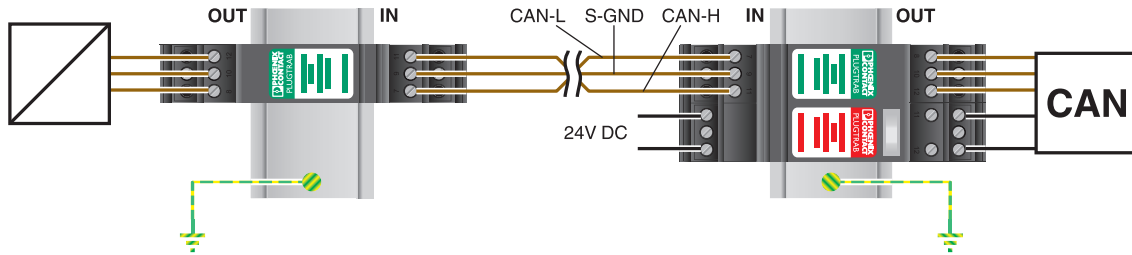


Figure may contain other products.



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

Application drawing



Application drawing

