

# PT 5-HF-12 DC-ST - Surge protection plug



2838775

<https://www.phoenixcontact.com/us/products/2838775>

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Protective plug PT with HF protective circuit for 4 signal wires. Nominal voltage: 12 V DC

## Your advantages

- Easy testing and documentation with CHECKMASTER 2 with pluggable protective modules
- Maximum ease of maintenance, thanks to the 2-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

## Commercial data

Item number	2838775
Packing unit	10 pc
Minimum order quantity	1 pc
Sales key	CL03
Product key	CL3121
GTIN	4017918480646
Weight per piece (including packing)	26.593 g
Weight per piece (excluding packing)	25.6 g
Customs tariff number	85363010
Country of origin	DE

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## Technical data

### Notes

#### General

Note	Technical data is valid in association with the following specified base elements:
	PT 2X2+F-BE 2839224
	PT 2X2-BE 2839208

### Product properties

Product type	Surge protection for information technology
Product family	PLUGTRAB PT
IEC test classification	C1
	C2
	C3
	D1
Type	Male
Number of positions	5
Arrester can be tested with CHECKMASTER from software version:	From SW rev. 1.10
Wire pairs per module	2

#### Insulation characteristics

Overvoltage category	III
Pollution degree	2

### Electrical properties

Nominal voltage $U_N$	12 V DC
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### Connection data

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

### Dimensions

Dimensional drawing	
Width	17.7 mm

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Height	45 mm
Depth	52 mm
Horizontal pitch	1 Div.
Complete module width	17.7 mm
Complete module height	90 mm
Complete module depth	65.5 mm

## Material specifications

Color	black (RAL 9005)
	copper color
Flammability rating according to UL 94	V-0
Housing material	PA 6.6

## Mechanical properties

### Mechanical data

Open side panel	No
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## Protective circuit

Direction of action	Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground
Maximum continuous operating voltage $U_C$	14 V DC
	9.8 V AC
Rated current	450 mA (45 °C)
Operating effective current $I_C$ at $U_C$	$\leq 5 \mu A$
Protective conductor current $I_{PE}$	$\leq 5 \mu A$ (with PT 2X2-BE)
	$\leq 1 \mu A$ (with PT 2X2+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-ground)	20 kA (in total)
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)	20 kA (in total)
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 2X2-BE)
	$\leq 700 V$ (with PT 2X2+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	$\leq 25 V$ (with PT 2X2-BE)
	$\leq 40 V$ (with PT 2X2+F-BE)
Residual voltage at $I_n$ (conductor-conductor)	$\leq 25 V$
Residual voltage at $I_n$ (conductor-ground)	$\leq 40 V$ (with PT 2X2-BE)
Residual voltage at $I_n$ (line-signal ground)	$\leq 25 V$ (with PT 2X2-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-signal ground)	$\leq 25 V$

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Voltage protection level $U_p$ (line-line)	$\leq 80$ V (C1 - 1 kV / 500 A)
	$\leq 100$ V (C2 - 10 kV / 5 kA)
	$\leq 50$ V (C3 - 25 A)
	$\leq 80$ V (6 kV / 3 kA)
Voltage protection level $U_p$ (line-earth)	$\leq 85$ V (C1 - 1 kV / 500 A with PT 2X2-BE)
	$\leq 140$ V (C2 - 10 kV / 5 kA with PT 2X2-BE)
	$\leq 100$ V (6 kV / 3 kA with PT 2X2-BE)
	$\leq 50$ V (C3 - 25 A with PT 2X2-BE)
Voltage protection level $U_p$ (line-signal ground)	$\leq 50$ V (C3 - 25 A with PT 2X2-BE)
	$\leq 140$ V (C2 - 10 kV / 5 kA with PT 2X2-BE)
Voltage protection level $U_p$ static (line-line)	$\leq 25$ V (C2 - 10 kV / 5 kA)
	$\leq 27$ V (C3 - 25 A)
Voltage protection level $U_p$ static (line-earth)	$\leq 45$ V (C2 - 10 kV / 5 kA with PT 2X2-BE)
	$\leq 27$ V (C3 - 25 A with PT 2X2-BE)
Voltage protection level $U_p$ static (line-signal ground)	$\leq 25$ V (C2 - 10 kV / 5 kA with PT 2X2-BE)
	$\leq 27$ V (C3 - 25 A)
Response time $t_A$	$\leq 500$ 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 (Core-Core)	typ. 30 pF
Resistance per path	2.2 $\Omega \pm 10$ %
Surge protection fault message	none
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
	C3 - 67 A
	D1 - 2.5 kA

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 85 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	$\leq 4000$ m (amsl)

## Approvals

### Conformity/Approvals

UL, USA / Canada	Class I, Div. 2, Groups A, B, C, D T4A
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## Standards and regulations

Standards/specifications	EN 61643-21
Note	A2:2013

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Standards/specifications	IEC 61643-21
Note	A2:2012

## Mounting

Mounting type	on base element
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# PT 5-HF-12 DC-ST - Surge protection plug

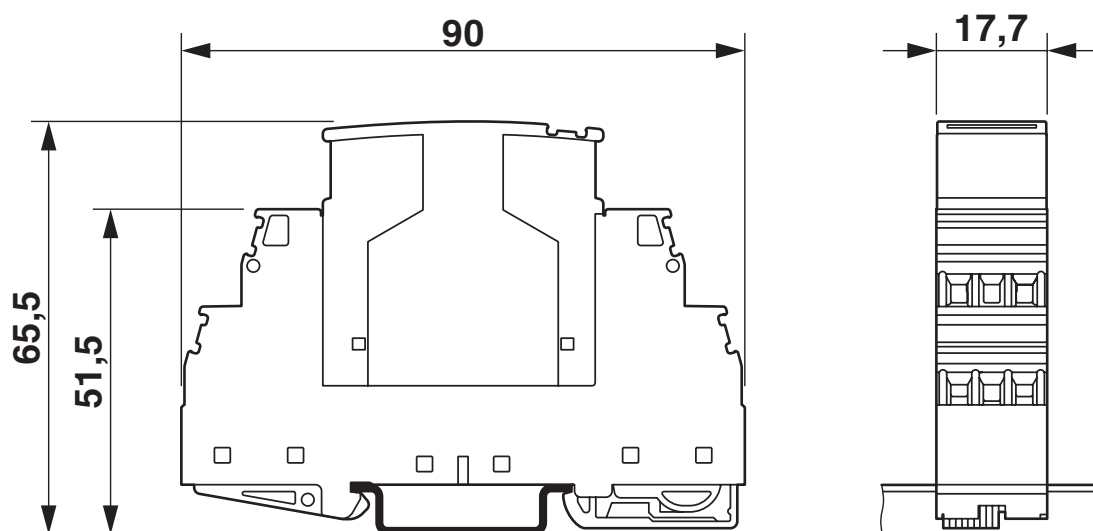
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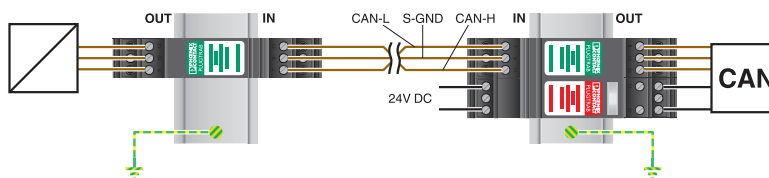
## Drawings

Dimensional drawing

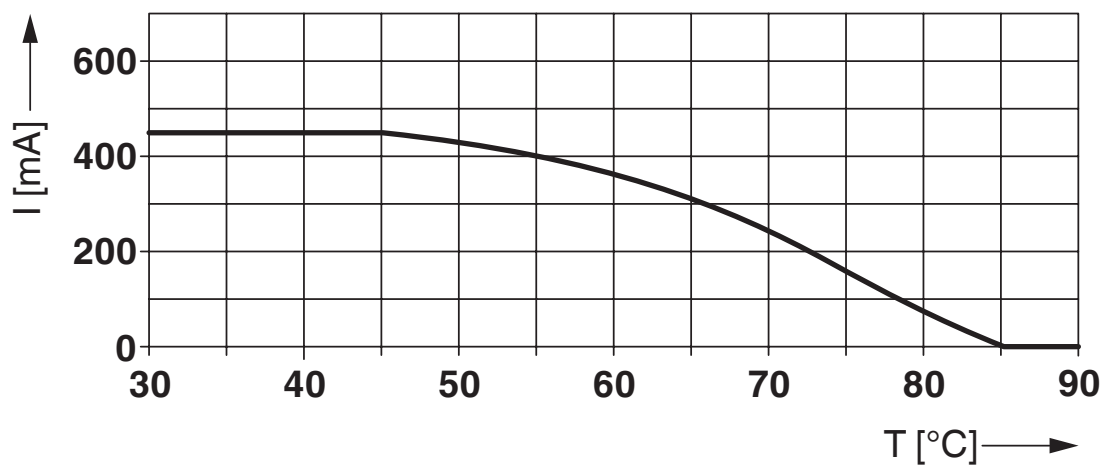


The figure shows the complete module consisting of a base element and connector

Application drawing



Diagram



The figure shows the derating curve in conjunction with PT 2X2-BE or PT 2X2-F-BE

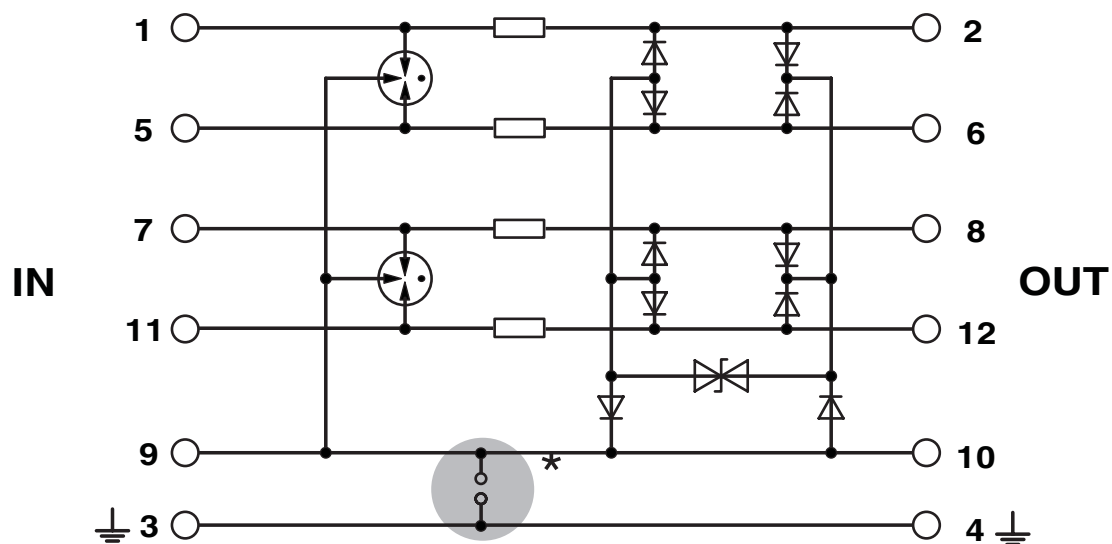
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Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2838775>




**DNV GL**  
Approval ID: TAE00001N6

	<b>UL Listed</b> Approval ID: FILE E 138168			
	Nominal voltage U <sub>N</sub>	Nominal current I <sub>N</sub>	Cross section AWG	Cross section mm <sup>2</sup>
keine				
	12 V	0.45 A	-	-



**cUL Listed**  
Approval ID: FILE E 333250



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Approval ID: FILE E 333250



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## Classifications

### ECLASS

ECLASS-13.0	27171503
ECLASS-15.0	27171503

### ETIM

ETIM 9.0	EC000943
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### UNSPSC

UNSPSC 21.0	39121600
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

### China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

### EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	02bf230d-de9c-4865-be0c-ca8763345478

### EF3.0 Climate Change

CO2e kg	0.685 kg CO2e
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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)