

# PT 2X2-12DC-ST - Surge protection plug



2838254

<https://www.phoenixcontact.com/us/products/2838254>

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PT protective connector with protective circuit for two 2-wire floating signal circuits. 12 V DC nominal voltage. HART-compatible.

## 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	2838254
Packing unit	10 pc
Minimum order quantity	1 pc
Sales key	CL21
Product key	CL2111
GTIN	4017918182663
Weight per piece (including packing)	25.79 g
Weight per piece (excluding packing)	25.79 g
Customs tariff number	85363010
Country of origin	DE

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## Technical data

### Product properties

Product type	Surge protection for MCR technology
Product family	PLUGTRAB PT
IEC test classification	C1
	C2
	C3
	D1
Type	Male
Surge protection fault message	none
Arrester can be tested with CHECKMASTER from software version:	From SW rev. 1.00
Wire pairs per module	2

### Insulation characteristics

Overvoltage category	III
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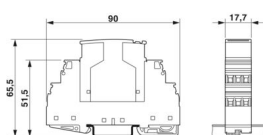
### Electrical properties

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	17.5 mm
Height	44.8 mm
Depth	51.7 mm
Horizontal pitch	1 Div.
Complete module width	17.7 mm
Complete module height	90 mm
Complete module depth	65.5 mm

### Material specifications

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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
Nominal voltage $U_N$	12 V DC
Maximum continuous operating voltage $U_C$	13 V DC
	9 V AC
Rated current	450 mA (45 °C)
Operating effective current $I_C$ at $U_C$	$\leq 5 \mu A$
Protective conductor current $I_{PE}$	$\leq 1 \mu A$ (with PT 2X2+F-BE)
	$\leq 4 \mu A$
Nominal discharge current $I_n$ (8/20) $\mu s$ (line-line)	10 kA
Nominal discharge current $I_n$ (8/20) $\mu s$ (line-ground)	10 kA
Pulse discharge current $I_{imp}$ (10/350) $\mu s$	2.5 kA (per path)
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
Output voltage limitation at 1 kV/ $\mu s$ (line-line) spike	$\leq 20 V$
Output voltage limitation at 1 kV/ $\mu s$ (line-earth) spike	$\leq 450 V$
Output voltage limitation at 1 kV/ $\mu s$ (line-line) static	$\leq 18 V$
Output voltage limitation (10/700) $\mu s$ (line-earth)	$\leq 450 V$
Output voltage limitation (10/700) $\mu s$ (line-signal ground)	$\leq 18 V$
Residual voltage at $I_n$ (conductor-conductor)	$\leq 18 V$
Residual voltage at $I_n$ (line-signal ground)	$\leq 450 V$
Residual voltage with $I_{an}$ (10/1000) $\mu s$ (line-line)	$\leq 23 V$
Response time $t_A$ (line-line)	$\leq 1 ns$
Response time $t_A$ (line-earth)	$\leq 100 ns$
Input attenuation aE, sym.	0.5 dB ( $\leq 600 kHz$ )
Cut-off frequency $f_g$ (3 dB), sym. in 50 $\Omega$ system	typ. 3 MHz
Capacity (Core-Core)	3 nF
Resistance per path	2.2 $\Omega$
Surge protection fault message	none
Impulse durability (line-line)	C2 - 10 kV / 5 kA
Impulse durability (line-earth)	C2 - 10 kV / 5 kA
	D1 - 2.5 kA

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## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 85 °C

## Standards and regulations

### Standards Information technology specification

Standards/regulations	IEC 61643-21
	DIN EN 61643-21
	UL 497B
	IEC 61643-21
	DIN EN 61643-21
	UL 497B

### Air clearances and creepage distances

Standards/regulations	VDE 0110-1 / IEC 60664-1
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## Mounting

Mounting type	on base element
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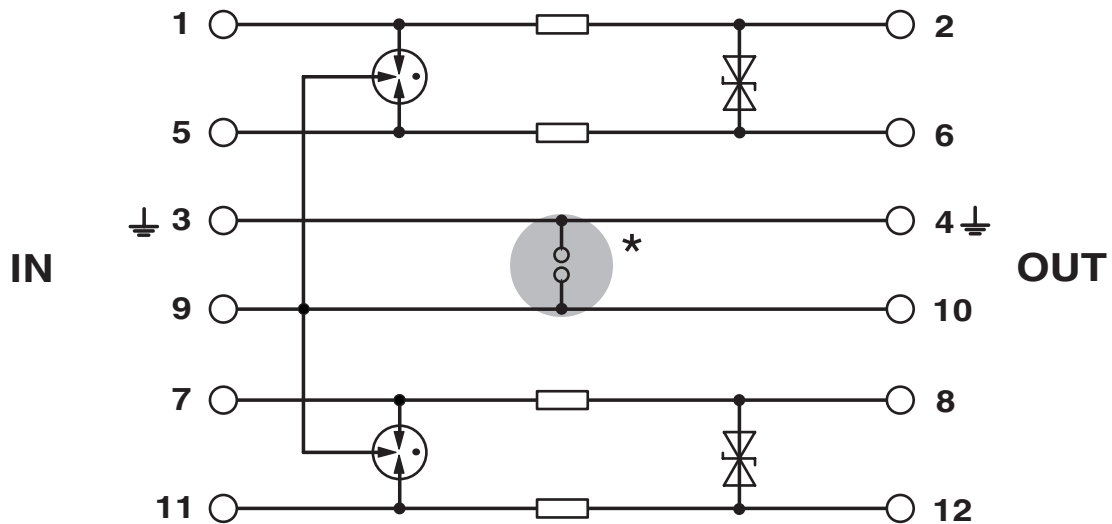
## Drawings

Dimensional drawing



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

Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2838254>

 <b>UL Listed</b> Approval ID: FILE E 138168				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
keine				
	12 V	0.45 A	-	-

 <b>cUL Listed</b> Approval ID: FILE E 333250				
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 <b>UL Listed</b> Approval ID: FILE E 333250				
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## Classifications

### ECLASS

ECLASS-13.0	27171501
ECLASS-15.0	27171501

### ETIM

ETIM 10.0	EC001466
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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	2f0bfa03-fbaf-4a35-a433-ec0cd7d1317d

### EF3.1 Climate Change

CO2e kg	1.107 kg CO2e
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