

# PT 2X2-HF-24 DC-ST - Surge protection plug



2839729

<https://www.phoenixcontact.com/us/products/2839729>

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Protective plug PT with HF protective circuit for two 2-core floating signal circuits. Nominal voltage: 24 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	2839729
Packing unit	10 pc
Minimum order quantity	1 pc
Sales key	CL03
Product key	CL3121
GTIN	4017918607210
Weight per piece (including packing)	26.14 g
Weight per piece (excluding packing)	22.323 g
Customs tariff number	85363010
Country of origin	DE

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## Technical data

### Product properties

Product type	Surge protection for information technology
Product family	PLUGTRAB PT
IEC test classification	C1
	C2
	C3
	D1
VDE requirement class	C1
	C2
	C3
	D1
Type	Male
Number of positions	5
Arrester can be tested with CHECKMASTER from software version:	From SW rev. 1.00
Wire pairs per module	2

### Insulation characteristics

Overvoltage category	III
Pollution degree	2

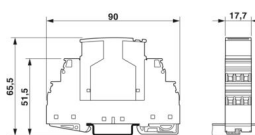
### Electrical properties

Nominal voltage $U_N$	24 V DC
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### Connection data

Connection method	Screw connection (in connection with the base element)
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
Height	45 mm
Depth	52 mm
Horizontal pitch	1 Div.

### Material specifications

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

## 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 $U_N$	24 V DC
Maximum continuous operating voltage $U_C$	28 V DC 19.8 V AC
Rated current	450 mA (45 °C)
Operating effective current $I_C$ at $U_C$	$\leq 5 \mu\text{A}$
Protective conductor current $I_{PE}$	$\leq 4 \mu\text{A}$ (with PT 2X2-BE) $\leq 1 \mu\text{A}$ (with PT 2X2+F-BE)
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (line-line)	10 kA
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (line-ground)	10 kA
Pulse discharge current $I_{imp}$ (10/350) $\mu\text{s}$	2.5 kA
Total discharge current $I_{Total}$ (8/20) $\mu\text{s}$	20 kA
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (line-line)	10 kA
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (line-earth)	10 kA
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (line-line)	30 A
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-line) spike	$\leq 120 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-earth) spike	$\leq 450 \text{ V}$ $\leq 1 \text{ kV}$ (with PT 2X2+F-BE)
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-line) static	$\leq 45 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-signal ground) static	$\leq 450 \text{ V}$
Residual voltage at $I_n$ (conductor-conductor)	$\leq 40 \text{ V}$
Residual voltage with $I_{an}$ (10/1000) $\mu\text{s}$ (line-line)	$\leq 50 \text{ V}$
Voltage protection level $U_p$ (line-line)	$\leq 120 \text{ V}$ (C2 - 10 kV / 5 kA)
Voltage protection level $U_p$ (line-earth)	$\leq 450 \text{ V}$ (C2 - 10 kV / 5 kA)
Response time $t_A$ (line-line)	$\leq 500 \text{ ns}$
Response time $t_A$ (line-earth)	$\leq 500 \text{ ns}$
Input attenuation aE, sym.	0.2 dB ( $\leq 5 \text{ MHz}$ )
Cut-off frequency $f_g$ (3 dB), sym. in 100 $\Omega$ system	typ. 70 MHz
Capacity (Core-Core)	typ. 30 pF
Resistance per path	2.2 $\Omega$
Surge protection fault message	none
Max. required back-up fuse	500 mA (T)
Impulse durability (line-line)	C2 - 10 kV / 5 kA
Impulse durability (line-earth)	C2 - 10 kV / 5 kA

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	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

VDE requirement class	C1
	C2
	C3
	D1

### Standards Information technology specification

Standards/regulations	IEC 61643-21
	IEC 61643-21

### Air clearances and creepage distances

Standards/regulations	DIN VDE 0110-1 / IEC 60664-1
Standards/specifications	IEC 61643-21
Note	2000

## 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

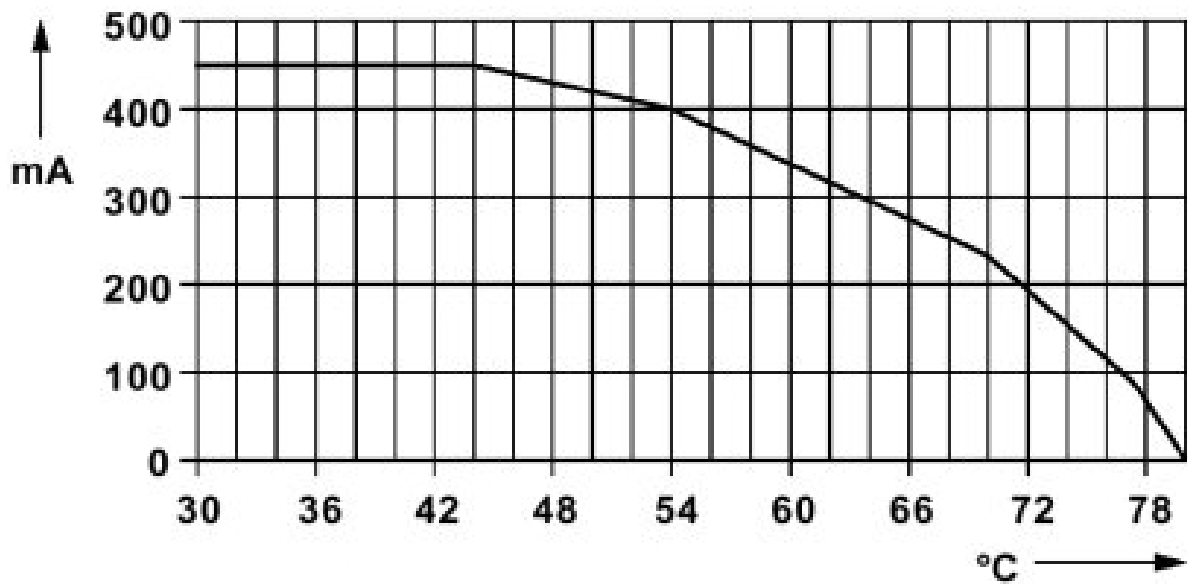
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Diagram



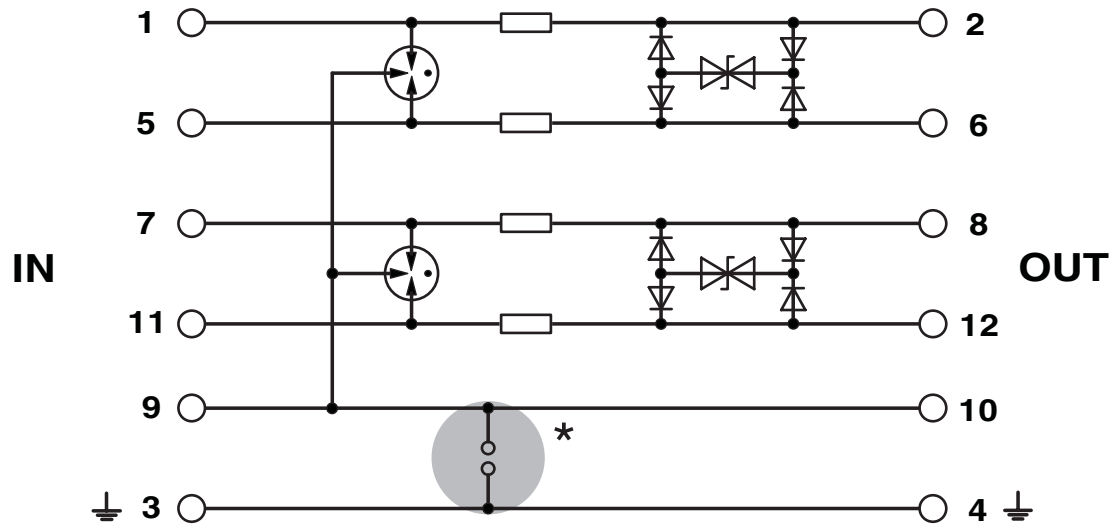
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Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2839729>

 <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				
	24 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	27171503
ECLASS-15.0	27171503

### 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	0351222a-5728-4192-be6c-ff4378305fcf

### EF3.1 Climate Change

CO2e kg	0.768 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)