

# PT 4-EX(I)-24DC-ST - Surge protection plug



2839253

<https://www.phoenixcontact.com/us/products/2839253>

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PT protective connector with protective circuit for a 4-wire floating Ex-i signal circuit. 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	2839253
Packing unit	10 pc
Minimum order quantity	1 pc
Sales key	CL21
Product key	CL2113
GTIN	4017918182878
Weight per piece (including packing)	44.8 g
Weight per piece (excluding packing)	26.15 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
Number of positions	4
Arrester can be tested with CHECKMASTER from software version:	From SW rev. 1.00

### 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)
Screw thread	M3
Tightening torque	0.5 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

### Ex data

Maximum inner capacitance $C_i$	1.1 nF
Max. internal inductance $L_i$	1 $\mu$ H
Max. input current $I_i$	500 mA (T4 / $\leq 80^\circ\text{C}$ )
	500 mA (T5 / $\leq 55^\circ\text{C}$ )
	500 mA (T6 / $\leq 40^\circ\text{C}$ )
Max. input voltage $U_i$	30 V DC
max. input power $P_i$	850.00 mW (T4 / $\leq 80^\circ\text{C}$ )
	700.00 mW (T5 / $\leq 55^\circ\text{C}$ )
	700.00 mW (T6 / $\leq 40^\circ\text{C}$ )
Maximum inner time factor ( $R_i/L_i$ )	$\leq 10 \mu\text{s}$
Ambient temperature (operation)	-40 °C ... 80 °C (T4)
	-40 °C ... 55 °C (T5)
	-40 °C ... 40 °C (T6)

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## Dimensions

Dimensional drawing	
Width	17.7 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

Color	blue (RAL 5015)
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 & Signal Ground/Shield-Earth Ground
Nominal voltage $U_N$	24 V DC
Maximum continuous operating voltage $U_C$	30 V DC 21 V AC
Rated current	500 mA (40 °C)
Operating effective current $I_C$ at $U_C$	$\leq 5 \mu A$
Protective conductor current $I_{PE}$	$\leq 4 \mu A$
Nominal discharge current $I_n$ (8/20) $\mu s$ (line-line)	308 A
Nominal discharge current $I_n$ (8/20) $\mu s$ (line-ground)	10 kA
Pulse discharge current $I_{imp}$ (10/350) $\mu s$ (line-earth)	1 kA 2 kA (in total)
Total discharge current $I_{Total}$ (8/20) $\mu s$	20 kA
Total discharge current $I_{Total}$ (10/350) $\mu s$	2 kA
Max. discharge current $I_{max}$ (8/20) $\mu s$ maximum (line-line)	308 A
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)	59 A
Output voltage limitation at 1 kV/ $\mu s$ (line-line) spike	$\leq 45 V$
Output voltage limitation at 1 kV/ $\mu s$ (line-earth) spike	$\leq 1 kV$

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Output voltage limitation at 1 kV/μs (line-line) static	≤ 45 V
Output voltage limitation at 1 kV/μs (line-earth) static	≤ 1 kV
Residual voltage at I <sub>n</sub> (conductor-conductor)	≤ 70 V
Residual voltage with I <sub>an</sub> (10/1000) μs (line-line)	≤ 65 V
Voltage protection level U <sub>p</sub> (line-line)	≤ 60 V (C1 - 500 V / 250 A)
	≤ 50 V (C3 - 10 A)
	≤ 50 V (C3 - 25 A)
Voltage protection level U <sub>p</sub> (line-earth)	≤ 1 kV (C1 - 1 kV / 500 A)
	≤ 1 kV (C2 - 2 kV/1 kA)
	≤ 1 kV (C2 - 10 kV / 5 kA)
	≤ 1 kV (D1 - 1 kA)
Response time t <sub>A</sub> (line-line)	≤ 1 ns
Response time t <sub>A</sub> (line-earth)	≤ 100 ns
Input attenuation aE, sym.	typ. 0.1 dB (≤ 1 MHz / 50 Ω)
	typ. 0.1 dB (≤ 500 kHz / 150 Ω)
	typ. 0.1 dB (≤ 100 kHz / 600 Ω)
Cut-off frequency f <sub>g</sub> (3 dB), sym. in 50 Ω system	typ. 7 MHz
Cut-off frequency f <sub>g</sub> (3 dB), sym. in 150 Ω system	typ. 2.5 MHz
Cut-off frequency f <sub>g</sub> (3 dB), sym. in 600 Ω system	typ. 600 kHz
Resistance per path	0 Ω
Surge protection fault message	none
Max. required back-up fuse	500 mA (T)
Impulse durability (line-line)	C1 - 0.5 kV / 250 A
	C3 - 10 A
	C3 - 25 A
Impulse durability (line-earth)	C1 - 1 kV / 500 A
	C2 - 2 kV / 1 kA
	C2 - 10 kV / 5 kA
	D1 - 1 kA
Alternating current carrying capacity (line-earth)	5 A - 1 s

## 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	≤ 2000 m (amsl)

## Approvals

### Conformity/Approvals

ATEX	⊕ II 1G Ex ia IIC T4...T6 Ga
	⊕ II 1D Ex ia IIIC T135 °C...T85 °C Da
IECEX	Ex ia IIC T4...T6 Ga

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	Ex ia IIIC T135 °C...T85 °C Da
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## Standards and regulations

Standards/specifications	EN 61643-21
Note	A2:2013
Standards/specifications	EN 60079-0
Note	2018
Standards/specifications	EN 60079-11
Note	2012
Standards/specifications	IEC 61643-21
Note	A2:2012
Standards/specifications	IEC 60079-0
Note	2017
Standards/specifications	IEC 60079-11
Note	2011
Standards/specifications	GB/T 3836.1
Note	2021
Standards/specifications	GB/T 3836.4
Note	2021

## Mounting

Mounting type	on base element
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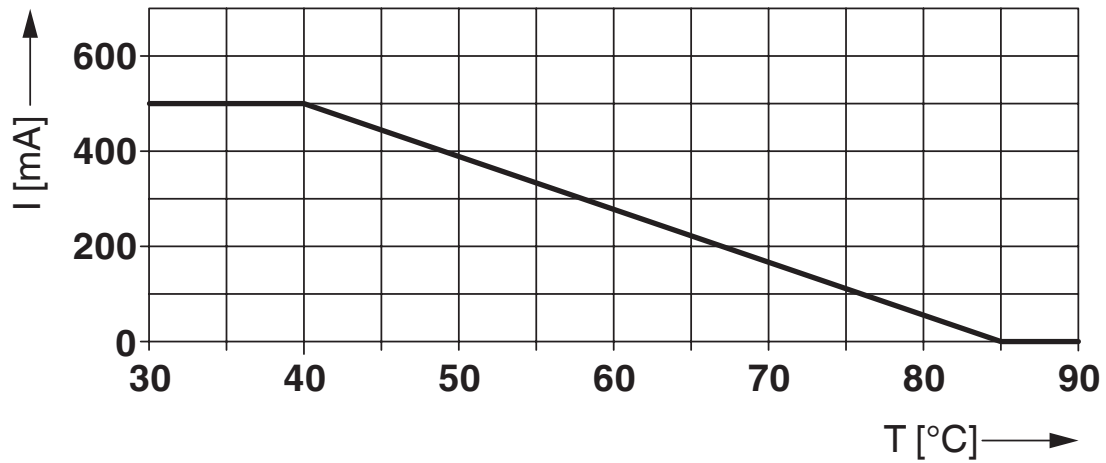
## Drawings

Dimensional drawing



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

Diagram



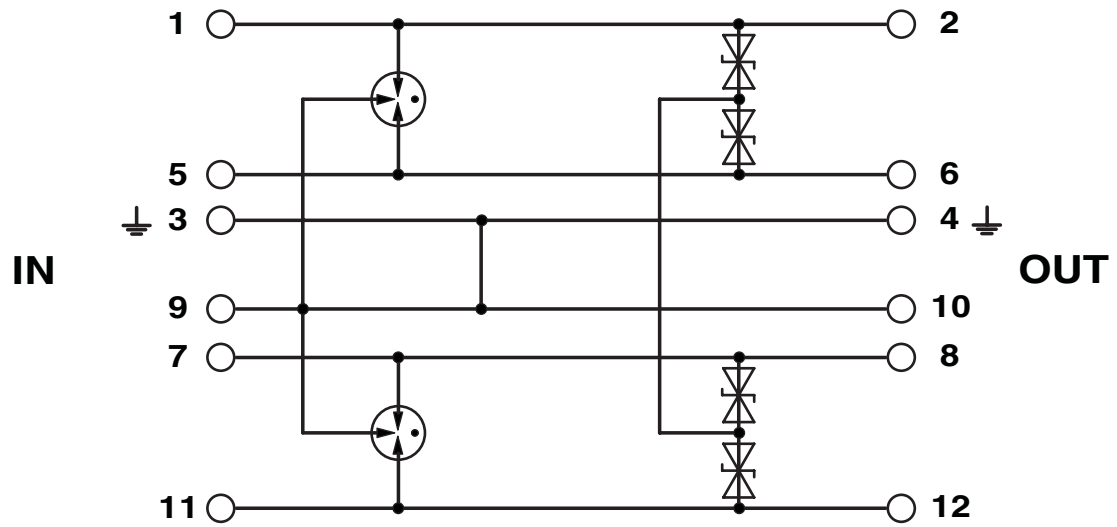
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Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2839253>



**DNV GL**

Approval ID: TAE00001N6



**ATEX**

Approval ID: KEMA 00ATEX1099 X



**IECEX**

Approval ID: IECEX KEM 10.0063X

**INMETRO**

Approval ID: DNV 19.0031 X/01



**NEPSI-EX**

Approval ID: GYJ20.1177X



**UKCA-EX**

Approval ID: DEKRA 21UKEX0234 X



**CCC**

Approval ID: 2020322316001009

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## Classifications

### ECLASS

ECLASS-13.0	27171502
ECLASS-15.0	27171502

### ETIM

ETIM 10.0	EC001625
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### UNSPSC

UNSPSC 21.0	39121620
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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	ee3ed19a-1f52-414c-81bf-f64a1e7caf37

### EF3.1 Climate Change

CO2e kg	1.106 kg CO2e
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