

# S-PT1-2PE-24DC - Surge protection device



2818122

<https://www.phoenixcontact.com/us/products/2818122>

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Screw on module for conduit systems, with two conductor protection for a 2-core floating signal circuit. Design: 24 V DC

## Commercial data

Item number	2818122
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	CL02
Product key	CL2231
GTIN	4017918148355
Weight per piece (including packing)	295.2 g
Weight per piece (excluding packing)	295.2 g
Customs tariff number	85363010
Country of origin	DE

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## Technical data

### Notes

#### Trade restriction

CE note	The products are offered exclusively for export outside the EU and the European Economic Area.
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### Product properties

Product type	Surge protection for MCR technology
Product family	SURGETRAB
IEC test classification	C1
	C2
	C3
	D1
Type	Screw-in module
Number of positions	3
Surge protection fault message	none

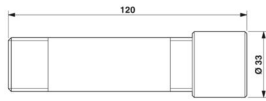
### Electrical properties

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

Connection method	Screw connection
Conductor cross-section flexible min.	0.14 mm <sup>2</sup>
Conductor cross-section flexible max.	1.5 mm <sup>2</sup>
Conductor cross-section, rigid min.	0.14 mm <sup>2</sup>
Conductor cross-section, rigid max.	1.5 mm <sup>2</sup>

### Dimensions

Dimensional drawing	
Width	33 mm
Height	33 mm
Depth	120 mm

### Mechanical properties

#### Mechanical data

Open side panel	No
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### Protective circuit

Direction of action	Line-Line & Line-Earth Ground
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Nominal voltage $U_N$	24 V DC
Maximum continuous operating voltage $U_C$	28 V DC
	20 V AC
Maximum continuous voltage $U_C$ (line-line)	28 V DC
	20 V AC
Nominal current $I_N$	250 mA (25 °C)
Operating effective current $I_C$ at $U_C$	$\leq 5 \mu\text{A}$
Protective conductor current $I_{PE}$	$\leq 2 \mu\text{A}$
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
Total surge current (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)	180 A
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (line-earth)	180 A
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-line) spike	$\leq 60 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-earth) spike	$\leq 450 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-line) static	$\leq 60 \text{ V}$
Residual voltage at $I_n$ (conductor-conductor)	$\leq 40 \text{ V}$
Residual voltage at $I_n$ (conductor-ground)	$\leq 60 \text{ V}$
Residual voltage with $I_{an}$ (10/1000) $\mu\text{s}$ (line-line)	$\leq 25 \text{ V}$
Residual voltage with $I_{an}$ (10/1000) $\mu\text{s}$ (line-earth)	$\leq 20 \text{ V}$
Voltage protection level $U_p$ (line-line)	$\leq 55 \text{ V}$
Voltage protection level $U_p$ (line-earth)	$\leq 550 \text{ V}$
Response time $t_A$ (line-line)	$\leq 1 \text{ ns}$
Response time $t_A$ (line-earth)	$\leq 100 \text{ ns}$
Input attenuation aE, sym.	$\leq 1.6 \text{ dB}$ (up to 500 kHz, 50 $\Omega$ system)
	$\leq 0.6 \text{ dB}$ (up to 200 kHz, 150 $\Omega$ system)
	$\leq 0.2 \text{ dB}$ (up to 50 kHz, 600 $\Omega$ system)
Cut-off frequency $f_g$ (3 dB), sym. in 50 $\Omega$ system	typ. 3.5 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 150 $\Omega$ system	typ. 1.5 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 600 $\Omega$ system	typ. 400 kHz
Capacity (Core-Core)	typ. 1.5 nF
Resistance per path	10 $\Omega$ 5 %
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
Alternating current carrying capacity (line-earth)	5 A - 1 s

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP40
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Ambient temperature (operation)	-40 °C ... 80 °C
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## Approvals

### Conformity/Approvals

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

### Standards Information technology specification

Standards/regulations	IEC 61643-21
	IEC 61643-21

### Air clearances and creepage distances

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

Mounting type	Connection-specific intermediate plugging
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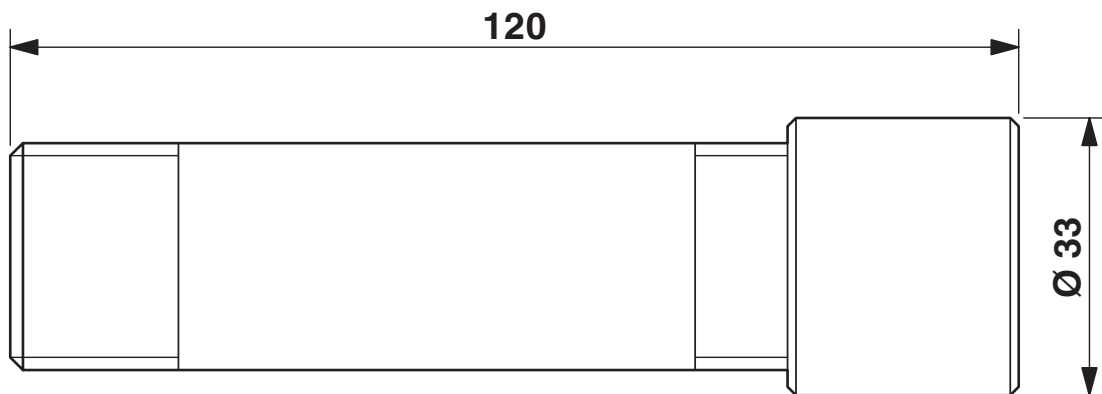


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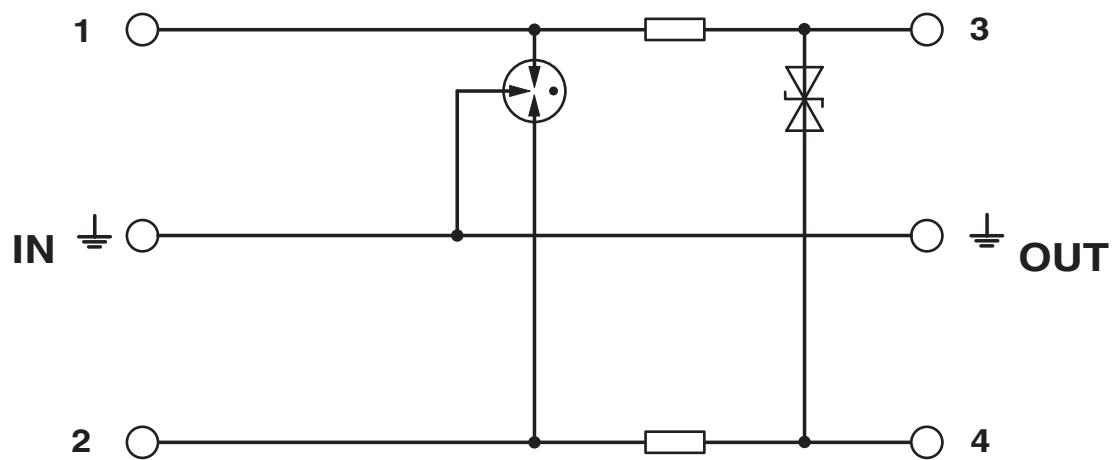
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## Drawings

Dimensional drawing



Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2818122>



**UL Listed**

Approval ID: FILE E 138168



**cUL Listed**

Approval ID: FILE E 333250



**UL Listed**

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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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Not applicable, Not qualified for the European market
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### 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)
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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)