

## Surge protection device - S-PT-EX(I)-24DC-1/2" - 2882572

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Surge protection in the IP67 screw-on module for measuring sensors in intrinsically safe circuits, direct mounting with 1/2" NPT outer thread, cable gland for the signal cable, two-stage protective circuit. HART-compatible.

### Your advantages

- ✓ Arresters in hexagonal pipe with various outer threads



### Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4046356091640

### Technical data

#### Dimensions

Height	33.5 mm
Width	33.5 mm
Depth	148 mm

#### Ambient conditions

Ambient temperature (operation)	-40 °C ... 50 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m (amsl (above mean sea level))
Degree of protection	IP67

#### General

Housing material	Zinc die-cast, surface bronzed and nickel-plated
Color	silver
Standards for clearances and creepage distances	IEC 60664-1
	EN 60079-0
	EN 60079-11

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## Technical data

### General

Mounting type	direct screw connection
Type	Screw-in module
Number of positions	3
Direction of action	Line-Line & Line-Earth Ground

### Protective circuit

IEC test classification	C1
	C2
	C3
	D1
Nominal voltage $U_N$	24 V DC
Maximum continuous voltage $U_C$	30 V DC
	21 V AC
Rated current	350 mA (50 °C)
Operating effective current $I_C$ at $U_C$	$\leq 10 \mu\text{A}$
Residual 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-earth)	10 kA (per path)
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (shield-earth)	10 kA (optional)
Pulse discharge current $I_{imp}$ (10/350) $\mu\text{s}$	1 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 (per path)
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (shield-earth)	10 kA
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (line-line)	30 A
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (line-earth)	100 A (per path)
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (shield-earth)	100 A
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-line) spike	$\leq 50 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-earth) spike	$\leq 1.4 \text{ kV}$ (Direct grounding)
Output voltage limitation at 1 kV/ $\mu\text{s}$ (shield-earth) spike	$\leq 600 \text{ V}$ (optional)
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-line) static	$\leq 50 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-earth) static	$\leq 1.4 \text{ kV}$ (Direct grounding)
Residual voltage at $I_n$ (line-line)	$\leq 50 \text{ V}$
Residual voltage with $I_{an}$ (10/1000) $\mu\text{s}$ (line-line)	$\leq 50 \text{ V}$
Voltage protection level $U_p$ (line-line)	$\leq 50 \text{ V}$ (C1 - 0.5 kV / 250 A)
	$\leq 55 \text{ V}$ (C1 - 1 kV/500 A)
	$\leq 55 \text{ V}$ (C2 - 2 kV/1 kA)
	$\leq 55 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 50 \text{ V}$ (C3 - 10 A)
	$\leq 50 \text{ V}$ (C3 - 25 A)
	$\leq 80 \text{ V}$ (D1 - 1 kA)

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### Technical data

#### Protective circuit

Voltage protection level $U_p$ (line-earth)	$\leq 1.4$ kV (C1 - 1 kV/500 A)
	$\leq 1.4$ kV (C2 - 2 kV/1 kA)
	$\leq 1.4$ kV (C2 - 10 kV / 5 kA)
	$\leq 1.4$ kV (C3 - 25 A)
	$\leq 1.4$ kV (C3 - 100 A)
	$\leq 1.4$ kV (D1 - 1 kA)
Voltage protection level $U_p$ (shield-earth)	$\leq 600$ V (C1 - 0.5 kV / 250 A)
	$\leq 650$ V (C1 - 1 kV/500 A)
	$\leq 650$ V (C2 - 2 kV/1 kA)
	$\leq 650$ V (C2 - 10 kV / 5 kA)
	$\leq 650$ V (C3 - 10 A)
	$\leq 750$ V (C3 - 25 A)
	$\leq 750$ V (C3 - 100 A)
	$\leq 650$ V (D1 - 1 kA)
Response time $t_A$ (line-line)	$\leq 1$ ns
Response time $t_A$ (line-earth)	$\leq 100$ ns
Response time $t_A$ (shield-earth)	$\leq 100$ ns
Input attenuation $aE$ , sym.	typ. 0.5 dB ( $\leq 1$ MHz / 50 $\Omega$ )
	typ. 0.2 dB ( $\leq 400$ kHz / 150 $\Omega$ )
Cut-off frequency $f_g$ (3 dB), sym. in 50 Ohm system	typ. 6 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 150 Ohm system	typ. 2.5 MHz
Resistance per path	2.2 $\Omega \pm 10$ %
Surge protection fault message	none
Impulse durability (line-line)	C1 - 1 kV / 500 A
	C2 - 10 kV / 5 kA
	C3 - 25 A
	D1 - 1 kA
Impulse durability (line-earth)	C1 - 1 kV / 500 A
	C2 - 10 kV / 5 kA
	C3 - 100 A
	D1 - 1 kA
Impulse durability (shield-earth)	C1 - 1 kV/500 A
	C2 - 10 kV/5 kA
	C3 - 100 A
	D1 - 1 kA
Alternating current carrying capacity (line-earth)	10 A - 1 s
Alternating current carrying capacity (shield-earth)	10 A - 1 s

#### Connection data

Connection method	Screw connection
Connection method IN	Screw terminal blocks

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## Technical data

### Connection data

Connection method OUT	Connection line
Connection technology	Screw connection
Screw thread	M3
Tightening torque	0.6 Nm
Stripping length	6 mm
Conductor cross section flexible	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section solid	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG	26 ... 16

### Standards and Regulations

Standards/specifications	EN 61643-21 A2:2013
	EN 60079-0 2012
	EN 60079-11 2012
	EN 60079-26 2007
	IEC 60079-0 2011
	IEC 60079-11 2011
	IEC 60079-26 2006

### General

Maximum inner capacitance C <sub>i</sub>	2 nF
Max. internal inductance L <sub>i</sub>	1 µH
Max. input current I <sub>i</sub>	350 mA (T4 / ≤ 50 °C)
	350 mA (T5 / ≤ 50 °C)
	350 mA (T6 / ≤ 50 °C)
Max. input voltage U <sub>i</sub>	30 V
max. input power P <sub>i</sub>	3 W
Insulation voltage to ground	500 V AC
Ambient temperature (operation)	-40 °C ... 50 °C

### Conformity / approvals

ATEX	# II 1G Ex ia IIC T4...T6 Ga
IECEX	Ex ia IIC T4...T6 Ga

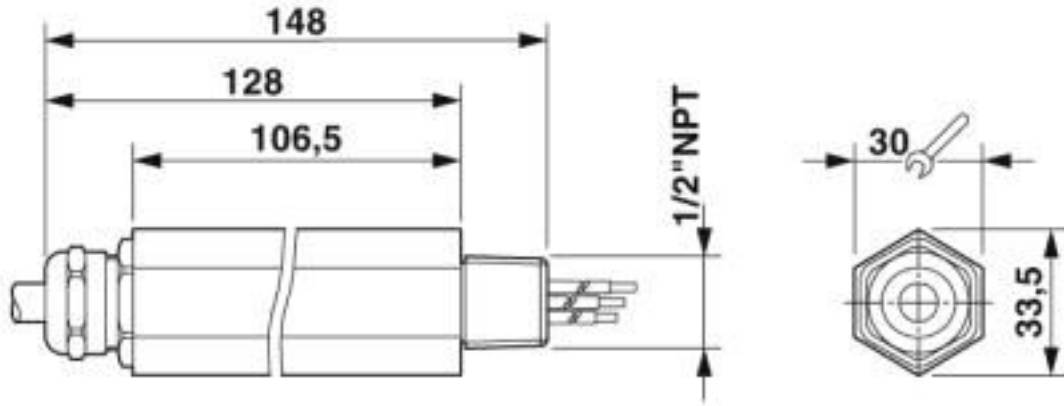
### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

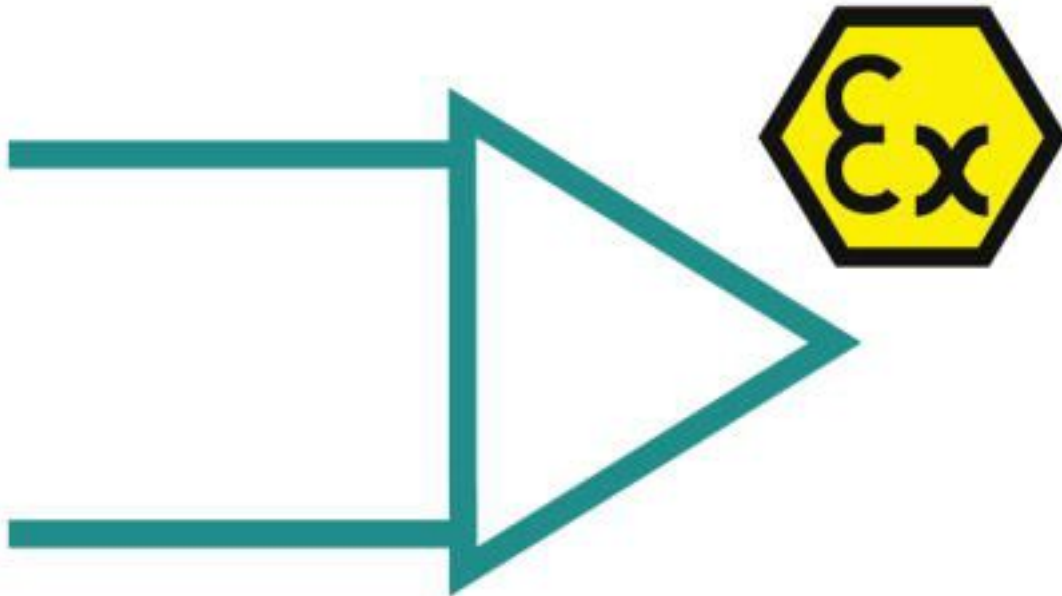
## Drawings

# Surge protection device - S-PT-EX(I)-24DC-1/2" - 2882572

Dimensional drawing

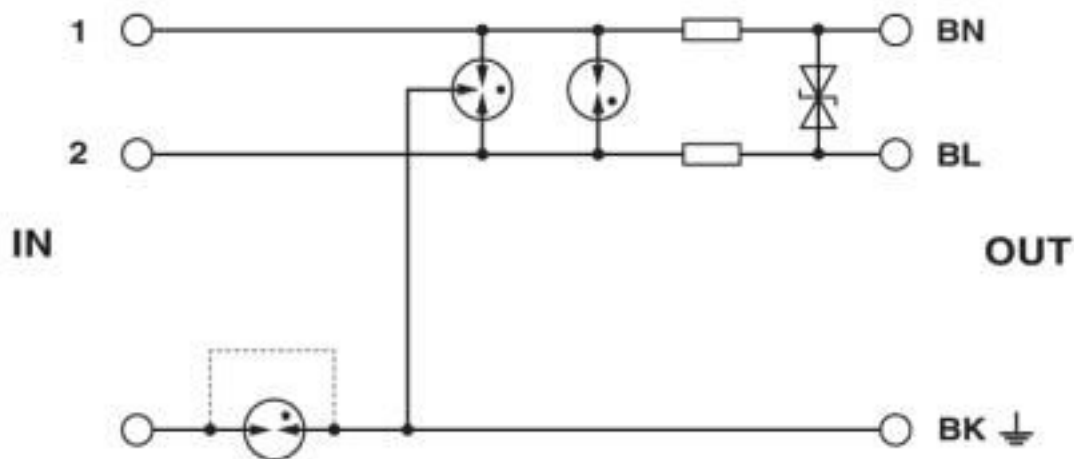


Pictogram



# Surge protection device - S-PT-EX(I)-24DC-1/2" - 2882572

Circuit diagram



## Classifications

eCl@ss

eCl@ss 10.0.1	27130807
eCl@ss 4.0	27130800
eCl@ss 4.1	27130800
eCl@ss 5.0	27130800
eCl@ss 5.1	27130800
eCl@ss 6.0	27130800
eCl@ss 7.0	27130807
eCl@ss 8.0	27130807
eCl@ss 9.0	27130807

ETIM

ETIM 2.0	EC000943
ETIM 3.0	EC000943
ETIM 4.0	EC000943
ETIM 5.0	EC000943
ETIM 6.0	EC000943
ETIM 7.0	EC000943

UNSPSC

UNSPSC 6.01	30212010
UNSPSC 7.0901	39121610
UNSPSC 11	39121610
UNSPSC 12.01	39121610
UNSPSC 13.2	39121620
UNSPSC 18.0	39121620
UNSPSC 19.0	39121620

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## Classifications

### UNSPSC

UNSPSC 20.0	39121620
UNSPSC 21.0	39121620

## Approvals

### Approvals

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Approvals

EAC / EAC

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Ex Approvals

IECEX / ATEX / EAC Ex

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### Approval details

EAC		EAC-Zulassung
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EAC		RU C- DE.*09.B.00169
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