

## Surge protection device - S-PT-EX(I)-24DC - 2880671

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Surge protection in the IP67 screw-on module for measuring sensors in intrinsically safe circuits, direct mounting with M20 x 1.5 outer thread, cable gland for the signal cable, two-stage protective circuit. HART-compatible.

### Why buy this product

- Arresters in hexagonal pipe with various outer threads



### Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 049016
GTIN	4046356049016
Weight per Piece (excluding packing)	380.000 g
Custom tariff number	85363010
Country of origin	Germany

### Technical data

#### Dimensions

Height	34 mm
Width	34 mm
Depth	137 mm

#### Ambient conditions

Ambient temperature (operation)	-40 °C ... 50 °C
Degree of protection	IP67

#### General

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### Technical data

#### General

Housing material	Zinc die-cast
Flammability rating according to UL 94	V-0
Color	silver
Standards for clearances and creepage distances	IEC 60664-1
	EN 60079-0
	EN 60079-11
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) $\mu\text{s}$ (Core-Core)	10 kA
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (core-earth)	10 kA
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 (Core-Core)	10 kA
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (Core-Earth)	10 kA
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (Shield-Earth)	10 kA
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (Core-Core)	30 A
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (Core-Earth)	100 A
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (Shield-Earth)	100 A
Output voltage limitation at 1 kV/ $\mu\text{s}$ (core-core) spike	$\leq 50 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (core-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/ $\mu\text{s}$ (core-core) static	$\leq 50 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (core-earth) static	$\leq 1.4 \text{ kV}$ (Direct grounding)

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#### Protective circuit

Residual voltage at $I_n$ (conductor-conductor)	$\leq 50$ V
Residual voltage with $I_{an}$ (10/1000) $\mu$ s (conductor-conductor)	$\leq 50$ V
Voltage protection level $U_p$ (core-core)	$\leq 55$ V (C2 - 5 kA)
	$\leq 50$ V (C1 - 250 A)
	$\leq 50$ V (C3 - 25 A)
	$\leq 80$ V (D1 - 1 kA)
Voltage protection level $U_p$ (core-ground)	$\leq 1.4$ kV (C2 - 5 kA / direct grounding)
	$\leq 1.4$ kV (C1 - 500 A)
	$\leq 1.4$ kV (C3 - 100 A)
	$\leq 1.4$ kV (D1 - 1 kA)
Voltage protection level $U_p$ (shield-ground)	$\leq 650$ V (C2 - 5 kA / optional)
Response time $t_A$ (core-core)	$\leq 1$ ns
Response time $t_A$ (core-earth)	$\leq 100$ ns
Response time $t_A$ (Shield-Earth)	$\leq 100$ ns
Input attenuation $a_E$ , sym.	typ. 0.5 dB ( $\leq 1$ MHz / 50 $\Omega$ )
	typ. 0.2 dB (Up to 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 in series	2.2 $\Omega \pm 10$ %
Surge protection fault message	none
Impulse durability (conductor-conductor)	C2 - 10 kV/5 kA
	D1 - 1 kA
Impulse durability (conductor-ground)	C2 - 10 kV/5 kA
	D1 - 1 kA
Impulse durability (shield-ground)	C2 - 10 kV / 5 kA
	D1 - 1 kA
Alternating current carrying capacity (conductor-ground)	10 A - 1 s
Alternating current carrying capacity (shield-ground)	10 A - 1 s

#### Connection data

Connection name	Input/output
Connection method	Screw connection
Connection method IN	Screw terminal blocks
Connection method OUT	Connection line
Connection technology	Screw connection
Screw thread	M3
Tightening torque	0.6 Nm

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### Technical data

#### Connection data

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/regulations	DIN EN 61643-21
	EN 60079-0
	EN 60079-11
	EN 60079-26
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 $C_i$	2 nF
Maximum inner inductance $L_i$	1 $\mu$ H
Max. input current $I_i$	350 mA (T4,T5,T6/ $\leq$ 50°C)
max. input voltage $U_i$	30 V
max. input power $P_i$	3 W

#### Conformity / approvals

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

#### Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

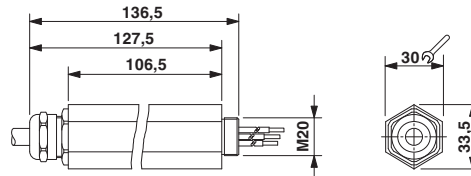
### Drawings

# Surge protection device - S-PT-EX(I)-24DC - 2880671

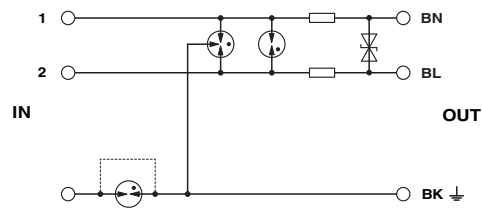
Pictogram



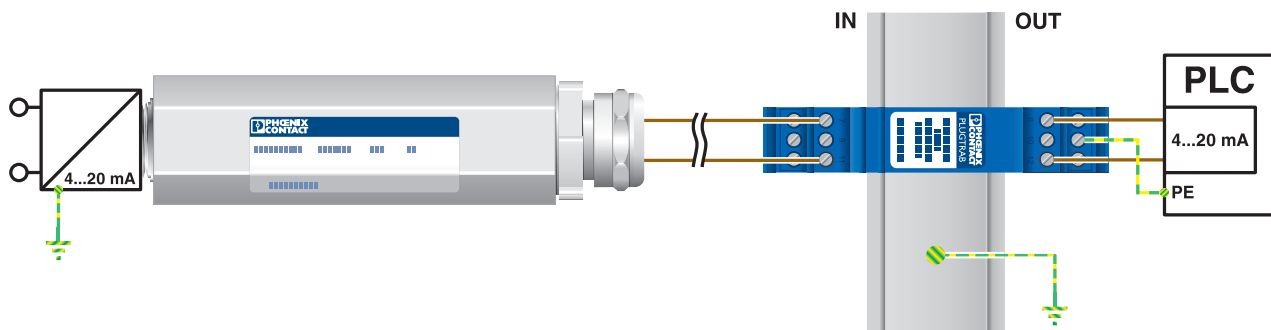
Dimensional drawing



Circuit diagram



Application drawing



## Classifications

eCl@ss

eCl@ss 4.0	27140201
eCl@ss 4.1	27130801

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### Classifications

#### eCl@ss

eCl@ss 5.0	27130801
eCl@ss 5.1	27130801
eCl@ss 6.0	27130807
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

#### UNSPSC

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

### Approvals

#### Approvals

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Approvals

EAC / EAC


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Ex Approvals

IECEX / ATEX

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#### Approval details

EAC		EAC-Zulassung
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### Approvals

EAC



RU C-  
DE.A\*30.B01561