

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.

Your advantages

- Arresters in hexagonal pipe with various outer threads



Key Commercial Data

Packing unit	1 pc
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	33.5 mm
Width	33.5 mm
Depth	137 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

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

Technical data

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
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) μs (line-line)	10 kA
Nominal discharge current I_n (8/20) μs (line-earth)	10 kA (per path)
Nominal discharge current I_n (8/20) μs (shield-earth)	10 kA (optional)
Pulse discharge current I_{imp} (10/350) μs	1 kA
Max. discharge current I_{max} (8/20) μs maximum (line-line)	10 kA
Max. discharge current I_{max} (8/20) μs maximum (line-earth)	10 kA (per path)
Max. discharge current I_{max} (8/20) μs maximum (shield-earth)	10 kA
Nominal pulse current I_{an} (10/1000) μs (line-line)	30 A
Nominal pulse current I_{an} (10/1000) μs (line-earth)	100 A (per path)
Nominal pulse current I_{an} (10/1000) μs (shield-earth)	100 A
Output voltage limitation at 1 kV/ μs (line-line) spike	$\leq 50 \text{ V}$
Output voltage limitation at 1 kV/ μs (line-earth) spike	$\leq 1.4 \text{ kV}$ (Direct grounding)
Output voltage limitation at 1 kV/ μs (shield-earth) spike	$\leq 600 \text{ V}$ (optional)
Output voltage limitation at 1 kV/ μs (line-line) static	$\leq 50 \text{ V}$
Output voltage limitation at 1 kV/ μs (line-earth) static	$\leq 1.4 \text{ kV}$ (Direct grounding)
Residual voltage at I_n (line-line)	$\leq 50 \text{ V}$

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

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Protective circuit

Residual voltage with I_{an} (10/1000) μ s (line-line)	≤ 50 V
Voltage protection level U_p (line-line)	≤ 50 V (C1 - 0.5 kV / 250 A)
	≤ 55 V (C1 - 1 kV/500 A)
	≤ 55 V (C2 - 2 kV/1 kA)
	≤ 55 V (C2 - 10 kV / 5 kA)
	≤ 50 V (C3 - 10 A)
	≤ 50 V (C3 - 25 A)
	≤ 80 V (D1 - 1 kA)
Voltage protection level U_p (line-earth)	≤ 1.4 kV (C1 - 1 kV/500 A)
	≤ 1.4 kV (C2 - 2 kV/1 kA)
	≤ 1.4 kV (C2 - 10 kV / 5 kA)
	≤ 1.4 kV (C3 - 25 A)
	≤ 1.4 kV (C3 - 100 A)
	≤ 1.4 kV (D1 - 1 kA)
Voltage protection level U_p (shield-earth)	≤ 600 V (C1 - 0.5 kV / 250 A)
	≤ 650 V (C1 - 1 kV/500 A)
	≤ 650 V (C2 - 2 kV/1 kA)
	≤ 650 V (C2 - 10 kV / 5 kA)
	≤ 650 V (C3 - 10 A)
	≤ 750 V (C3 - 25 A)
	≤ 750 V (C3 - 100 A)
	≤ 650 V (D1 - 1 kA)
Response time t_A (line-line)	≤ 1 ns
Response time t_A (line-earth)	≤ 100 ns
Response time t_A (shield-earth)	≤ 100 ns
Input attenuation aE, sym.	typ. 0.5 dB (≤ 1 MHz / 50 Ω)
	typ. 0.2 dB (≤ 400 kHz / 150 Ω)
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

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Technical data

Protective circuit

	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
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 ² ... 1.5 mm ²
Conductor cross section solid	0.14 mm ² ... 1.5 mm ²
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_i	2 nF
Max. internal inductance L_i	1 μ H
Max. input current I_i	350 mA ($T_4 / \leq 50$ °C)
	350 mA ($T_5 / \leq 50$ °C)
	350 mA ($T_6 / \leq 50$ °C)
Max. input voltage U_i	30 V
max. input power P_i	3 W
Insulation voltage to ground	500 V AC

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

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General

Ambient temperature (operation)	-40 °C ... 50 °C
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Conformity / approvals

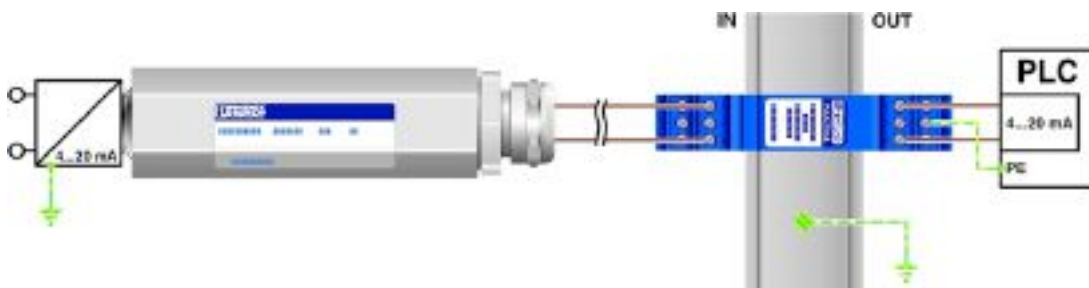
ATEX	# II 1G Ex ia IIC T4...T6 Ga
IECEX	Ex ia IIC T4...T6 Ga

Environmental Product Compliance

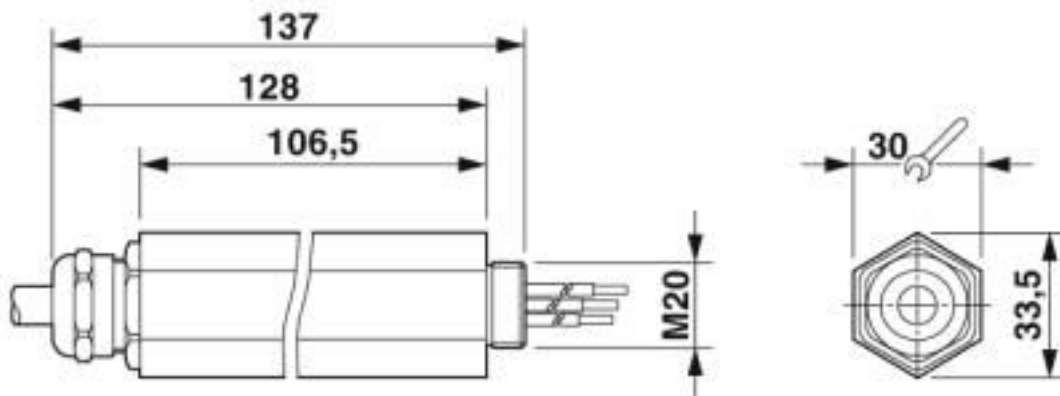
REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

Application drawing

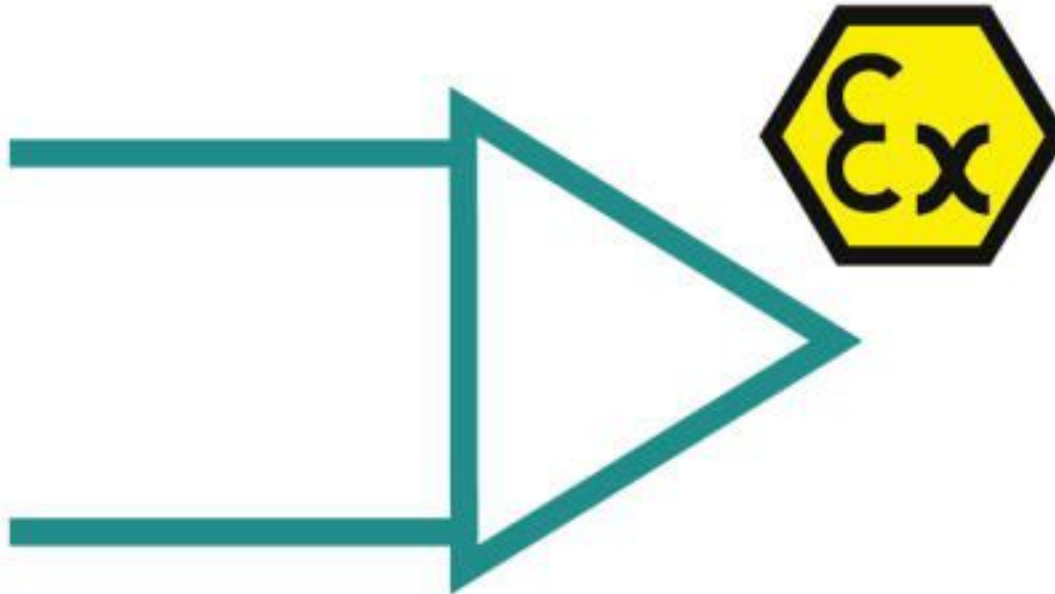


Dimensional drawing

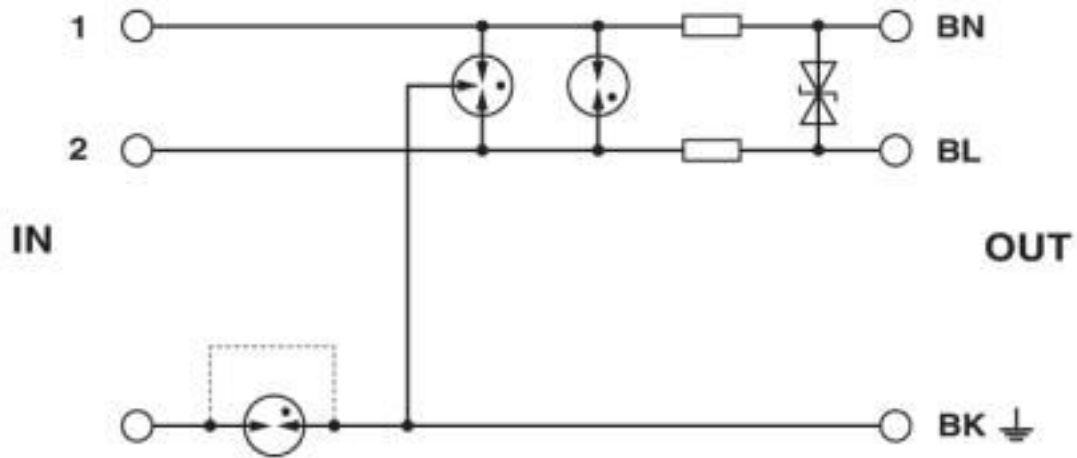


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Pictogram



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

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Classifications

eCl@ss

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
UNSPSC 20.0	39121620
UNSPSC 21.0	39121620

Approvals

Approvals

Approvals

EAC / EAC

Ex Approvals

IECEX / ATEX / EAC Ex

Approval details

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Approvals

EAC		EAC-Zulassung
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EAC		RU C- DE.A*30.B01561
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