

Surge protection device - S-PT-1X2-24DC



2880668

<https://www.phoenixcontact.com/us/products/2880668>

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

Your advantages

- Easiest field mounting with standardized thread
- Versatile in use with universal protective circuit
- Use under extreme ambient conditions with robust design

Commercial Data

Item number	2880668
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to Order (non-returnable)
Sales Key	C07
Product Key	CL2231
Catalog Page	Page 125 (C-4-2019)
GTIN	4046356049009
Weight per Piece (including packing)	418.1 g
Weight per Piece (excluding packing)	352.52 g
Customs tariff number	85363010
Country of origin	DE

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Technical Data

Notes

Notes on operation	When the bridge is disconnected, the shield connection is indirectly connected to the housing or reference potential.
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Product properties

IEC test classification	C1
	C2
	C3
	D1
Type	Screw-in module
Product type	Surge protection for MCR technology
Number of positions	3
Surge protection fault message	none
Wire pairs per module	1

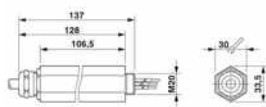
Insulation characteristics

Overvoltage category	III
Pollution degree	2

Connection data

Connection method	Screw connection
Screw thread	M3
Tightening torque	0.6 Nm
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

Dimensions

Dimensional drawing	
Width	33.5 mm
Height	33.5 mm
Depth	137 mm

Material specifications

Color	silver
Housing material	Zinc die-cast, surface bronzed and nickel-plated

Mechanical properties

Surge protection device - S-PT-1X2-24DC



2880668

<https://www.phoenixcontact.com/us/products/2880668>

Mechanical data

Open side panel	No
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Protective circuit

Direction of action	Line-Line & Line-Earth Ground
Maximum continuous voltage U_C	40 V DC
	28 V AC
Rated current	450 mA (55 °C)
Operating effective current I_C at U_C	$\leq 10 \mu A$
Residual current I_{PE}	$\leq 2 \mu A$
Nominal discharge current I_n (8/20) μs (line-line)	10 kA
Nominal discharge surge current I_n (8/20) μs (Core-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
Total discharge current I_{total} (8/20) μs	20 kA
Total discharge current I_{total} (10/350) μs	2 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)	23 A
Nominal pulse current I_{an} (10/1000) μs (line-earth)	100 A
Nominal pulse current I_{an} (10/1000) μs (shield-earth)	100 A
Output voltage limitation at 1 kV/ μs (line-line) spike	$\leq 55 V$
Output voltage limitation at 1 kV/ μs (line-earth) spike	$\leq 450 V$ (Direct grounding)
Output voltage limitation at 1 kV/ μs (shield-earth) spike	$\leq 600 V$ (optional)
Output voltage limitation at 1 kV/ μs (line-line) static	$\leq 55 V$
Output voltage limitation at 1 kV/ μs (line-earth) static	$\leq 450 V$ (Direct grounding)
Residual voltage at I_n (conductor-conductor)	$\leq 55 V$
Residual voltage with I_{an} (10/1000) μs (line-line)	$\leq 65 V$
Voltage protection level U_p (line-line)	$\leq 80 V$ (C2 - 10 kV / 5 kA)
Voltage protection level U_p (line-earth)	$\leq 450 V$ (C2 - 10 kV / 5 kA)
Voltage protection level U_p (shield-earth)	$\leq 600 V$ (C2 - 10 kV / 5 kA)
Voltage protection level U_p static (line-line)	$\leq 50 V$ (C2 - 10 kV / 5 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 ($\leq 1.5 MHz / 50 \Omega$)
	typ. 0.2 dB ($\leq 300 kHz / 150 \Omega$)
Cut-off frequency f_g (3 dB), sym. in 50 Ω system	typ. 6 MHz
Cut-off frequency f_g (3 dB), sym. in 150 Ω system	typ. 2 MHz
Resistance per path	2.2 $\Omega \pm 10 \%$
Surge protection fault message	none
Max. required back-up fuse	500 mA (T)

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2880668

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Impulse durability (line-line)	C2 - 10 kV / 5 kA
	D1 - 1 kA
Impulse durability (line-earth)	C2 - 10 kV / 5 kA
	D1 - 1 kA
Impulse durability (shield-earth)	C2 - 10 kV/5 kA
	D1 - 1 kA

Environmental and real-life conditions

Ambient conditions

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

Standards and regulations

Air clearances and creepage distances

Standards/regulations	IEC 60664-1 / VDE 0110-1
Standards/specifications	IEC 61643-21

Mounting

Mounting type	direct screw connection
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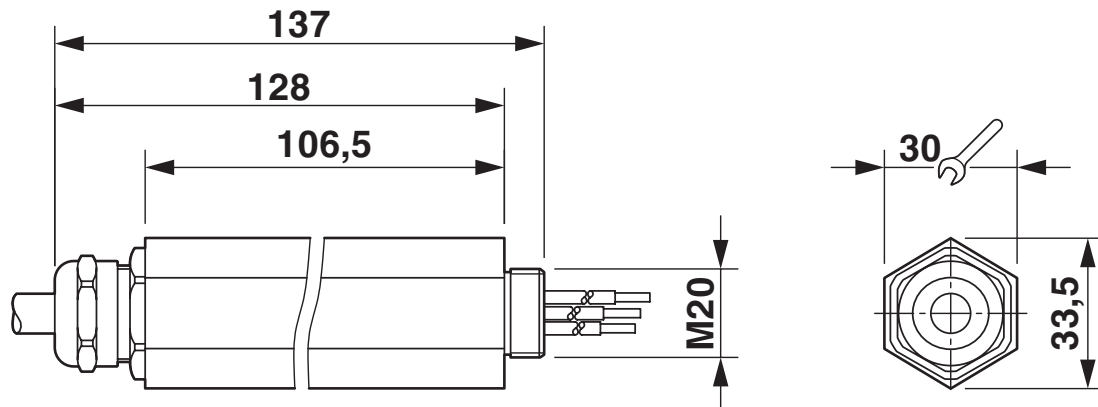


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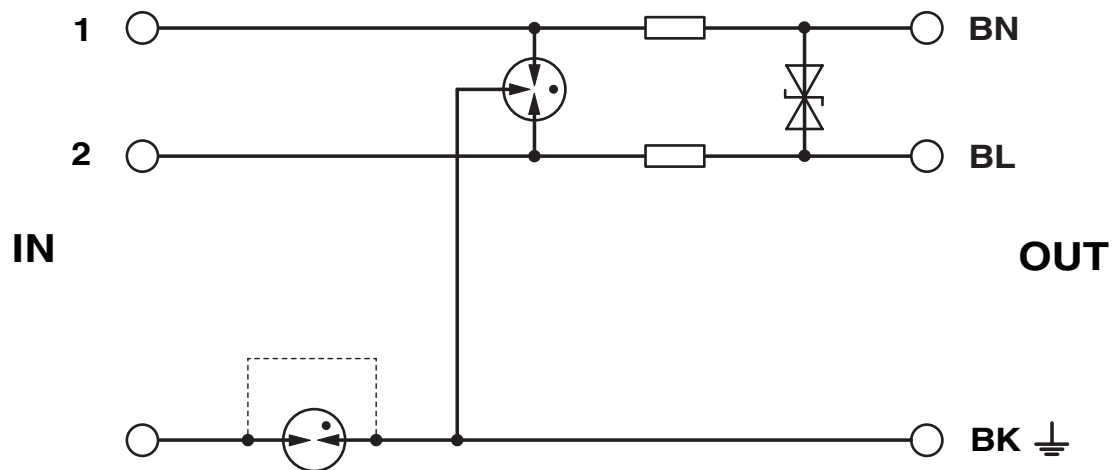
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Drawings

Dimensional drawing



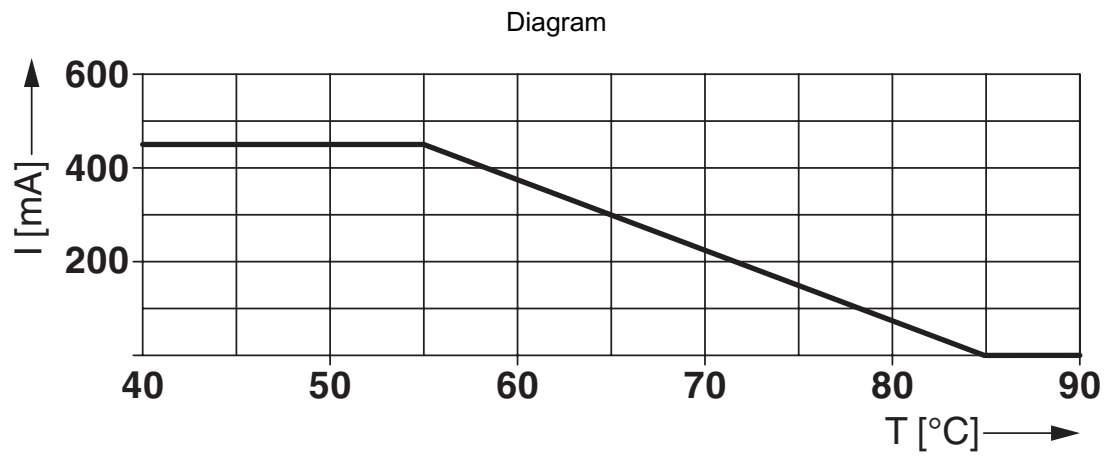
Circuit diagram



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Approvals



EAC

Approval ID: RU C-DE.*09.B.00169

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Classifications

ECLASS

ECLASS-9.0	27130807
ECLASS-10.0.1	27130807
ECLASS-11.0	27130807

ETIM

ETIM 8.0	EC000943
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UNSPSC

UNSPSC 21.0	39121600
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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