

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



2882572

<https://www.phoenixcontact.com/us/products/2882572>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



Surge protection in the IP67 screw-on module for measuring sensors in intrinsically safe circuits, direct mounting with 1/2" NPT external thread, cable gland for the signal line, two-stage protective circuit. HART-compatible. Can be used in safety-related circuits up to SIL 3.

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	2882572
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL02
Product key	CL2231
GTIN	4046356091640
Weight per piece (including packing)	433.8 g
Weight per piece (excluding packing)	367.92 g
Customs tariff number	85363010
Country of origin	DE

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



2882572

<https://www.phoenixcontact.com/us/products/2882572>

Technical data

Notes

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

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
Wire pairs per module	1

Insulation characteristics

Overvoltage category	III
Pollution degree	2

Electrical properties

Nominal voltage U_N	24 V DC
-----------------------	---------

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 rigid	0.14 mm ² ... 1.5 mm ²
Conductor cross-section AWG	26 ... 16

Ex data

Maximum inner capacitance C_i	2 nF
Max. internal inductance L_i	1 µH
Max. input current I_i	350 mA (T4 / ≤ 50 °C)
	350 mA (T5 / ≤ 50 °C)
	350 mA (T6 / ≤ 50 °C)
Max. input voltage U_i	30 V
max. input power P_i	3.00 W
Insulation voltage to ground	500 V AC
Ambient temperature (operation)	-40 °C ... 50 °C
	135 °C (T4)

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



2882572

<https://www.phoenixcontact.com/us/products/2882572>

Max. surface temperature	100 °C (T5)
	85 °C (T6)

Dimensions

Dimensional drawing	
Width	33.5 mm
Height	33.5 mm
Depth	148 mm

Material specifications

Color	Steel/stainless steel color
Housing material	Zinc die-cast, surface bronzed and nickel-plated
Housing surface material	nickel-plated

Mechanical properties

Mechanical data

Open side panel	No
-----------------	----

Protective circuit

Direction of action	Line-Line & Line-Earth Ground
Nominal voltage U_N	24 V DC
Maximum continuous operating voltage U_C	30 V DC
	21 V AC
Rated current	350 mA (50 °C)
Operating effective current I_C at U_C	$\leq 10 \mu A$
Protective conductor current I_{PE}	$\leq 2 \mu A$
Nominal discharge current I_n (8/20) μs (line-line)	10 kA
Nominal discharge current I_n (8/20) μs (line-ground)	10 kA (per path)
Nominal discharge current I_n (8/20) μs (shield-ground)	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)
Discharge surge current I_{max} (8/20) μs maximum (shield-ground)	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-ground)	100 A
Output voltage limitation at 1 kV/ μs (line-line) spike	$\leq 50 V$
Output voltage limitation at 1 kV/ μs (line-earth) spike	$\leq 1.4 kV$ (Direct grounding)
Output voltage limitation at 1 kV/ μs (shield-ground) spike	$\leq 600 V$ (optional)
Output voltage limitation at 1 kV/ μs (line-line) static	$\leq 50 V$

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



2882572

<https://www.phoenixcontact.com/us/products/2882572>

Output voltage limitation at 1 kV/ μ s (line-earth) static	≤ 1.4 kV (Direct grounding)
Residual voltage at I_n (conductor-conductor)	≤ 50 V
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-ground)	≤ 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-ground)	≤ 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 Ω system	typ. 6 MHz
Cut-off frequency f_g (3 dB), sym. in 150 Ω 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-ground)	C1 - 1 kV/500 A
	C2 - 10 kV/5 kA
	C3 - 100 A

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



2882572

<https://www.phoenixcontact.com/us/products/2882572>

	D1 - 1 kA
Alternating current carrying capacity (line-earth)	10 A - 1 s
Alternating current carrying capacity (shield-ground)	10 A - 1 s

Environmental and real-life conditions

Ambient conditions

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

Approvals

Conformity/Approvals

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

Standards and regulations

Air clearances and creepage distances

Standards/regulations	IEC 60664-1 / EN 60079-0 / EN 60079-11
Standards/specifications	EN 61643-21
Note	A2:2013
Standards/specifications	EN 60079-0
Note	2018
Standards/specifications	EN 60079-11
Note	2012
Standards/specifications	IEC 60079-0
Note	2017
Standards/specifications	IEC 60079-11
Note	2011
Standards/specifications	GB 3836.1
Note	2021
Standards/specifications	GB/T 3836.4
Note	2021

Mounting

Mounting type	direct screw connection
---------------	-------------------------

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

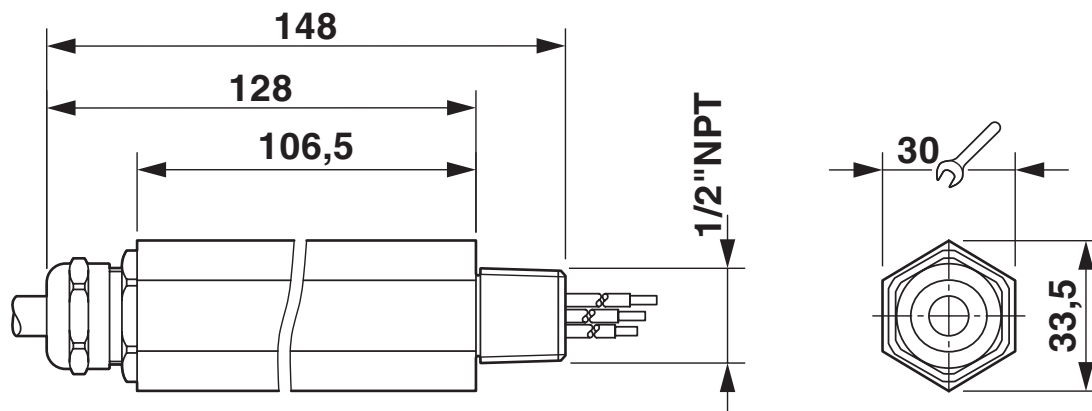


2882572

<https://www.phoenixcontact.com/us/products/2882572>

Drawings

Dimensional drawing



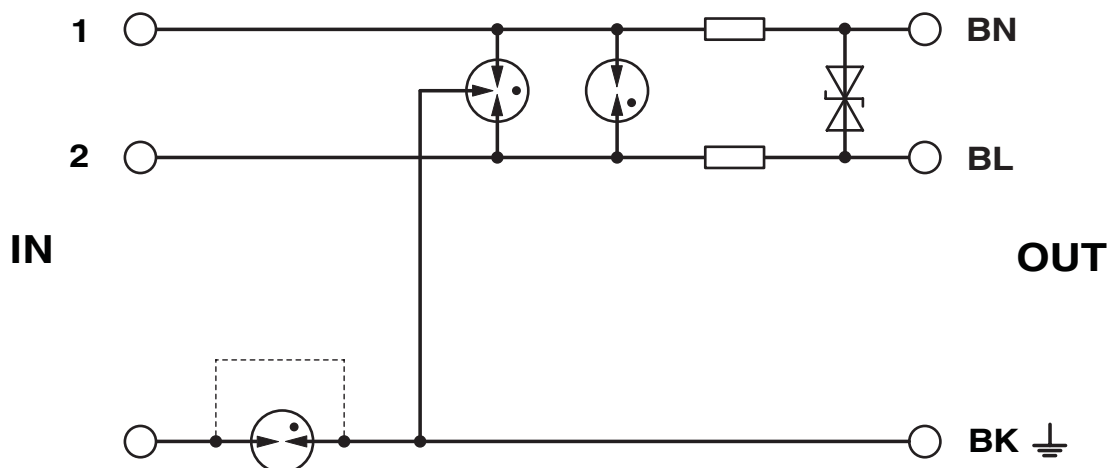
Schematic diagram

S-PT-1X2-24DC*									
Category	1oo1 architecture, HFT=0				1oo2 architecture, HFT=1				
	PFD _{AVG}	PFH	Used budget of SIL 2 SIF		PFD _{AVG}	PFH	CCF	Used budget of SIL 3 SIF	
			PFD _{AVG}	PFH				PFD _{AVG}	PFH
	4.50·10 ⁻⁶	8.00·10 ⁻¹⁰ 1/h	0.0 %	0.1 %	2.25·10 ⁻⁷	4.00·10 ⁻¹¹ 1/h	5 %	0.0 %	0.0 %
					4.50·10 ⁻⁷	8.00·10 ⁻¹¹ 1/h	10 %	0.0 %	0.1 %
Calculation based on exida report, Phoenix Contact 23/05-128 R029 V1R0 exida Profile 1, FMEDA Analysis 2, T _{proof} : 1 year, MT: 10 years, MTTR: 24 hours, PTC: 99% Used standards IEC/EN 61508, edition 2010 (device specific) IEC/EN 61511, edition 2016 + COR1:2016 + A1:2017 (system specific)									

Functional safety scenarios

Table also applies to the S-PT-EX(I)-24DC* item group

Circuit diagram



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



2882572

<https://www.phoenixcontact.com/us/products/2882572>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2882572>

Functional Safety

Approval ID: 23-05-128 R029 V1R0



ATEX

Approval ID: KEMA 06ATEX0002



IECEX

Approval ID: IECEX KEM 10.0064



CCC

Approval ID: 2020322316000817



NEPSI-EX

Approval ID: GYJ20.1178X



UKCA-EX

Approval ID: DEKRA 21UKEX0235

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



2882572

<https://www.phoenixcontact.com/us/products/2882572>

Classifications

ECLASS

ECLASS-13.0	27171502
ECLASS-15.0	27171502

ETIM

ETIM 10.0	EC001466
-----------	----------

UNSPSC

UNSPSC 21.0	39121620
-------------	----------

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



2882572

<https://www.phoenixcontact.com/us/products/2882572>

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

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)
SCIP	b2675b1f-5603-4702-aa8e-9ac1292ed79e

Phoenix Contact 2026 © - all rights reserved

<https://www.phoenixcontact.com>

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com