

S-PT-EX-24DC - Surge protection device



2800034

<https://www.phoenixcontact.com/sg/products/2800034>

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 for a floating signal circuit in the screw-on module with IP67 degree of protection for sensor heads, connection: M20 x 1.5. Tested in accordance with the following types of protection in Ex areas: Ex d/Ex tD/Ex ia IIC/Ex iaD. Suitable for use in the fieldbus system in accordance with the FISCO concept, 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	2800034
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	*****
Product key	CL2232
Catalog page	Page 154 (C-4-2019)
GTIN	4046356411004
Weight per piece (including packing)	229.6 g
Weight per piece (excluding packing)	194.14 g
Customs tariff number	85363010
Country of origin	DE

S-PT-EX-24DC - Surge protection device



2800034

<https://www.phoenixcontact.com/sg/products/2800034>

Technical data

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	2
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	Individual wires
-------------------	------------------

Ex data

Maximum inner capacitance C_i	1.65 nF
Max. internal inductance L_i	1 μ H
Max. input current I_i	500 mA (T4 / $\leq 75^\circ\text{C}$)
	500 mA (T5 / $\leq 75^\circ\text{C}$)
	500 mA (T6 / $\leq 60^\circ\text{C}$)
Max. input voltage U_i	36 V DC
max. input power P_i	3.00 W
Insulation voltage to ground	500 V AC
Ambient temperature (operation)	-40 $^\circ\text{C}$... 75 $^\circ\text{C}$ (T4)
	-40 $^\circ\text{C}$... 75 $^\circ\text{C}$ (T5)
	-40 $^\circ\text{C}$... 60 $^\circ\text{C}$ (T6)
Operating temperature range	-40 $^\circ\text{C}$... 100 $^\circ\text{C}$ (T4)
	-40 $^\circ\text{C}$... 75 $^\circ\text{C}$ (T5)
	-40 $^\circ\text{C}$... 60 $^\circ\text{C}$ (T6)
Max. surface temperature	135 $^\circ\text{C}$ (T4)
	100 $^\circ\text{C}$ (T5)
	85 $^\circ\text{C}$ (T6)

Dimensions

S-PT-EX-24DC - Surge protection device



2800034

<https://www.phoenixcontact.com/sg/products/2800034>

Dimensional drawing	
Width	28 mm
Height	28 mm
Depth	79 mm

Material specifications

Color	Steel/stainless steel color
Seal material	NBR
Housing material	Stainless steel 1.4404 ASTM 316L

Mechanical properties

Mechanical data

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

Protective circuit

Direction of action	Line-Line & Line-Earth Ground
Maximum continuous voltage U_C	36 V DC 25 V AC
Operating effective current I_C at U_C	$\leq 5 \mu A$
Residual current I_{PE}	$\leq 2 \mu A$
Nominal discharge current I_n (8/20) μs (line-line)	260 A
Nominal discharge current I_n (8/20) μs (line-ground)	10 kA
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)	260 A
Max. discharge current I_{max} (8/20) μs maximum (line-earth)	20 kA
Nominal pulse current I_{an} (10/1000) μs (line-line)	50 A
Output voltage limitation at 1 kV/ μs (line-line) spike	$\leq 130 V$
Output voltage limitation at 1 kV/ μs (line-earth) spike	$\leq 1.1 kV$
Output voltage limitation at 1 kV/ μs (line-line) static	$\leq 60 V$
Voltage protection level U_p (line-line)	$\leq 65 V$ (C3 - 10 A)
Voltage protection level U_p (line-earth)	$\leq 1.1 kV$ (C3 - 100 A) $\leq 1.1 kV$ (C1 - 1 kV / 500 A) $\leq 1.2 kV$ (C2 - 10 kV / 5 kA)
Response time t_A (line-line)	$\leq 1 ns$
Response time t_A (line-earth)	$\leq 100 ns$
Input attenuation aE, sym.	typ. 0.1 dB (30 MHz / 50 Ω) typ. 0.1 dB (6 MHz / 150 Ω)

S-PT-EX-24DC - Surge protection device



2800034

<https://www.phoenixcontact.com/sg/products/2800034>

Cut-off frequency f_g (3 dB), sym. in 50 Ω system	typ. 70 MHz
Cut-off frequency f_g (3 dB), sym. in 150 Ω system	typ. 40 MHz
Capacity (Core-Core)	typ. 20 pF
Capacity (Core-Earth)	typ. 5 pF
Surge protection fault message	none
Impulse durability (line-line)	C3 - 25 A
Impulse durability (line-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

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP67
Ambient temperature (operation)	-40 °C ... 80 °C (non-Ex)
Altitude	≤ 2000 m (amsl)

Approvals

Conformity/Approvals

ATEX	Ex II 1 G Ex ia IIC T4...T6
	Ex II 2 G Ex d IIC T4...T6
	Ex II 1 D Ex iaD 20 IP6x T85 °C...135 °C
	Ex II 2 D Ex tD A21 IP6x T85 °C...135 °C
IECEx	Ga Ex ia IIC T4...T6
	Ex d IIC T4...T6
	Ex iaD IP6x T85 °C...135 °C
	Ex tD A21 IP6x T85 °C...135 °C

Standards and regulations

Air clearances and creepage distances

Standards/regulations	IEC 60664-1 / IEC 60079-11
Standards/specifications	EN 61643-21
Note	A2:2013
Standards/specifications	EN 60079-0
Note	2018
Standards/specifications	EN 60079-1
Note	2007
Standards/specifications	EN 60079-11
Note	2012
Standards/specifications	EN 60079-31
Note	2009
Standards/specifications	IEC 60079-0

S-PT-EX-24DC - Surge protection device



2800034

<https://www.phoenixcontact.com/sg/products/2800034>

Note	2017
Standards/specifications	IEC 60079-1
Note	2007
Standards/specifications	IEC 60079-11
Note	2011
Standards/specifications	IEC 60079-31
Note	2008

Mounting

Mounting type	M20
---------------	-----

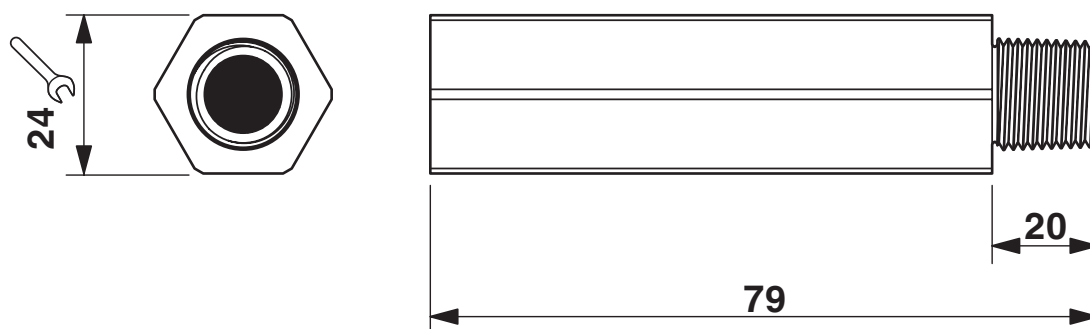
S-PT-EX-24DC - Surge protection device

2800034

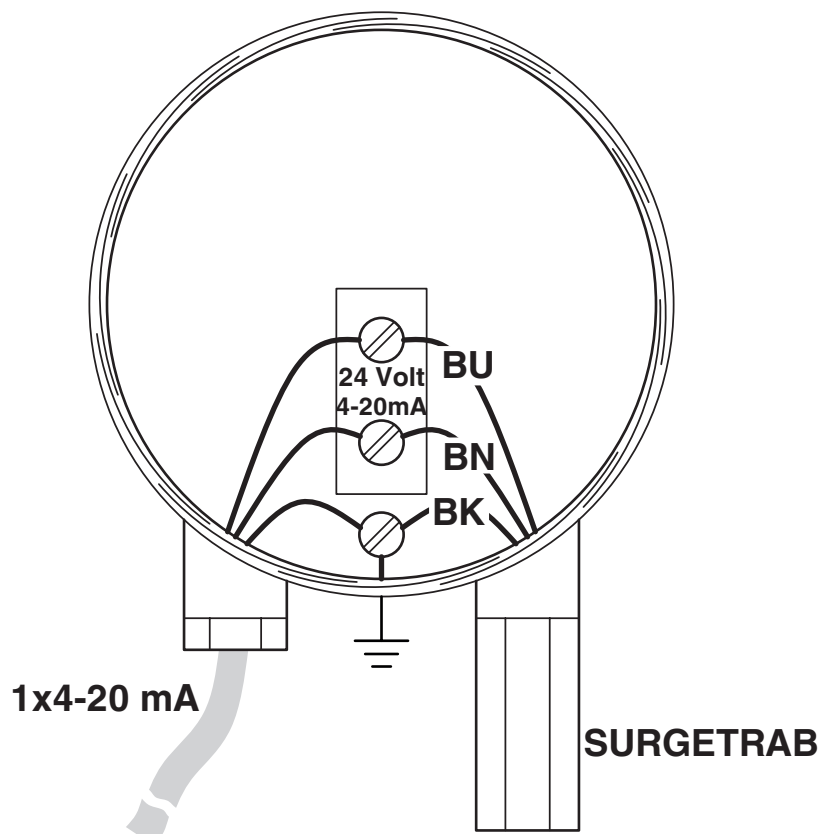
<https://www.phoenixcontact.com/sg/products/2800034>

Drawings

Dimensional drawing



Application drawing

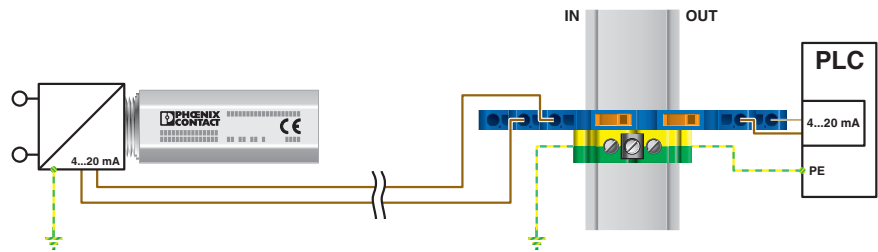


S-PT-EX-24DC - Surge protection device



2800034
<https://www.phoenixcontact.com/sg/products/2800034>

Application drawing

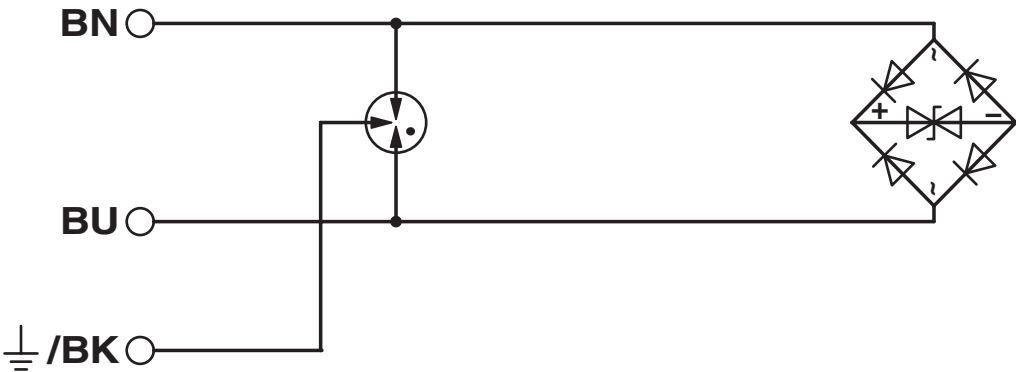


Schematic diagram

S-PT-EX-...DC*									
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
8.43·10 ⁻⁵	1.50·10 ⁻⁹ 1/h	0.1 %	0.2 %	4.22·10 ⁻⁷	7.50·10 ⁻¹¹ 1/h	5 %	0.0 %	0.1 %	
				8.43·10 ⁻⁷	1.50·10 ⁻¹⁰ 1/h	10 %	0.1 %	0.2 %	
Calculation based on exida report, Phoenix Contact 09/08-42 R011 V4R1 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

Circuit diagram



S-PT-EX-24DC - Surge protection device



2800034

<https://www.phoenixcontact.com/sg/products/2800034>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/sg/products/2800034>



EAC

Approval ID: EAC-Zulassung



EAC

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

Functional Safety

Approval ID: 09-08-42 R011 V4R1



ATEX

Approval ID: KEMA 09ATEX0028 X



EAC Ex

Approval ID: RU C-DE.**87.B.00420



IECEx

Approval ID: IECEx KEM 09.0014X



CCC

Approval ID: 2020322316000794



NEPSI-EX

Approval ID: GYJ20.1159X

S-PT-EX-24DC - Surge protection device



2800034

<https://www.phoenixcontact.com/sg/products/2800034>

Classifications

ECLASS

ECLASS-13.0	27171502
-------------	----------

ETIM

ETIM 9.0	EC001625
----------	----------

UNSPSC

UNSPSC 21.0	39121600
-------------	----------

S-PT-EX-24DC - Surge protection device



2800034

<https://www.phoenixcontact.com/sg/products/2800034>

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	7940e31b-388c-43c7-9cfc-d52103df244e

EF3.0 Climate Change

CO2e kg	7.371 kg CO2e
---------	---------------

Phoenix Contact 2025 © - all rights reserved
<https://www.phoenixcontact.com>

PHOENIX CONTACT SEA Pte. Ltd.
105 Eunos Avenue 3, #04-00
Singapore 409836
+65 6228 4900
marketing@phoenixcontact.com.sg