

S-PT-2XEX-24DC-1/2" - Surge protection device



2800041

<https://www.phoenixcontact.com/pc/products/2800041>

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Surge protection for two floating signal circuits in screw-on module with IP67 protection for sensor heads, connection 1/2-inch 14 NPT. Tested in acc. with the protection types in Ex areas Ex d / Ex tD / Ex ia IIC / Ex iaD. Can be used inside of a fieldbus-system according to the FISCO concept.

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	2800041
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	CL2232
Catalog page	Page 155 (C-4-2019)
GTIN	4046356411035
Weight per piece (including packing)	242.3 g
Weight per piece (excluding packing)	209.06 g
Customs tariff number	85363010
Country of origin	DE

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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	4
Wire pairs per module	2

Insulation characteristics

Overvoltage category	III
Pollution degree	2

Electrical properties

Nominal voltage U_N	24 V DC
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Connection data

Connection method	Individual wires
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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 / ≤ 75 °C)
	500 mA (T5 / ≤ 75 °C)
	500 mA (T6 / ≤ 60 °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 °C ... 75 °C (T4)
	-40 °C ... 75 °C (T5)
	-40 °C ... 60 °C (T6)
Operating temperature range	-40 °C ... 100 °C (T4)
	-40 °C ... 75 °C (T5)
	-40 °C ... 60 °C (T6)
Max. surface temperature	135 °C (T4)
	100 °C (T5)
	85 °C (T6)


Dimensions

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Dimensional drawing	
Width	28 mm
Height	28 mm
Depth	79 mm

Material specifications

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

Mechanical properties

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	36 V DC
	25 V AC
Operating effective current I_C at U_C	$\leq 5 \mu\text{A}$
Residual current I_{PE}	$\leq 2 \mu\text{A}$
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
Nominal pulse current I_{an} (10/1000) μs (line-line)	50 A
Output voltage limitation at 1 kV/ μs (line-line) spike	$\leq 65 \text{ V}$
Output voltage limitation at 1 kV/ μs (line-earth) spike	$\leq 1.1 \text{ kV}$
Output voltage limitation at 1 kV/ μs (line-line) static	$\leq 50 \text{ V}$
Voltage protection level U_p (line-line)	$\leq 50 \text{ V}$ (C3 - 10 A)
Voltage protection level U_p (line-earth)	$\leq 1.1 \text{ kV}$ (C3 - 100 A)
	$\leq 1.1 \text{ kV}$ (C1 - 1 kV / 500 A)
	$\leq 1.2 \text{ kV}$ (C2 - 10 kV / 5 kA)
Response time t_A (line-line)	$\leq 1 \text{ ns}$
Response time t_A (line-earth)	$\leq 100 \text{ ns}$
Input attenuation aE, sym.	typ. 0.1 dB (1 MHz/50 Ω)
	typ. 0.1 dB (400 kHz / 150 Ω)
Cut-off frequency f_g (3 dB), sym. in 50 Ω system	typ. 5 MHz
Cut-off frequency f_g (3 dB), sym. in 150 Ω system	typ. 2 MHz
Capacity (Core-Core)	typ. 1.5 nF

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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	Ⓜ II 1 G Ex ia IIC T4...T6
	Ⓜ II 2 G Ex d IIC T4...T6
	Ⓜ II 1 D Ex iaD 20 IP6x T85 °C...135 °C
	Ⓜ 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
Note	2017
Standards/specifications	IEC 60079-1
Note	2007

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Standards/specifications	IEC 60079-11
Note	2011
Standards/specifications	IEC 60079-31
Note	2008

Mounting

Mounting type	1/2" NPT
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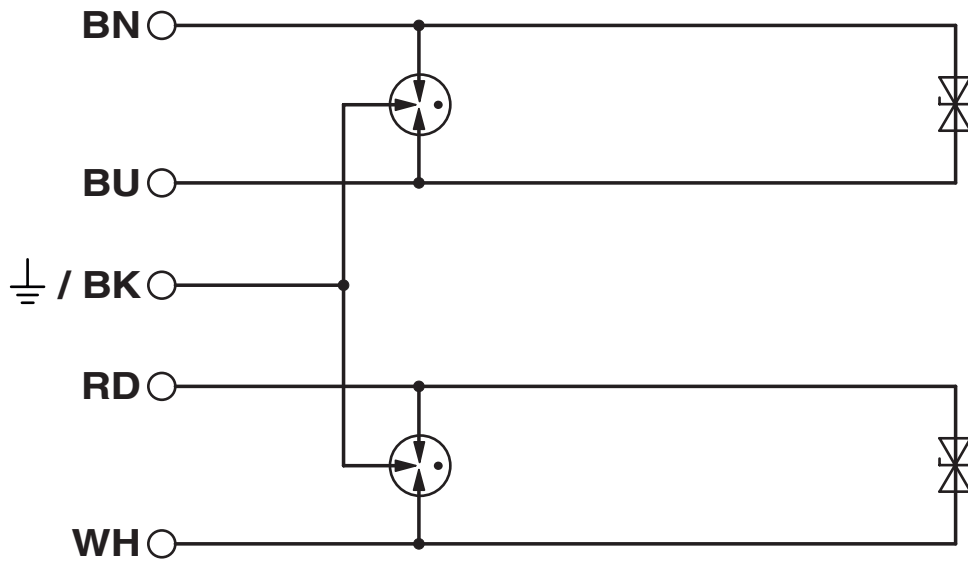


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Drawings

Circuit diagram



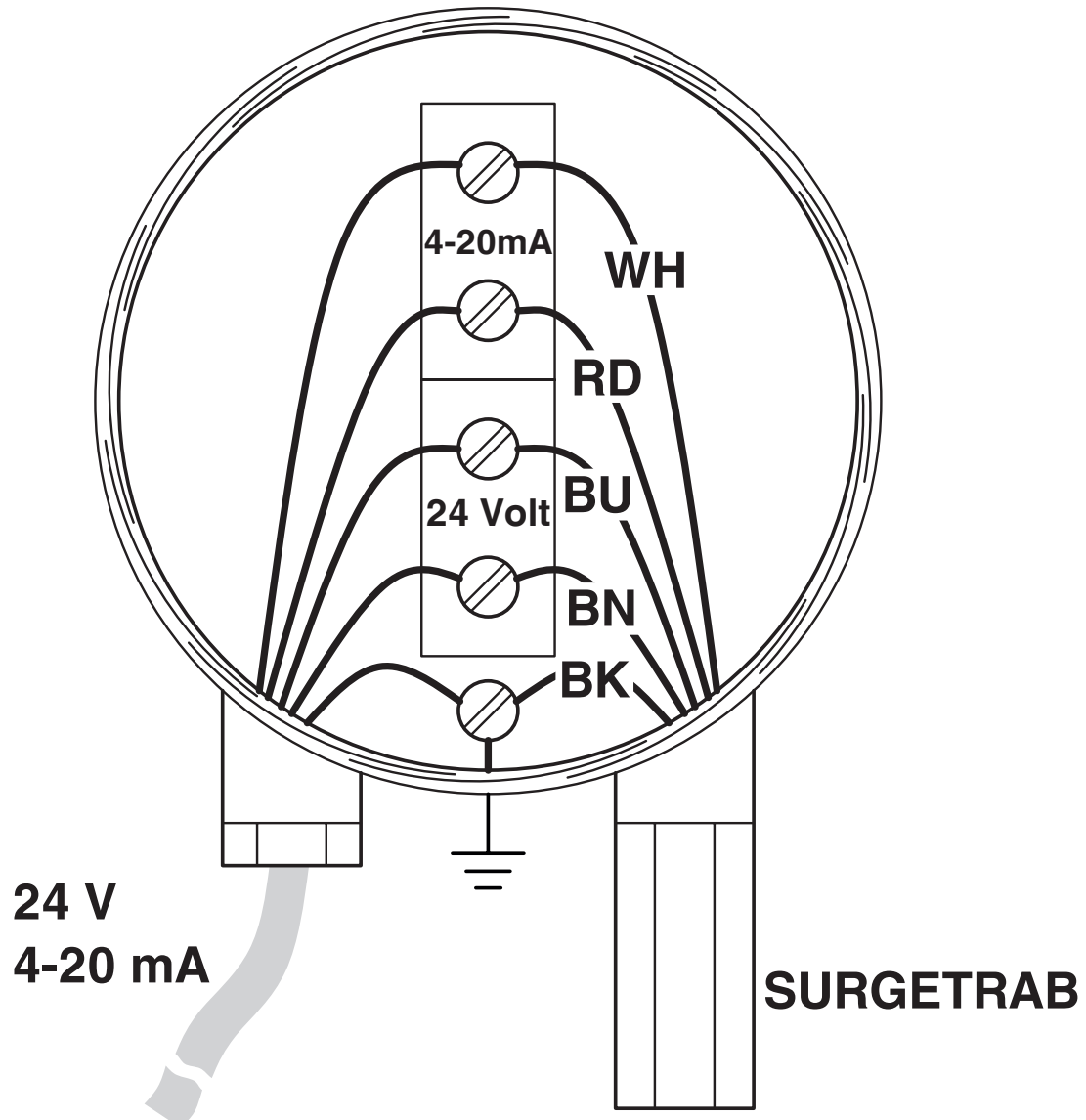
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Application drawing



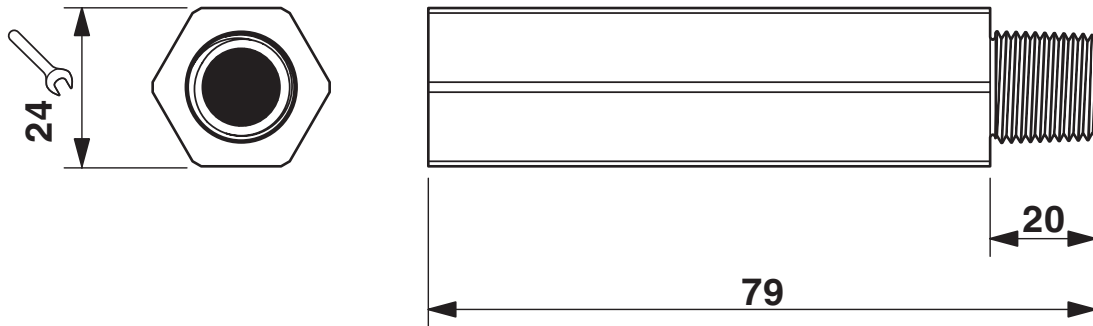
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Dimensional drawing



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Approvals

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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



CCC

Approval ID: 2020322316000794



NEPSI-EX

Approval ID: GYJ20.1159X

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Classifications

ECLASS

ECLASS-11.0	27130807
ECLASS-13.0	27171502

ETIM

ETIM 9.0	EC000943
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UNSPSC

UNSPSC 21.0	39121600
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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	bfb34622-f030-4f7a-bf39-09d5727c158e

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PHOENIX CONTACT GmbH & Co. KG

Flachsmarktstraße 8

D-32825 Blomberg

+49 (0) 5235-3 00

info@phoenixcontact.com