

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



2800034

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

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Surge protection for one floating signal circuit in screw-on module with IP67 degree of protection for sensor heads, connection: M20 x 1.5. Tested in accordance with 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.

## 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
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

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## Technical Data

### Product properties

IEC test classification	C1
	C2
	C3
	D1
Type	Screw-in module
Product type	Surge protection for MCR technology
Product family	SURGETRAB
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
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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 $\mu$ H
Max. input current $I_i$	500 mA (T4 / $\leq 75$ °C)
	500 mA (T5 / $\leq 75$ °C)
	500 mA (T6 / $\leq 60$ °C)
Max. input voltage $U_i$	36 V DC
max. input power $P_i$	3 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	silver
Seal material	NBR
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) $\mu\text{s}$ (line-line)	260 A
Nominal discharge surge current $I_n$ (8/20) $\mu\text{s}$ (Core-Earth)	10 kA
Pulse discharge current $I_{imp}$ (10/350) $\mu\text{s}$	1 kA
Total discharge current $I_{total}$ (8/20) $\mu\text{s}$	20 kA
Total discharge current $I_{total}$ (10/350) $\mu\text{s}$	2 kA
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (line-line)	260 A
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (line-earth)	20 kA
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (line-line)	50 A
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-line) spike	$\leq 130 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-earth) spike	$\leq 1.1 \text{ kV}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-line) static	$\leq 60 \text{ V}$
Voltage protection level $U_p$ (line-line)	$\leq 65 \text{ V}$ (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 (30 MHz / 50 $\Omega$ ) typ. 0.1 dB (6 MHz / 150 $\Omega$ )

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Cut-off frequency $f_g$ (3 dB), sym. in 50 $\Omega$ system	typ. 70 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 150 $\Omega$ 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 (above mean sea level))

## Approval data

### Conformity/Approvals

ATEX	<input type="checkbox"/> II 1 G Ex ia IIC T4...T6
	<input type="checkbox"/> II 2 G Ex d IIC T4...T6
	<input type="checkbox"/> II 1 D Ex iaD 20 IP6x T85 °C...135 °C
	<input type="checkbox"/> 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
Standards/specifications	EN 60079-0
Standards/specifications	EN 60079-1
Standards/specifications	EN 60079-11
Standards/specifications	EN 60079-31
Standards/specifications	IEC 60079-0
Standards/specifications	IEC 60079-1
Standards/specifications	IEC 60079-11
Standards/specifications	IEC 60079-31

## Mounting

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Mounting type	M20
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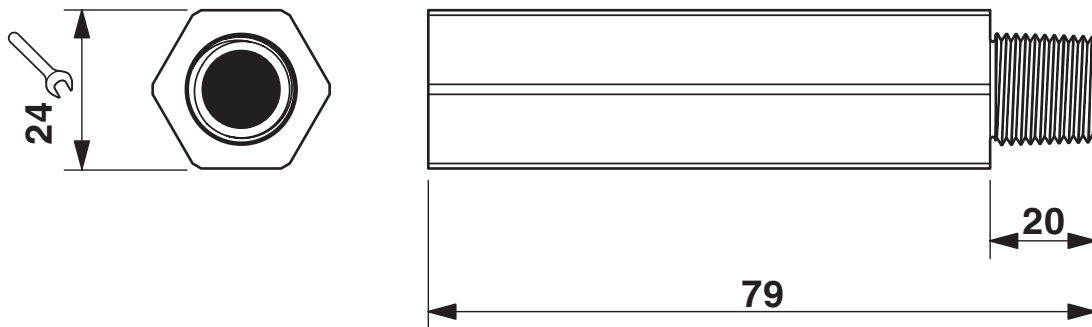
# S-PT-EX-24DC - Surge protection device

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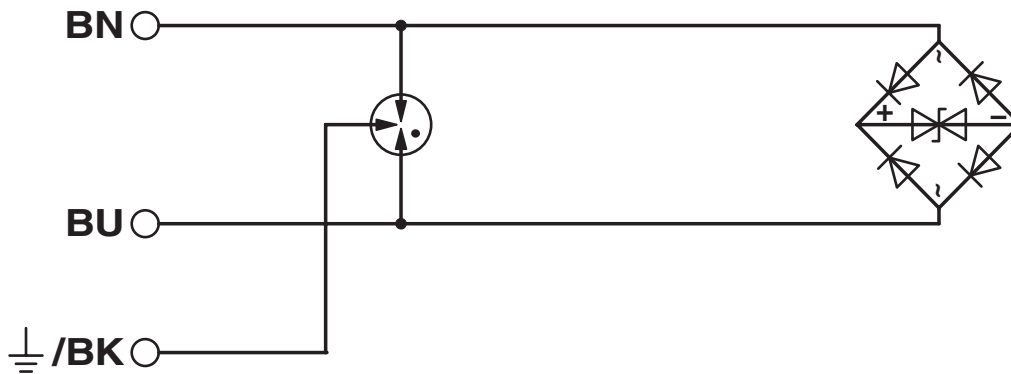
<https://www.phoenixcontact.com/pc/products/2800034>

## Drawings

Dimensional drawing



Circuit diagram

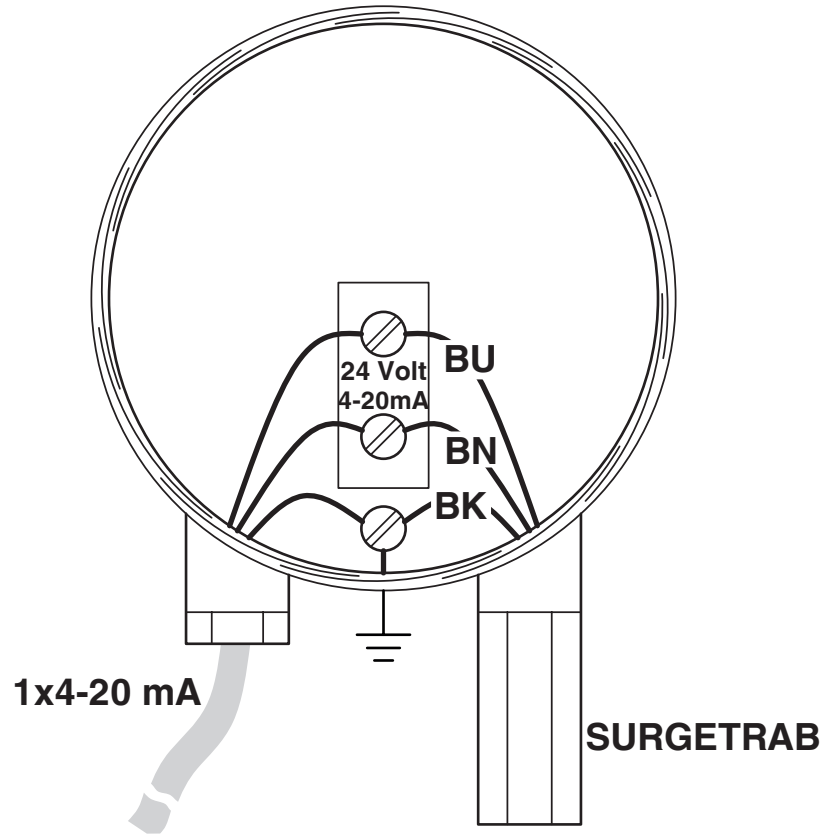


# S-PT-EX-24DC - Surge protection device

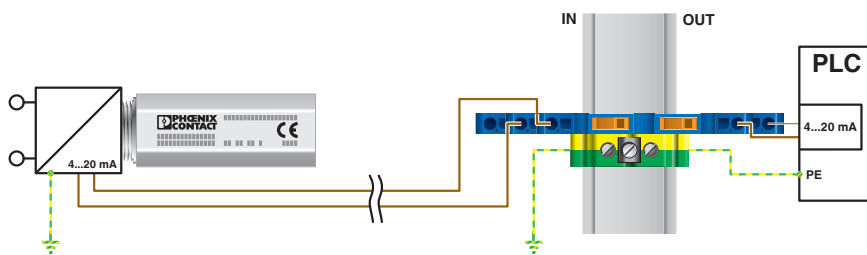
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Application drawing



Application drawing



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## Approvals



**EAC**

Approval ID: EAC-Zulassung



**EAC**

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



**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**

Approval ID: GYJ20.1159X



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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: unlimited = EFUP-e
	No hazardous substances above threshold values

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