

# Surge protection device - S-PT-EX-24DC - 2800034

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Surge protection for one floating signal circuits in screw-on module with IP67 protection for sensor heads, connection M20 x 1.5. 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

- Arresters in hexagonal pipe with various outer threads



## Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 411004
GTIN	4046356411004
Weight per Piece (excluding packing)	194.140 g
Custom tariff number	85363010
Country of origin	Germany

## Technical data

### Dimensions

Height	28 mm
Width	28 mm
Depth	79 mm

### Ambient conditions

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

### General

Housing material	Stainless steel
Color	silver

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## Technical data

### General

Standards for clearances and creepage distances	IEC 60664-1
	IEC 60079-11
Mounting type	M20
Type	Screw-in module
Number of positions	2
Direction of action	Line-Line & Line-Earth Ground

### Protective circuit

IEC test classification	C1
	C2
	C3
	D1
Nominal voltage $U_N$	24 V DC
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 current $I_n$ (8/20) $\mu\text{s}$ (line-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 $\Omega$ )
Cut-off frequency $f_g$ (3 dB), sym. in 50 Ohm system	typ. 70 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 150 Ohm system	typ. 40 MHz
Capacity (line-line)	typ. 20 pF
Capacity (line-earth)	typ. 5 pF

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## Technical data

### Protective circuit

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

### Connection data

Connection method	Individual wires
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### Standards and Regulations

Standards/specifications	EN 61643-21 A2:2013
	EN 60079-0 2012
	EN 60079-1 2007
	EN 60079-11 2012
	EN 60079-31 2009
	IEC 60079-0 2011
	IEC 60079-1 2007
	IEC 60079-11 2011
	IEC 60079-31 2008

### General

Maximum inner capacitance $C_i$	1.65 nF
Max. internal inductance $L_i$	1 $\mu$ H
Max. input current $I_i$	500 mA ( $T_4 / \leq 75^\circ\text{C}$ )
	500 mA ( $T_5 / \leq 75^\circ\text{C}$ )
	500 mA ( $T_6 / \leq 60^\circ\text{C}$ )
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 $^\circ\text{C}$ ... 75 $^\circ\text{C}$ ( $T_4$ )
	-40 $^\circ\text{C}$ ... 75 $^\circ\text{C}$ ( $T_5$ )
	-40 $^\circ\text{C}$ ... 60 $^\circ\text{C}$ ( $T_6$ )

### 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 $^\circ\text{C}$ ...135 $^\circ\text{C}$
	# II 2 D Ex tD A21 IP6x T85 $^\circ\text{C}$ ...135 $^\circ\text{C}$
IECEX	Ga Ex ia IIC T4...T6
	Ex d IIC T4...T6
	Ex iaD IP6x T85 $^\circ\text{C}$ ...135 $^\circ\text{C}$

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## Technical data

### Conformity / approvals

	Ex tD A21 IP6x T85 °C...135 °C
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### Environmental Product Compliance

	Lead 7439-92-1
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

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