

Surge protection device - TTC-6-1X2-M-EX-24DC-UT-I - 2906820

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Surge protection with integrated status indicator and disconnect knife for a 2-wire floating Ex i signal circuit, e.g., 0(4) ... 20 mA current loop, HART-compatible.

Why buy this product

- ✓ Space-saving installation due to the narrow overall width of 6.2 mm
- ✓ Signaling without additional auxiliary power, thanks to the mechanical status indicator
- ✓ Optional remote signaling module monitors up to 40 items, without additional wiring
- ✓ Signal circuits easily interrupted for maintenance work, thanks to vertical knife disconnection
- ✓ Safe behavior in the event of overload, thanks to the integrated disconnect device



Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 135830
GTIN	4055626135830

Technical data

Dimensions

Height	105.8 mm
Width	6.2 mm +0.1 mm
Depth	83.5 mm (incl. DIN rail 7.5 mm)

Ambient conditions

Ambient temperature (operation)	-40 °C ... 85 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m (amsl (above mean sea level))
Degree of protection	IP20

General

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Technical data

General

Housing material	PBT
Flammability rating according to UL 94	V-0
Color	sky blue RAL 5015
Mounting type	DIN rail: TH 35 - 7.5 mm
Type	DIN rail module, one-piece
Direction of action	Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground

Protective circuit

IEC test classification	C1
	C2
	C3
	D1
Nominal voltage U_N	24 V DC
Maximum continuous voltage U_C	30 V DC
Rated current	600 mA (40 °C)
Operating effective current I_C at U_C	$\leq 5 \mu\text{A}$
Residual current I_{PE}	$\leq 1 \mu\text{A}$
Nominal discharge current I_n (8/20) μs (line-line)	5 kA
Nominal discharge current I_n (8/20) μs (line-earth)	5 kA
Pulse discharge current I_{imp} (10/350) μs (line-line)	0.5 kA
Pulse discharge current I_{imp} (10/350) μs (line-earth)	0.5 kA
Total discharge current I_{total} (8/20) μs	10 kA
Voltage protection level U_p (line-line)	$\leq 55 \text{ V}$ (C1 - 1 kV/500 A)
	$\leq 65 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 55 \text{ V}$ (C3 - 100 A)
Voltage protection level U_p (line-earth)	$\leq 900 \text{ V}$ (C1 - 1 kV/500 A)
	$\leq 1.05 \text{ kV}$ (C2 - 10 kV / 5 kA)
	$\leq 1.4 \text{ kV}$ (C3 - 100 A)
Voltage protection level U_p static (line-line)	$\leq 50 \text{ V}$ (C1 - 1 kV/500 A)
	$\leq 65 \text{ V}$ (C2 - 10 kV / 5 kA)
Voltage protection level U_p static (line-earth)	$\leq 900 \text{ V}$ (C1 - 1 kV/500 A)
	$\leq 1.05 \text{ kV}$ (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. 0.3 dB ($\leq 250 \text{ kHz}$ / 150 Ω)
Cut-off frequency f_g (3 dB), sym. in 150 Ohm system	typ. 940 kHz
Capacity (line-line)	typ. 2 nF
Resistance in series	1.65 Ω $\pm 20 \%$
Surge protection fault message	optical
Max. required back-up fuse	630 mA (FF)

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Protective circuit

Impulse durability (line-line)	C1 - 1 kV/500 A
	C2 - 10 kV/5 kA
	C3 - 100 A
Impulse durability (line-earth)	C1 - 1 kV/500 A
	C2 - 10 kV/5 kA
	C3 - 100 A
	D1 - 500 A
Pulse reset time (line-line)	≤ 700 ms
Pulse reset time (line-earth)	≤ 30 ms

Connection data

Connection method	Screw connection
Screw thread	M3
Tightening torque	0.5 Nm ... 0.6 Nm
Stripping length	8 mm
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section solid	0.2 mm ² ... 4 mm ²
Conductor cross section AWG	24 ... 12

Standards and Regulations

Standards/specifications	EN 60079-0 2012 + A11:2013
	EN 60079-11 2012
	EN 61643-21 2001 + A1:2009 + A2:2013
	IEC 60079-0 2011 (modified) + corrigendum 2012 + corrigendum 2013
	IEC 60079-11 2008
	IEC 61643-21 2000 + corrigendum 2001 + A1:2008, modified + A2:2012

General

Maximum inner capacitance C_i	negligible
Max. internal inductance L_i	negligible
Max. input current I_i	400 mA (T4 / ≤ 50 °C)
	350 mA (T6 / ≤ 35 °C)
Max. input voltage U_i	30 V DC
Insulation voltage to ground	> 180 V DC
Ambient temperature (operation)	-40 °C ... 35 °C (T6 / 85 °C)
	-40 °C ... 50 °C (T4 / 135 °C)

Conformity / approvals

UL, USA/Canada	Class I, Div. 2, Groups A, B, C, D T4
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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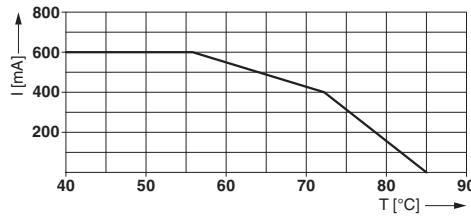
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Drawings

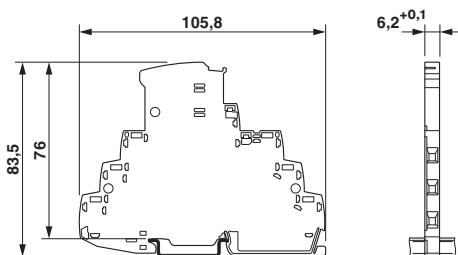
Pictogram



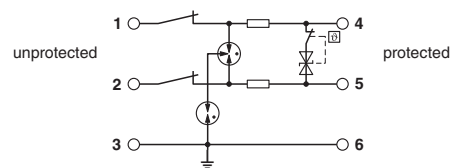
Diagram



Dimensional drawing



Circuit diagram



Approvals

Approvals

Approvals

UL Listed / CSA / CSAus / DNV GL / cCSAus

Ex Approvals


IECEEx / ATEX / UL Listed / cUL Listed / cULus Listed

Approval details

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 138168
CSA		http://www.csagroup.org/services-industries/product-listing/	70136717
CSAus		http://www.csagroup.org/services-industries/product-listing/	70136717

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Approvals

DNV GL	http://exchange.dnv.com/tari/	TAE000027G
cCSAus	 http://www.csagroup.org/services-industries/product-listing/	

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