

# Surge protection device - TTC-6P-1X2-M-EX-24DC-UT-I - 2906824

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Surge protection, consisting of protective plug and base element, 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.

## Your advantages

- ✓ 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
- ✓ The signal is not influenced during maintenance work, thanks to the impedance-neutral insertion and removal of protective plugs
- ✓ Error-free replacement of protective plugs, thanks to coding
- ✓ 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
- ✓ Worldwide use in potentially explosive areas, thanks to ATEX and IECEx approvals
- ✓ Simple testing and documentation with CHECKMASTER 2, thanks to pluggable protective modules



## Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4055626135861
Weight per Piece (excluding packing)	41.190 g
Weight per piece (including packing)	67.700 g
Custom tariff number	85363010
Country of origin	Germany
Sales Key	K1 - Overvoltage Protect.

## Technical data

### Dimensions

Height	105.8 mm
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## Technical data

### Dimensions

Width	6.2 mm +0.1 mm
Depth	100 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

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, two-section, divisible
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 $U_C$	≤ 5 μA
Residual current $I_{PE}$	≤ 1 μA
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)	≤ 55 V (C1 - 1 kV/500 A)
	≤ 65 V (C2 - 10 kV / 5 kA)
	≤ 55 V (C3 - 100 A)
Voltage protection level $U_p$ (line-earth)	≤ 900 V (C1 - 1 kV/500 A)
	≤ 1.05 kV (C2 - 10 kV / 5 kA)
	≤ 1.4 kV (C3 - 100 A)
Voltage protection level $U_p$ static (line-line)	≤ 50 V (C1 - 1 kV/500 A)
	≤ 65 V (C2 - 10 kV / 5 kA)
Voltage protection level $U_p$ static (line-earth)	≤ 900 V (C1 - 1 kV/500 A)

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## Technical data

### Protective circuit

	≤ 1.05 kV (C2 - 10 kV / 5 kA)
Response time $t_A$ (line-line)	≤ 1 ns
Response time $t_A$ (line-earth)	≤ 100 ns
Input attenuation aE, sym.	typ. 0.3 dB (≤ 250 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 ±20 %
Surge protection fault message	optical
Max. required back-up fuse	630 mA (FF)
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 <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section solid	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
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
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### General

Maximum inner capacitance $C_i$	negligible
Max. internal inductance $L_i$	negligible
Max. input current $I_i$	400 mA ( $T_4 / \leq 50 \text{ °C}$ ) 350 mA ( $T_6 / \leq 35 \text{ °C}$ )
Max. input voltage $U_i$	30 V DC

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## Technical data

### General

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 T4A
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### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"