

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



2906824

<https://www.phoenixcontact.com/gb/products/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 and cost-saving with a narrow overall width of just 6 mm
- Continuous monitoring of protective devices, plus mechanical status indicator with optional remote signaling
- Finding the right product for all possible requirements in MCR applications is easy, thanks to the complete range of products with customized features
- Easy testing and documentation with CHECKMASTER 2 with pluggable protective modules
- The signal is not influenced during maintenance work, thanks to the impedance-neutral insertion and removal of protective plugs

Commercial Data

Item number	2906824
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CL2163
Product Key	CL2163
Catalog Page	Page 152 (C-4-2019)
GTIN	4055626135861
Weight per Piece (including packing)	67.5 g
Weight per Piece (excluding packing)	41.19 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	DIN rail module, two-section, divisible
Product type	Surge protection for MCR technology
Wire pairs per module	1

Insulation characteristics

Overvoltage category	III
Pollution degree	2

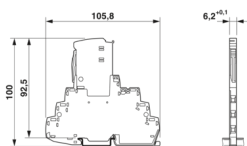
Connection data

Connection method	Screw connection
Screw thread	M3
Tightening torque	0.5 Nm ... 0.6 Nm
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

Ex data

Maximum inner capacitance C_i	negligible
Max. internal inductance L_i	negligible
Max. input current I_i	400 mA (T4 / -40 °C ... +50 °C)
	250 mA (T4 / -40 °C ... +70 °C)
	350 mA (T6 / -40 °C ... +35 °C)
	100 mA (T6 / -40 °C ... +70 °C)
Max. input voltage U_i	30 V DC
Insulation voltage to ground	> 180 V DC
Ambient temperature (operation)	-40 °C ... 70 °C (with current derating)

Dimensions

Dimensional drawing	
Width	6.2 mm +0.1 mm
Height	105.8 mm
Depth	100 mm (incl. DIN rail 7.5 mm)

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Material specifications

Color	sky blue RAL 5015
Flammability rating according to UL 94	V-0
Insulating material	PBT
Housing material	PBT

Mechanical properties

Mechanical data

Open side panel	No
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Protective circuit

Direction of action	Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground
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 surge current I_n (8/20) μs (Core-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 Ω system	typ. 940 kHz
Capacity (Core-Core)	typ. 2 nF
Resistance per path	1.65 $\Omega \pm 20 \%$
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

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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

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 85 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m (amsl (above mean sea level))
Permissible humidity (operation)	5 % ... 95 %

Approval data

Conformity/Approvals

UL, USA / Canada	Class I, Div. 2, Groups A, B, C, D T4A
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Standards and regulations

Standards/specifications	EN 60079-0
Standards/specifications	EN 60079-11
Standards/specifications	EN 61643-21
Standards/specifications	IEC 60079-0
Standards/specifications	IEC 60079-11
Standards/specifications	IEC 61643-21

Mounting

Mounting type	DIN rail: TH 35 - 7.5 mm
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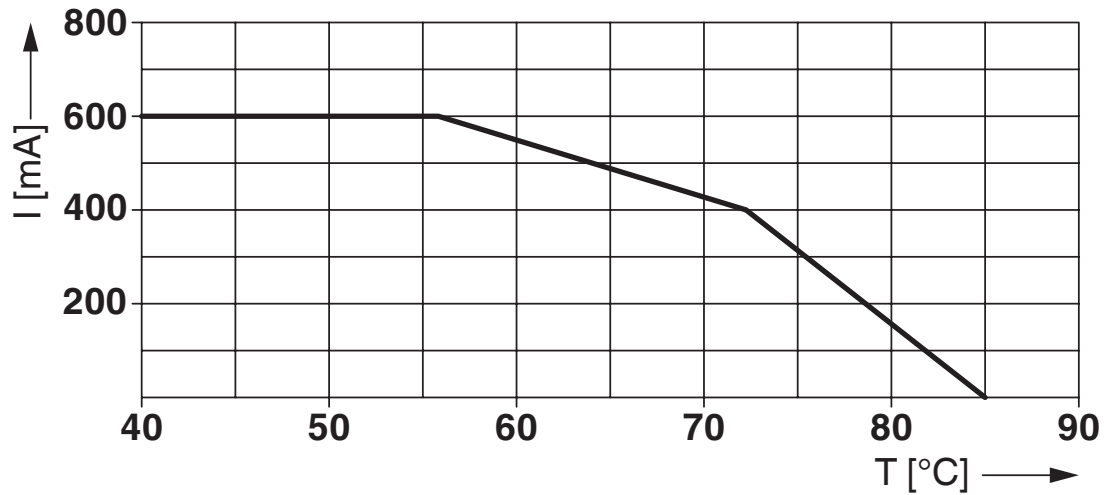
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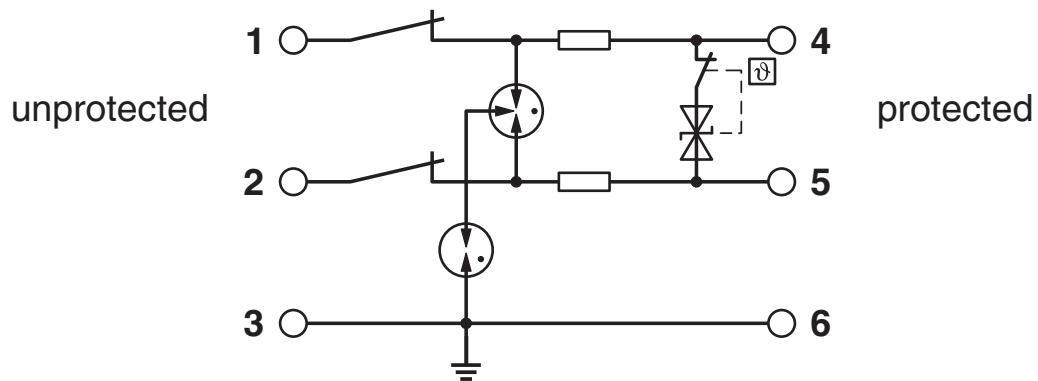
Drawings

Diagram



Derating for non-Ex applications

Circuit diagram



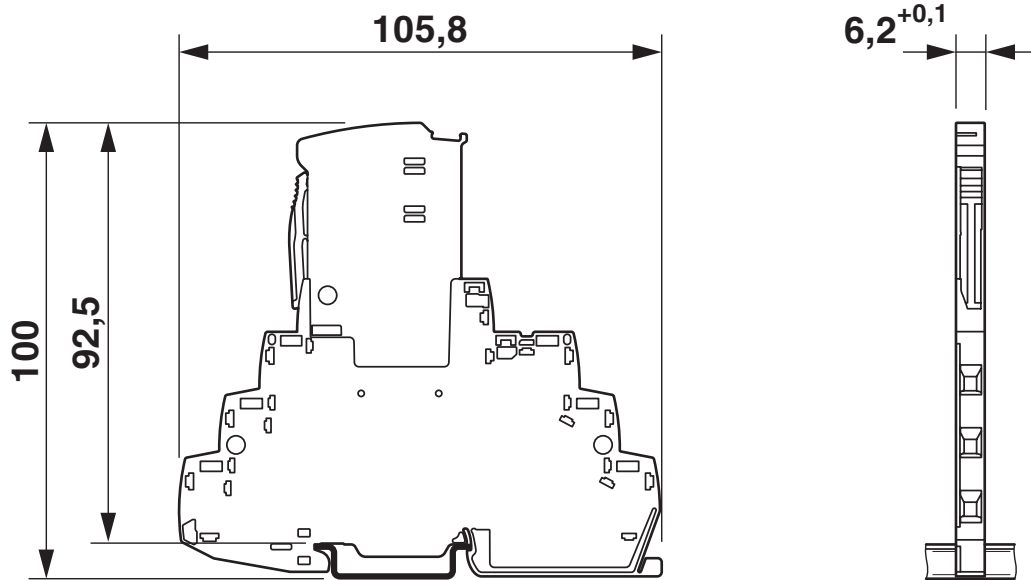
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Dimensional drawing



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Approvals



CSA

Approval ID: 70136717



DNV GL

Approval ID: TAE000027G

Nominal Voltage U_N

Nominal Current I_N

Cross Section AWG

Cross Section mm^2

-

-



UL Listed

Approval ID: FILE E 138168



CSAus

Approval ID: 70136717



IECEx

Approval ID: IECEx BVS 16.0090X



CCC

Approval ID: 2020322316000780



cUL Listed

Approval ID: FILE E 333250



UL Listed

Approval ID: FILE E 333250



ATEX

Approval ID: BVS 16 ATEX E 125 X

INMETRO

Approval ID: DNV 19.0077 X



NEPSI

Approval ID: GYJ20.1114X

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cCSAus

cULus Listed

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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 = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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Accessories

Marker pen

Marker pen - X-PEN 0,35 - 0811228

<https://www.phoenixcontact.com/gb/products/0811228>



Marker pen without ink cartridge, for manual labeling of markers, labeling extremely wipe-proof, line thickness 0.35 mm

Zack Marker strip, flat

Zack Marker strip, flat - ZBF 6 CUS - 0825027

<https://www.phoenixcontact.com/gb/products/0825027>



Zack Marker strip, flat, Strip, can be ordered: Strip, white, labeled according to customer specifications, mounting type: snap into flat marker groove, for terminal block width: 6.2 mm, lettering field size: 5.15 x 6.15 mm, Number of individual labels: 10

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Zack Marker strip, flat

Zack Marker strip, flat - ZBF 6:UNBEDRUCKT - 0808710

<https://www.phoenixcontact.com/gb/products/0808710>



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 6.2 mm, lettering field size: 5.15 x 6.15 mm, Number of individual labels: 10

Zack Marker strip, flat

Zack Marker strip, flat - ZBF 6/WH-100:UNBEDRUCKT - 0808736

<https://www.phoenixcontact.com/gb/products/0808736>



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 6.2 mm, lettering field size: 5.15 x 6.15 mm, Number of individual labels: 1000

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End clamp

End clamp - CLIPFIX 35-5 - 3022276

<https://www.phoenixcontact.com/gb/products/3022276>



Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, with parking option for FBS...5, FBS...6, KSS 5, KSS 6, width: 5.15 mm, color: gray

Remote signaling set

Remote signaling set - TTC-6-FMRS-UT - 2907810

<https://www.phoenixcontact.com/gb/products/2907810>



Module set for the optical monitoring and floating remote signaling of adjacent surge protective devices in the TERMITRAB complete or CLIXTRAB product family. Suitable for directly grounded DIN rails.

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Separating plate

Separating plate - TTC-EX-PP - 1011977

<https://www.phoenixcontact.com/gb/products/1011977>

Partition plate for NS-35/7,5 DIN rails to ensure a clearance of 50 mm between the remote signaling module and surge protection in TTC-EX systems.



Shield connection

Shield connection - SSA 3-6 - 2839295

<https://www.phoenixcontact.com/gb/products/2839295>

Shield fast connection for 3 ... 6 mm cable diameter. Potential connecting cable: 200 mm, 1 mm², color: black



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Shield connection

Shield connection - SSA 5-10 - 2839512

<https://www.phoenixcontact.com/gb/products/2839512>



Shield fast connection for 5 ... 10 mm cable diameter. Potential connecting cable: 200 mm, 1 mm², color: black

Surge protection plug

Surge protection plug - TTC-6P-1X2-EX-24DC-I-P - 2907831

<https://www.phoenixcontact.com/gb/products/2907831>



Surge protection plug with integrated status indicator on the module for one 2-wire floating Ex i signal circuit. Nominal voltage: 24 V DC

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