

# Surge protection device - TTC-6-2X1-24DC-UT



2906799

<https://www.phoenixcontact.com/us/products/2906799>

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Surge protection for two signal wires with common reference potential, e.g., Digital IN/OUT.



## Your advantages

- Space saving with a narrow overall width of just 6□mm
- Cost-optimized with tailored product features
- Easy selection for all possible demands in MCR applications with a complete product portfolio

## Commercial Data

Item number	2906799
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to Order (non-returnable)
Sales Key	C07
Product Key	CL2261
Catalog Page	Page 130 (C-4-2019)
GTIN	4055626135540
Weight per Piece (including packing)	39 g
Weight per Piece (excluding packing)	39 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, one-piece
Product type	Surge protection for MCR technology

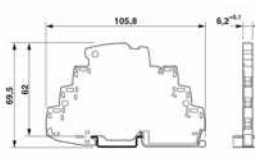
### Insulation characteristics

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 <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

### Dimensions

Dimensional drawing	
Width	6.2 mm +0.1 mm
Height	105.8 mm
Depth	69.5 mm (incl. DIN rail 7.5 mm)

### Material specifications

Color	traffic grey A RAL 7042
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

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Direction of action	Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground
Maximum continuous voltage $U_C$	30 V DC
	21 V AC
Rated current	600 mA (40 °C)
Operating effective current $I_C$ at $U_C$	$\leq 5 \mu\text{A}$
Residual current $I_{PE}$	$\leq 10 \mu\text{A}$
Nominal discharge surge current $I_n$ (8/20) $\mu\text{s}$ (Core-Earth)	5 kA
Pulse discharge current $I_{imp}$ (10/350) $\mu\text{s}$ (line-earth)	0.5 kA
Total discharge current $I_{total}$ (8/20) $\mu\text{s}$	10 kA
Voltage protection level $U_p$ (line-earth)	$\leq 140 \text{ V}$ (C1 - 1 kV / 500 A)
	$\leq 130 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 45 \text{ V}$ (C3 - 25 A)
	$\leq 50 \text{ V}$ (C3 - 100 A)
Voltage protection level $U_p$ static (line-earth)	$\leq 55 \text{ V}$ (C1 - 1 kV / 500 A)
	$\leq 80 \text{ V}$ (C2 - 10 kV / 5 kA)
Response time $t_A$ (line-earth)	$\leq 1 \text{ ns}$
Input attenuation aE, asym.	typ. 0.3 dB ( $\leq 270 \text{ kHz} / 150 \Omega$ )
	typ. 0.3 dB ( $\leq 407 \text{ kHz} / 100 \Omega$ )
Cut-off frequency $f_g$ (3 dB), asym. (PE) in 100 $\Omega$ system	typ. 1280 kHz
Cut-off frequency $f_g$ (3 dB), asym. (PE) in 150 $\Omega$ system	typ. 960 kHz
Capacity (Core-Earth)	typ. 2.2 nF
Resistance per path	1.65 $\Omega \pm 20 \%$
Surge protection fault message	none
Max. required back-up fuse	630 mA (FF)
Impulse durability (line-earth)	C1 - 1 kV / 500 A
	C2 - 10 kV / 5 kA
	C3 - 100 A
	D1 - 500 A
Pulse reset time (line-earth)	$\leq 300 \text{ ms}$

## Additional technical data

Max. total discharge current $I_{total \max}$ (8/20) $\mu\text{s}$	20 kA (1x)
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## 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	$\leq 4000 \text{ m}$ (amsl (above mean sea level))
Permissible humidity (operation)	5 % ... 95 %

## Approval data

### Conformity/Approvals

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UL, USA / Canada	Class I, Div. 2, Groups A, B, C, D T4
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## Standards and regulations

Standards/specifications	IEC 61643-21
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EN 61643-21

Standards/specifications	EN 61643-21
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## Mounting

Mounting type	DIN rail: TH 35 - 7.5 mm
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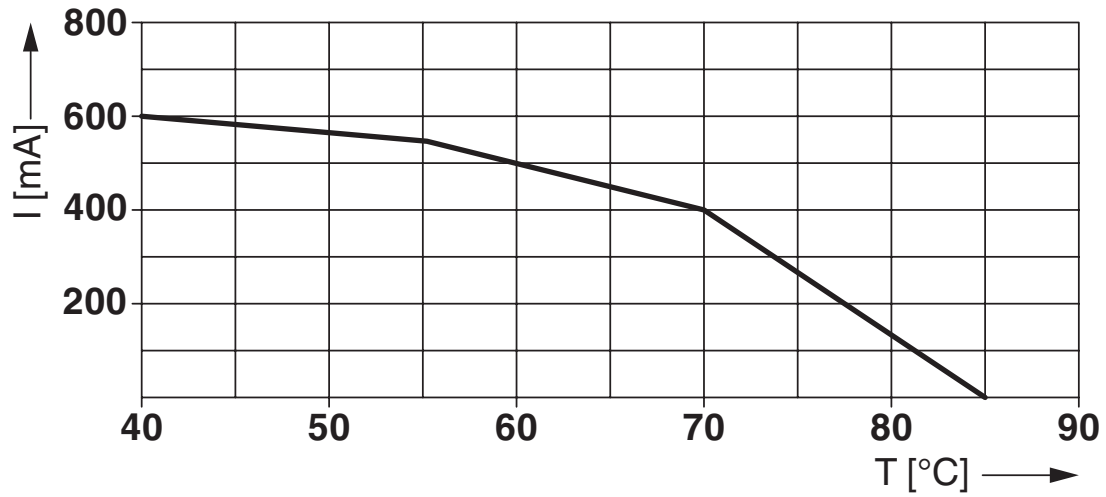


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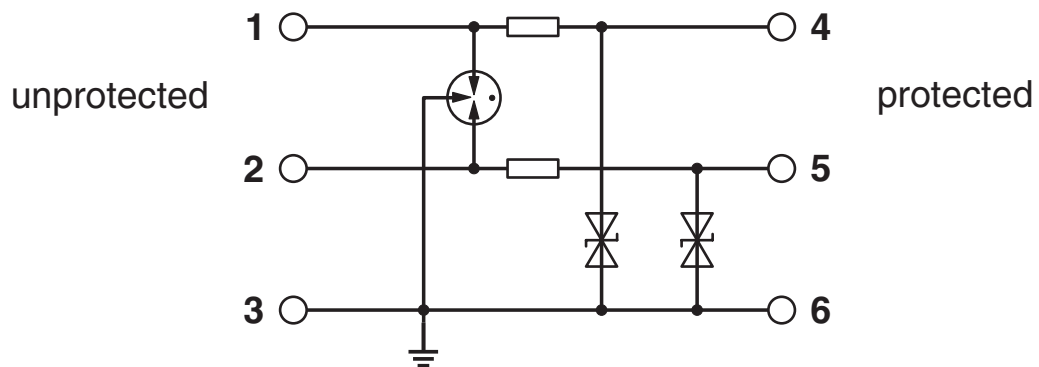
<https://www.phoenixcontact.com/us/products/2906799>

## Drawings

Diagram



Circuit diagram



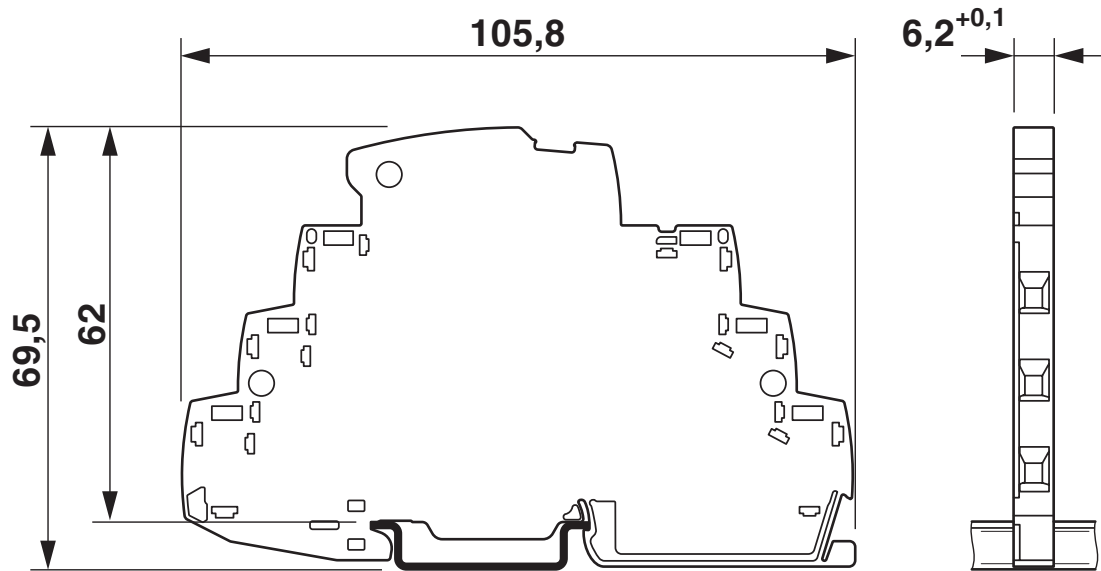
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Dimensional drawing



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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  $\text{mm}^2$

-

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**UL Listed**

Approval ID: FILE E 138168



**CSAus**

Approval ID: 70136717



**cUL Listed**

Approval ID: FILE E 333250



**UL Listed**

Approval ID: FILE E 333250

**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/us/products/0811228>



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

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### Zack Marker strip, flat

Zack Marker strip, flat - ZBF 6 CUS - 0825027

<https://www.phoenixcontact.com/us/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/us/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

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## Zack Marker strip, flat

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

<https://www.phoenixcontact.com/us/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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## Zack Marker strip, flat

Zack Marker strip, flat - ZBF 6,QR:FORTL.ZAHLEN - 0808765

<https://www.phoenixcontact.com/us/products/0808765>



Zack Marker strip, flat, Strip, white, labeled, Printed vertically: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... 100, mounting type: snapped, 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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## End clamp

End clamp - CLIPFIX 35-5 - 3022276

<https://www.phoenixcontact.com/us/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

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## Fuse holder

Fuse holder - TTC-6-FC-UT - 1054762

<https://www.phoenixcontact.com/us/products/1054762>



Fuse carrier for surge protective devices of the TERMITRAB complete product range with screw connection technology. Multi-level connection on TTC-6 housings possible. For conventional 5x20 mm miniature fuses.

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## Shield connection

Shield connection - SSA 3-6 - 2839295

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



Shield fast connection for 3 ... 6 mm cable diameter. Potential connecting cable: 200 mm, 1 mm<sup>2</sup>, color: black

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## Shield connection

Shield connection - SSA 5-10 - 2839512

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



Shield fast connection for 5 ... 10 mm cable diameter. Potential connecting cable:  
200 mm, 1 mm<sup>2</sup>, color: black

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