

Surge protection device - TTC-6P-2X1-F-48DC-PT-I



2908209

<https://www.phoenixcontact.com/us/products/2908209>

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Surge protection, consisting of protective plug and base element, with integrated status indicator for two signal wires with common reference potential, e.g., Digital IN/OUT. Indirect grounding via gas-filled surge arrester.

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	2908209
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to Order (non-returnable)
Sales Key	C07
Product Key	CL2162
Catalog Page	Page 129 (C-4-2019)
GTIN	4055626282923
Weight per Piece (including packing)	41.8 g
Weight per Piece (excluding packing)	41.8 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

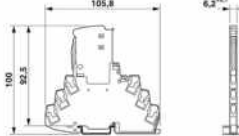
Insulation characteristics

Overvoltage category	III
Pollution degree	2

Connection data

Connection method	Push-in connection
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

Dimensions

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

Material specifications

Color	traffic grey A RAL 7042
	light grey RAL 7035
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
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Maximum continuous voltage U_C	53 V DC
	30 V AC
Rated current	220 mA DC (75 °C)
	600 mA AC (56 °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 surge current I_n (8/20) μs (Core-Earth)	5 kA
Nominal discharge current I_n (8/20) μs (line-signal ground)	5 kA
Pulse discharge current I_{imp} (10/350) μs (line-earth)	0.5 kA
Pulse discharge current I_{imp} (10/350) μs (line-signalground)	0.5 kA
Total discharge current I_{total} (8/20) μs	10 kA
Voltage protection level U_p (line-earth)	$\leq 750 \text{ V}$ (C1 - 1 kV / 500 A)
	$\leq 750 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 800 \text{ V}$ (C3 - 25 A)
	$\leq 1.1 \text{ kV}$ (C3 - 50 A)
Voltage protection level U_p (line-signalground)	$\leq 110 \text{ V}$ (C1 - 1 kV / 500 A)
	$\leq 150 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 80 \text{ V}$ (C3 - 25 A)
	$\leq 90 \text{ V}$ (C3 - 50 A)
Voltage protection level U_p static (line-earth)	$\leq 750 \text{ V}$ (C1 - 1 kV / 500 A)
	$\leq 750 \text{ V}$ (C2 - 10 kV / 5 kA)
Voltage protection level U_p static (line-signalground)	$\leq 105 \text{ V}$ (C1 - 1 kV / 500 A)
	$\leq 150 \text{ V}$ (C2 - 10 kV / 5 kA)
Response time t_A (line-earth)	$\leq 100 \text{ ns}$
Response time t_A (line-signalground)	$\leq 1 \text{ ns}$
Input attenuation aE, asym.	typ. 0.3 dB ($\leq 480 \text{ kHz}$ / 150 Ω)
Cut-off frequency f_g (3 dB), asym. (signal ground) in 150 Ω system	typ. 1.7 MHz
Capacity (Core-Earth)	typ. 1.2 nF
Capacity (line-signalground)	typ. 5 pF
Resistance per path	1.65 $\Omega \pm 20 \%$
Surge protection fault message	optical
Max. required back-up fuse	160 mA DC (FF)
	630 mA AC (FF)
Impulse durability (line-earth)	C1 - 1 kV / 500 A
	C2 - 10 kV / 5 kA
	C3 - 57 A
	D1 - 500 A
Impulse durability (line-signalground)	C1 - 1 kV / 500 A
	C2 - 10 kV / 5 kA
	C3 - 57 A
	D1 - 500 A
Pulse reset time (line-earth)	$\leq 30 \text{ ms}$
Pulse reset time (line-signalground)	$\leq 600 \text{ ms}$

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Additional technical data

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

Standards and regulations

Standards/specifications	IEC 61643-21
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EN 61643-21

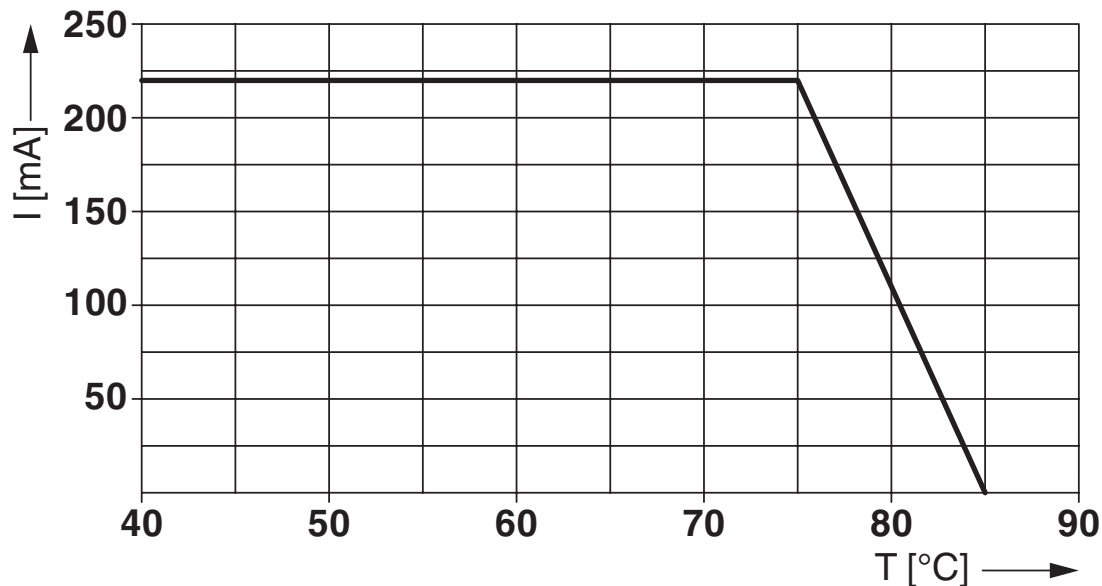
Standards/specifications	EN 61643-21
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Mounting

Mounting type	DIN rail: TH 35 - 7.5 mm
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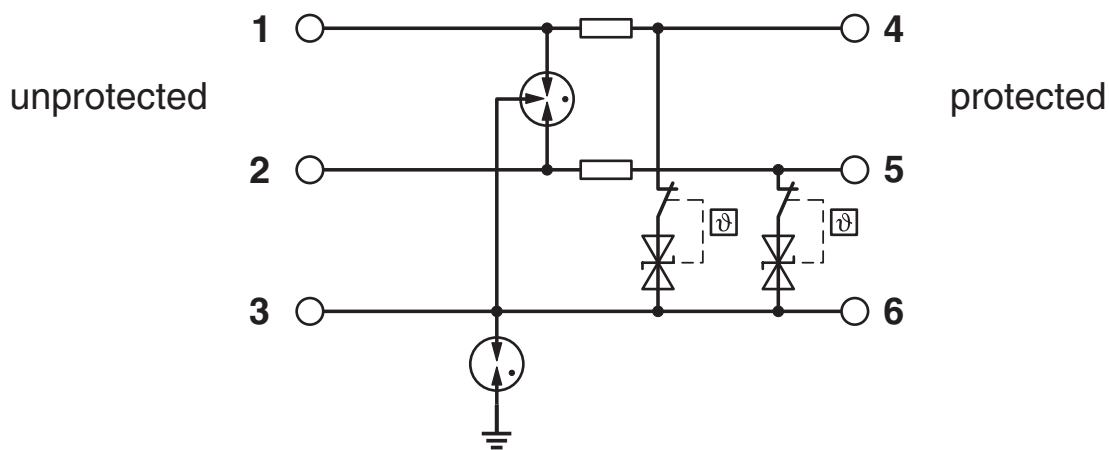
Drawings

Diagram



Derating curve at 55.2 V DC

Circuit diagram



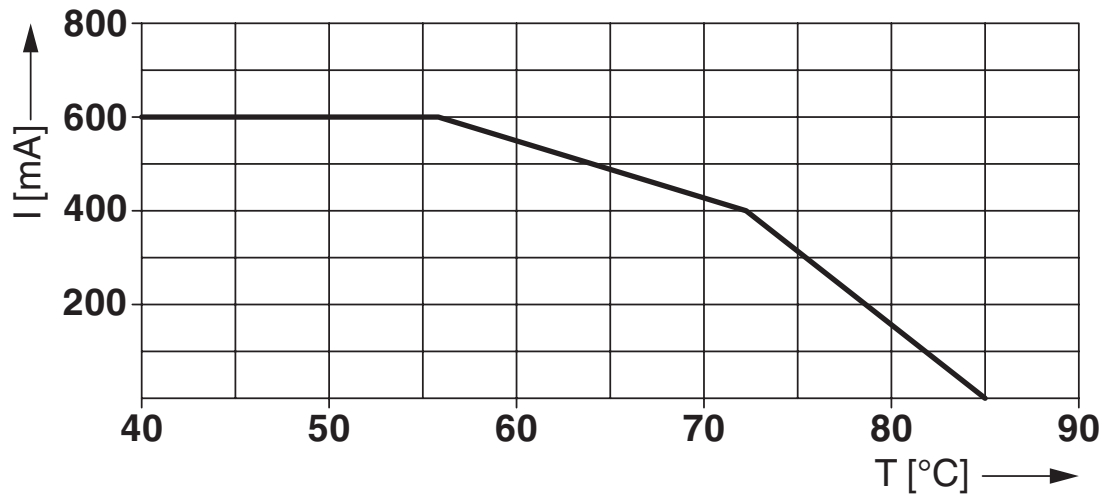
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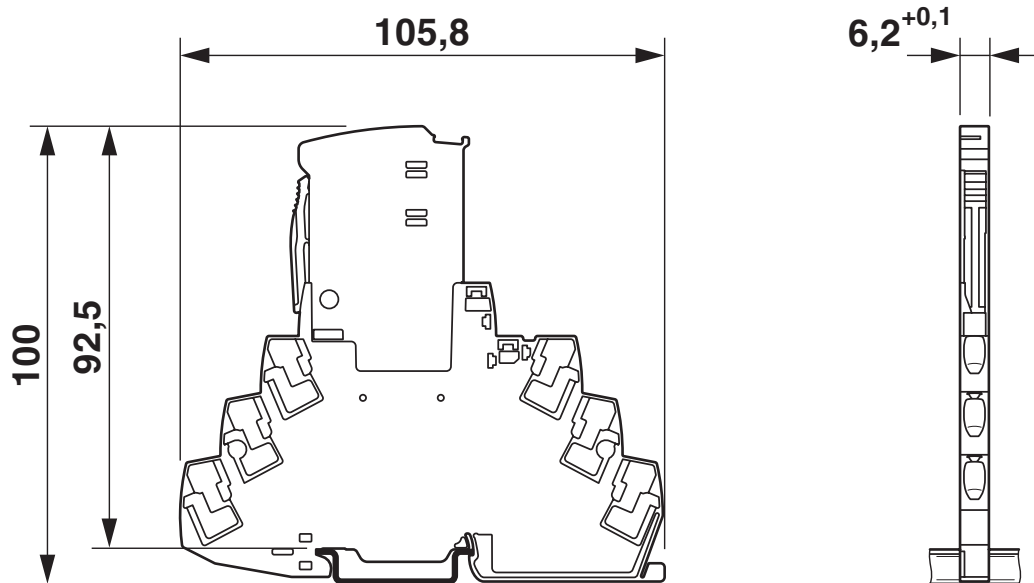
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Diagram



Derating curve at 30 V AC

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

cCSAus

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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

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

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

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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Remote signaling set

Remote signaling set - TTC-6-FMRS-PT - 2907811

<https://www.phoenixcontact.com/us/products/2907811>



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.

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 mm², 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 mm², color: black

Surge protection plug

Surge protection plug - TTC-6P-2X1-48DC-I-P - 2907844

<https://www.phoenixcontact.com/us/products/2907844>



Surge protection plug with integrated status indicator on the module for two signal wires with a common reference potential. Nominal voltage: 48 V DC

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Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com