

## Surge protection device - TTC-6P-2X1-F-48DC-PT-I - 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 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
- ✓ Quick and tool-free installation of surge protective devices, thanks to Push-in connection technology
- ✓ 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
- ✓ Safe behavior in the event of overload, thanks to the integrated disconnect device
- ✓ Grounded or insulated shield grounding, thanks to the third terminal point on the surge protective device
- ✓ Simple testing and documentation with CHECKMASTER 2, thanks to pluggable protective modules



### Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4055626282923
Weight per Piece (excluding packing)	41.800 g
Custom tariff number	85363010
Country of origin	Germany

### Technical data

#### Dimensions

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

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## Technical data

### Ambient conditions

Ambient temperature (operation)	-40 °C ... 85 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 4000 m (amsl (above mean sea level))
Degree of protection	IP20

### General

Housing material	PBT
Flammability rating according to UL 94	V-0
Color	traffic grey A RAL 7042
	light grey RAL 7035
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 $U_N$	48 V DC
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 $U_C$	≤ 5 μA
Residual current $I_{PE}$	≤ 1 μA
Nominal discharge current $I_n$ (8/20) μs (line-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)	≤ 750 V (C1 - 1 kV/500 A)
	≤ 750 V (C2 - 10 kV / 5 kA)
	≤ 800 V (C3 - 25 A)
	≤ 1.1 kV (C3 - 50 A)
Voltage protection level $U_p$ (line-signalground)	≤ 110 V (C1 - 1 kV/500 A)
	≤ 150 V (C2 - 10 kV / 5 kA)
	≤ 80 V (C3 - 25 A)
	≤ 90 V (C3 - 50 A)
Voltage protection level $U_p$ static (line-earth)	≤ 750 V (C1 - 1 kV/500 A)

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## Technical data

### Protective circuit

	≤ 750 V (C2 - 10 kV / 5 kA)
Voltage protection level $U_p$ static (line-signalground)	≤ 105 V (C1 - 1 kV/500 A)
	≤ 150 V (C2 - 10 kV / 5 kA)
Response time $t_A$ (line-signalground)	≤ 1 ns
Response time $t_A$ (line-earth)	≤ 100 ns
Input attenuation aE, asym.	typ. 0.3 dB (≤ 480 kHz / 150 Ω)
Cut-off frequency $f_g$ (3 dB), asym. (GND) in 150 Ohm system	typ. 1.7 MHz
Capacity (line-signalground)	typ. 5 pF
Capacity (line-earth)	typ. 1.2 nF
Resistance per path	1.65 Ω ±20 %
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)	≤ 30 ms
Pulse reset time (line-signalground)	≤ 600 ms

### Additional technical data

Max. total discharge current $I_{total\ max}$ (8/20) μs	20 kA (1x)
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### Connection data

Connection method	Push-in connection
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	IEC 61643-21 2000 + corrigendum 2001 + A1:2008, modified + A2:2012
	EN 61643-21 2001 + A1:2009 + A2:2013

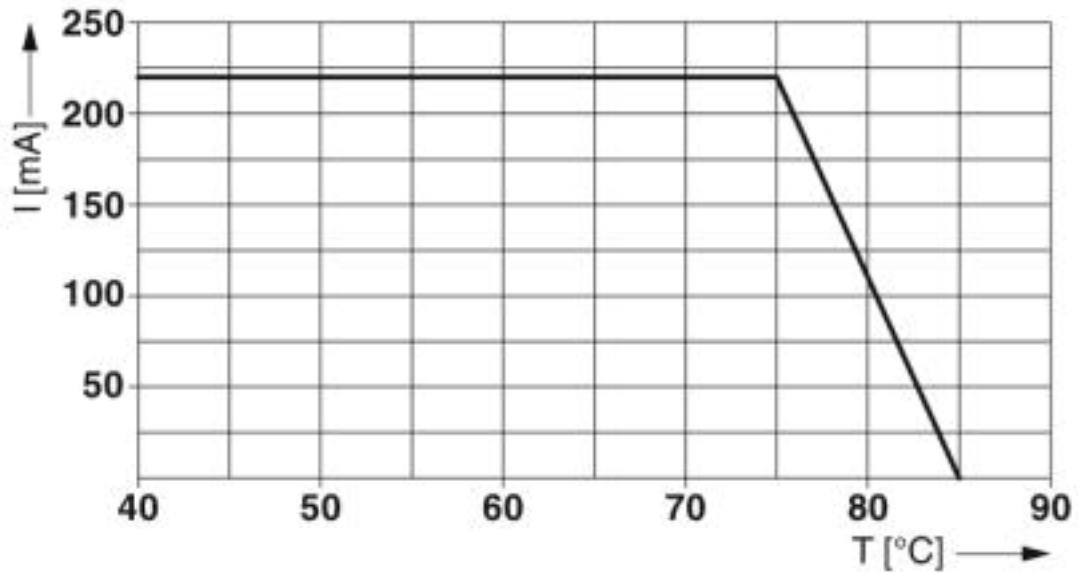
### Environmental Product Compliance

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"

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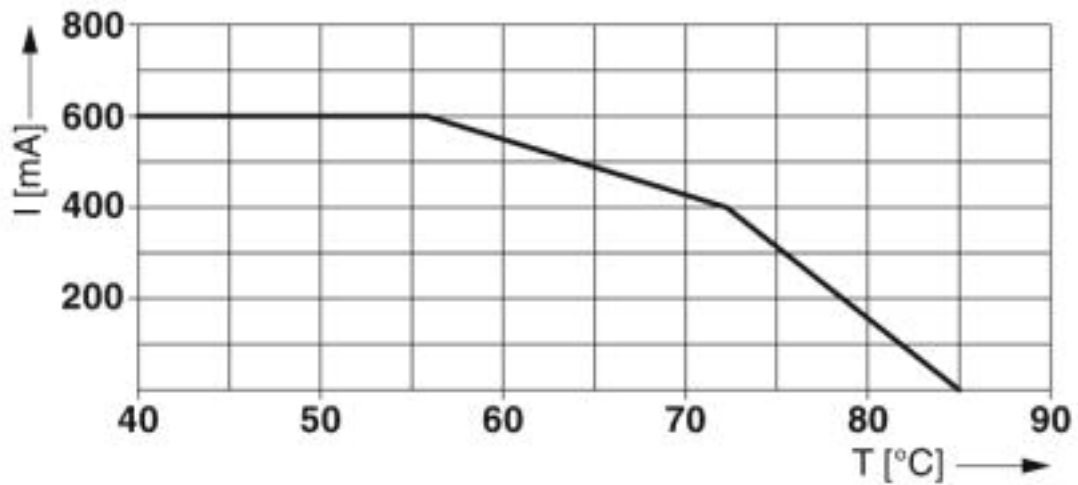
## Drawings

Diagram



Derating curve at 55.2 V DC

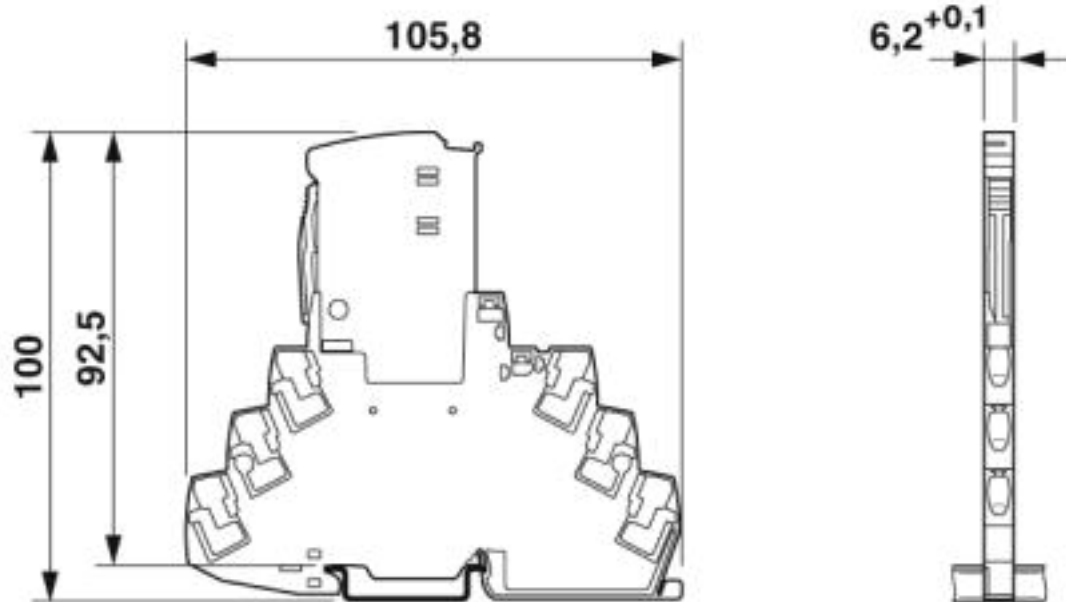
Diagram



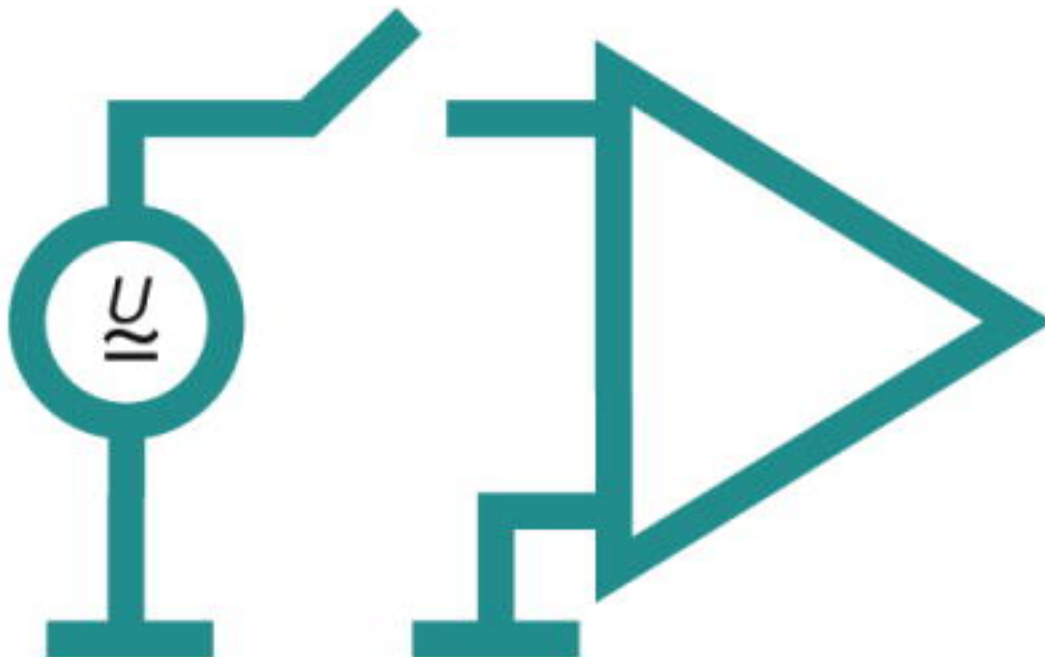
Derating curve at 30 V AC

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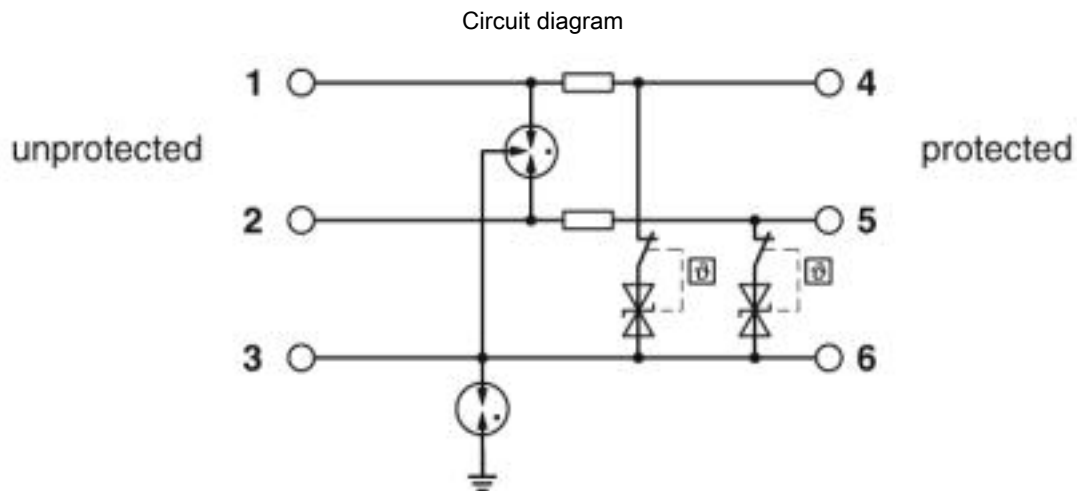
Dimensional drawing



Pictogram



## Surge protection device - TTC-6P-2X1-F-48DC-PT-I - 2908209



### Classifications

#### eCl@ss

eCl@ss 4.0	27140201
eCl@ss 4.1	27130801
eCl@ss 5.0	27130801
eCl@ss 5.1	27130801
eCl@ss 6.0	27130800
eCl@ss 7.0	27130807
eCl@ss 8.0	27130807
eCl@ss 9.0	27130807

#### ETIM

ETIM 3.0	EC000943
ETIM 4.0	EC000943
ETIM 5.0	EC000943
ETIM 6.0	EC000943
ETIM 7.0	EC000943

#### UNSPSC

UNSPSC 6.01	30212010
UNSPSC 7.0901	39121610
UNSPSC 11	39121610
UNSPSC 12.01	39121610
UNSPSC 13.2	39121620
UNSPSC 18.0	39121620
UNSPSC 19.0	39121620
UNSPSC 20.0	39121620
UNSPSC 21.0	39121620

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## Approvals

### Approvals

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#### Approvals

DNV GL / CSA / UL Listed / CSAus / cCSAus

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#### Ex Approvals

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### Approval details

DNV GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	TAE000027G
CSA		<a href="http://www.csagroup.org/services-industries/product-listing/">http://www.csagroup.org/services-industries/product-listing/</a>	70136717
UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 138168
CSAus		<a href="http://www.csagroup.org/services-industries/product-listing/">http://www.csagroup.org/services-industries/product-listing/</a>	70136717
cCSAus			

## Accessories

### Accessories

#### End block

End clamp - CLIPFIX 35-5 - 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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### Accessories

#### Labeled terminal marker

Zack Marker strip, flat - ZBF 6 CUS - 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

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



Zack Marker strip, flat, Strip, white, labeled, Printed vertically: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... 100, 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

#### Marker pen

Marker pen - X-PEN 0,35 - 0811228



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

#### Terminal marking

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



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, 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

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



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, 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

#### Additional products



## Surge protection device - TTC-6P-2X1-F-48DC-PT-I - 2908209

### Accessories

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



Module set for the optical monitoring and floating remote signaling of neighboring surge protective devices of the TERMITRAB complete product range.

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Shield connection - SSA 3-6 - 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 - SSA 5-10 - 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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### Spare parts

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