

TTC-6P-1X2-F-48DC-PT-I - Surge protection device



2908200

<https://www.phoenixcontact.com/be/products/2908200>

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Surge protection, consisting of protective plug and base element, with integrated status indicator for a 2-wire floating signal circuit. 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	2908200
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL2162
Product key	CL2162
Catalog page	Page 117 (C-4-2019)
GTIN	4055626282831
Weight per piece (including packing)	42,3 g
Weight per piece (excluding packing)	37,04 g
Customs tariff number	85363010
Country of origin	DE

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Technical data

Product properties

Product type	Surge protection for MCR technology
Product family	TERMITRAB complete
IEC test classification	C1
	C2
	C3
	D1
Type	DIN rail module, two-section, divisible
Wire pairs per module	1

Insulation characteristics

Overvoltage category	III
Pollution degree	2

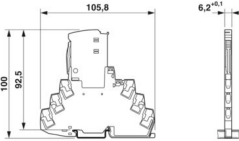
Electrical properties

Nominal voltage U_N	48 V DC
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Connection data

Connection method	Push-in connection
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section rigid	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 (Base element)	gray (RAL 7042)
Color (Male connector)	light grey (RAL 7035)
Flammability rating according to UL 94	V-0
Insulating material	PBT
Housing material	PBT

Mechanical properties

Mechanical data

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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	55.2 V DC 30 V AC
Rated current	160 mA DC (75 °C) 600 mA AC (56 °C)
Operating effective current I_C at U_C	$\leq 5 \mu A$
Residual current I_{PE}	$\leq 1 \mu A$
Nominal discharge current I_n (8/20) μs (line-line)	5 kA
Nominal discharge current I_n (8/20) μs (line-ground)	5 kA
Nominal discharge current I_n (8/20) μs (line-signal ground)	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
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-line)	$\leq 180 V$ (C1 - 1 kV / 500 A) $\leq 400 V$ (C2 - 10 kV / 5 kA) $\leq 85 V$ (C3 - 25 A) $\leq 90 V$ (C3 - 100 A)
Voltage protection level U_p (line-earth)	$\leq 900 V$ (C1 - 1 kV / 500 A) $\leq 1.05 kV$ (C2 - 10 kV / 5 kA) $\leq 1.3 kV$ (C3 - 25 A) $\leq 1.4 kV$ (C3 - 100 A)
Voltage protection level U_p (line-signalground)	$\leq 750 V$ (C1 - 1 kV / 500 A) $\leq 750 V$ (C2 - 10 kV / 5 kA) $\leq 700 V$ (C3 - 25 A) $\leq 750 V$ (C3 - 100 A)
Voltage protection level U_p static (line-line)	$\leq 45 V$ (C1 - 1 kV / 500 A) $\leq 160 V$ (C2 - 10 kV / 5 kA)
Voltage protection level U_p static (line-earth)	$\leq 900 V$ (C1 - 1 kV / 500 A) $\leq 1.05 kV$ (C2 - 10 kV / 5 kA)
Voltage protection level U_p static (line-signalground)	$\leq 750 V$ (C1 - 1 kV / 500 A) $\leq 750 V$ (C2 - 10 kV / 5 kA)
Response time t_A (line-line)	$\leq 1 ns$
Response time t_A (line-earth)	$\leq 100 ns$
Response time t_A (line-signalground)	$\leq 100 ns$
Input attenuation aE, sym.	typ. 0.3 dB ($\leq 470 kHz / 150 \Omega$)
Cut-off frequency f_g (3 dB), sym. in 150 Ω system	typ. 1.8 MHz
Capacity (Core-Core)	typ. 1.1 nF
Resistance per path	1.65 $\Omega \pm 20 \%$
Surge protection fault message	optical

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Max. required back-up fuse	160 mA DC (FF)
	630 mA AC (FF)
Impulse durability (line-line)	C1 - 1 kV / 500 A
	C2 - 10 kV / 5 kA
	C3 - 50 A
Impulse durability (line-earth)	C1 - 1 kV / 500 A
	C2 - 10 kV / 5 kA
	C3 - 100 A
	D1 - 500 A
Impulse durability (line-signalground)	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
Pulse reset time (line-signalground)	≤ 1500 ms

Additional technical data

Max. total discharge current $I_{\text{total max}}$ (8/20) μs	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)
Permissible humidity (operation)	5 % ... 95 %

Standards and regulations

Standards/specifications	IEC 61643-21
Note	2000 + corrigendum 2001 + A1:2008, modified + A2:2012

EN 61643-21

Standards/specifications	EN 61643-21
Note	2001 + A1:2009 + A2:2013

Mounting

Mounting type	DIN rail: TH 35 - 7.5 mm
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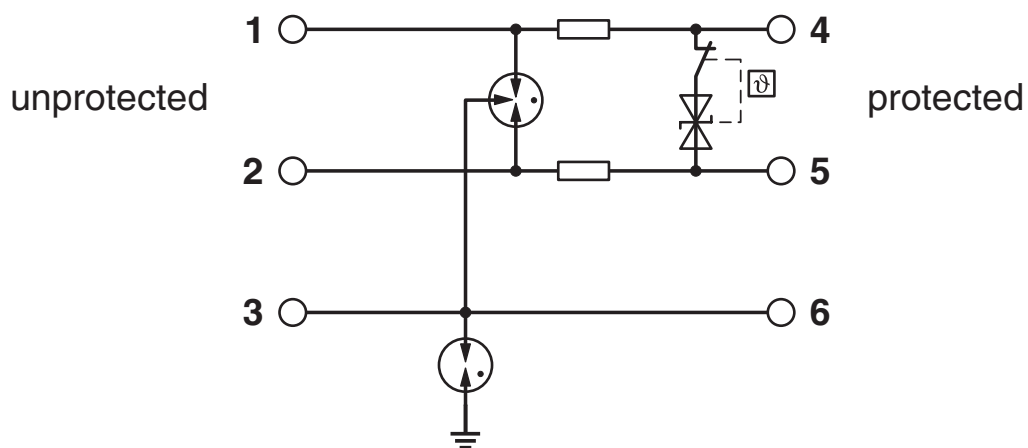
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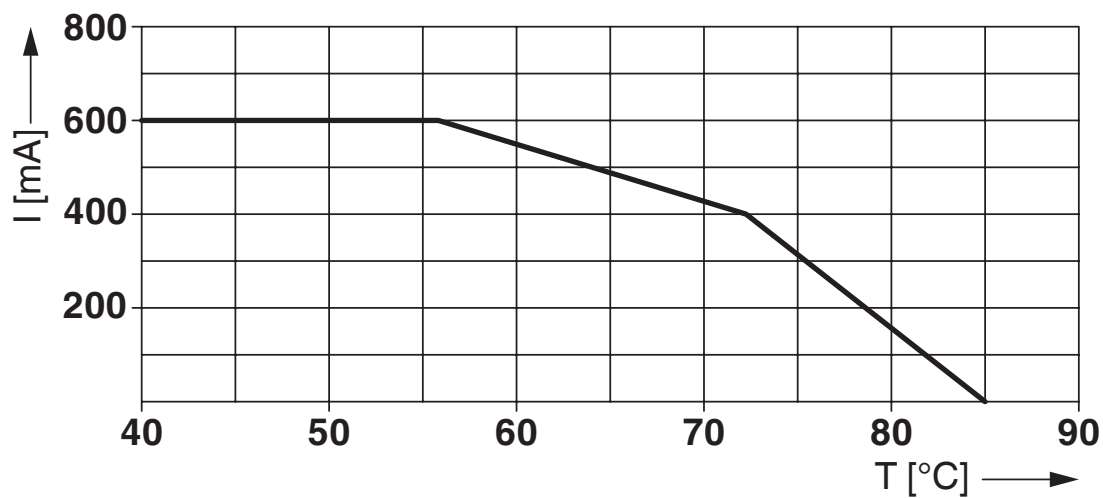


Drawings

Circuit diagram



Diagram



Derating curve at 30 V AC

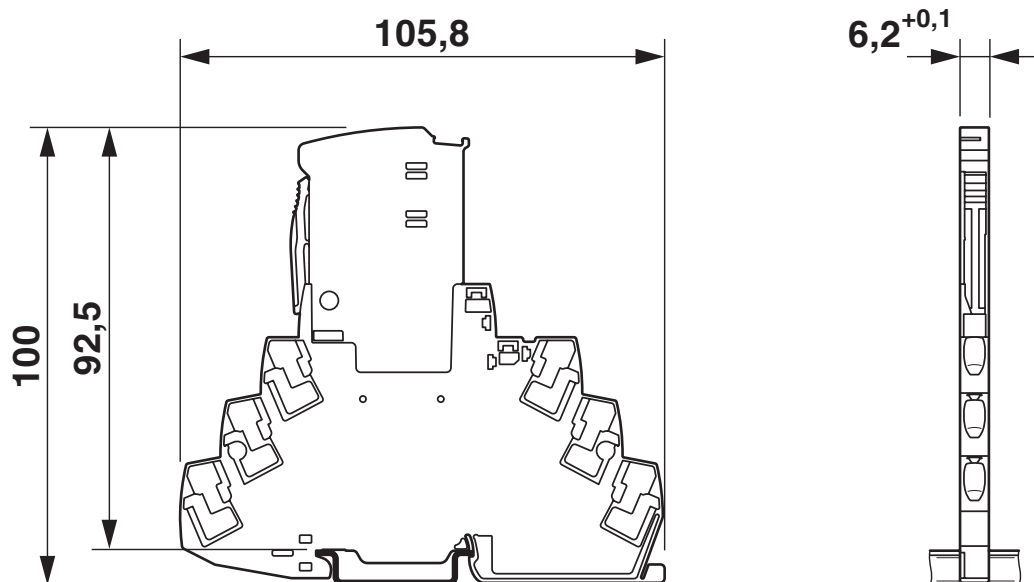
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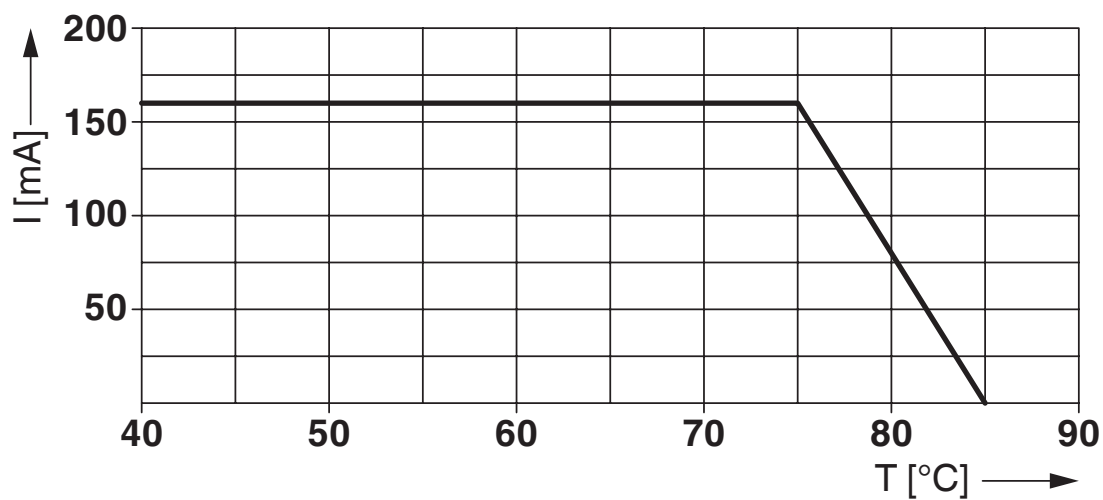
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Dimensional drawing



Diagram



Derating curve at 55.2 V DC

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Approvals

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CSA

Approval ID: 70136717



DNV GL

Approval ID: TAE000027G



UL Listed

Approval ID: FILE E 138168



CSAus

Approval ID: 70136717

UAE-RoHS

Approval ID: 22-06-16192

Functional Safety

Approval ID: 16-06-072 R022 V4R2

cCSAus

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Classifications

ECLASS

ECLASS-11.0	27130807
ECLASS-13.0	27171501

ETIM

ETIM 9.0	EC001625
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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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