

# TTC-6-1X2-M-24DC-PT-I - Surge protection device



2906726

<https://www.phoenixcontact.com/us/products/2906726>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



Surge protection with integrated status indicator and knife disconnection for a 2-wire floating signal circuit, e.g., 0(4) ... 20 mA current loop, Ex e approval for zone 2, HART compatible. Can be used in safety-related circuits up to SIL 3.

## 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
- Signal circuits easily interrupted for maintenance work, thanks to vertical knife disconnection

## Commercial data

Item number	2906726
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL23
Product key	CL2262
GTIN	4055626134581
Weight per piece (including packing)	47.2 g
Weight per piece (excluding packing)	47.2 g
Customs tariff number	85363010
Country of origin	DE

# TTC-6-1X2-M-24DC-PT-I - Surge protection device



2906726

<https://www.phoenixcontact.com/us/products/2906726>

## 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, one-piece
Wire pairs per module	1

### Insulation characteristics

Overvoltage category	III
Pollution degree	2

### Electrical properties

Nominal voltage $U_N$	24 V DC
-----------------------	---------

### Connection data

Connection method	Push-in connection
Conductor cross-section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section rigid	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Conductor cross-section AWG	24 ... 12

### Ex data

Maximum input current	600 mA (T4 / $\leq 30$ °C)
	500 mA (T4 / $> 30$ °C ... $\leq 50$ °C)
	300 mA (T4 / $> 50$ °C ... $\leq 70$ °C)
Maximum input voltage	30 V DC
Altitude	$\leq 2000$ m (amsl)
Ambient temperature (operation)	-40 °C ... 70 °C (T4)

### Dimensions

Dimensional drawing	
Width	6.2 mm +0.1 mm
Height	105.8 mm
Depth	83.5 mm (incl. DIN rail 7.5 mm)

### Material specifications

# TTC-6-1X2-M-24DC-PT-I - Surge protection device



2906726

<https://www.phoenixcontact.com/us/products/2906726>

Color	gray (RAL 7042)
Flammability rating according to UL 94	V-0
Insulating material	PBT
Housing material	PBT

## Mechanical properties

### Mechanical data

Open side panel	No
-----------------	----

## Protective circuit

Direction of action	Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground
Nominal voltage $U_N$	24 V DC
Maximum continuous operating voltage $U_C$	30 V DC
	21 V AC
Rated current	600 mA (40 °C)
Operating effective current $I_C$ at $U_C$	$\leq 5 \mu\text{A}$
Protective conductor current $I_{PE}$	$\leq 1 \mu\text{A}$
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (line-line)	5 kA
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (line-ground)	5 kA
Pulse discharge current $I_{imp}$ (10/350) $\mu\text{s}$ (line-line)	0.5 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-line)	$\leq 55 \text{ V}$ (C1 - 1 kV / 500 A)
	$\leq 65 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 50 \text{ V}$ (C3 - 25 A)
	$\leq 55 \text{ V}$ (C3 - 100 A)
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)
	$\leq 700 \text{ V}$ (C3 - 25 A)
	$\leq 750 \text{ V}$ (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)	$\leq 750 \text{ V}$ (C1 - 1 kV / 500 A)
	$\leq 750 \text{ V}$ (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 $\Omega$ )
Cut-off frequency $f_g$ (3 dB), sym. in 150 $\Omega$ system	typ. 940 kHz
Capacity (Core-Core)	typ. 2.2 nF
Resistance per path	1.65 $\Omega \pm 20 \%$
Surge protection fault message	optical
Max. required back-up fuse	630 mA (FF)
	C1 - 1 kV / 500 A

# TTC-6-1X2-M-24DC-PT-I - Surge protection device



2906726

<https://www.phoenixcontact.com/us/products/2906726>

Impulse durability (line-line)	C2 - 10 kV / 5 kA
	C3 - 100 A
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)	≤ 1500 ms

## Additional technical data

Max. total discharge current $I_{\text{total max}} (8/20) \mu\text{s}$	20 kA (1x - non Ex)
--	---------------------

## 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 %

## Approvals

### Conformity/Approvals

UL, USA / Canada	Class I, Div. 2, Groups A, B, C, D T4
------------------	---------------------------------------

## 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
Standards/specifications	IEC 60079-0
Note	2017
Standards/specifications	IEC 60079-7
Note	2017
Standards/specifications	EN IEC 60079-0
Note	2018
Standards/specifications	EN IEC 60079-7
Note	2015 + A1:2018

## Mounting

Mounting type	DIN rail: TH 35 - 7.5 mm
---------------	--------------------------

# TTC-6-1X2-M-24DC-PT-I - Surge protection device

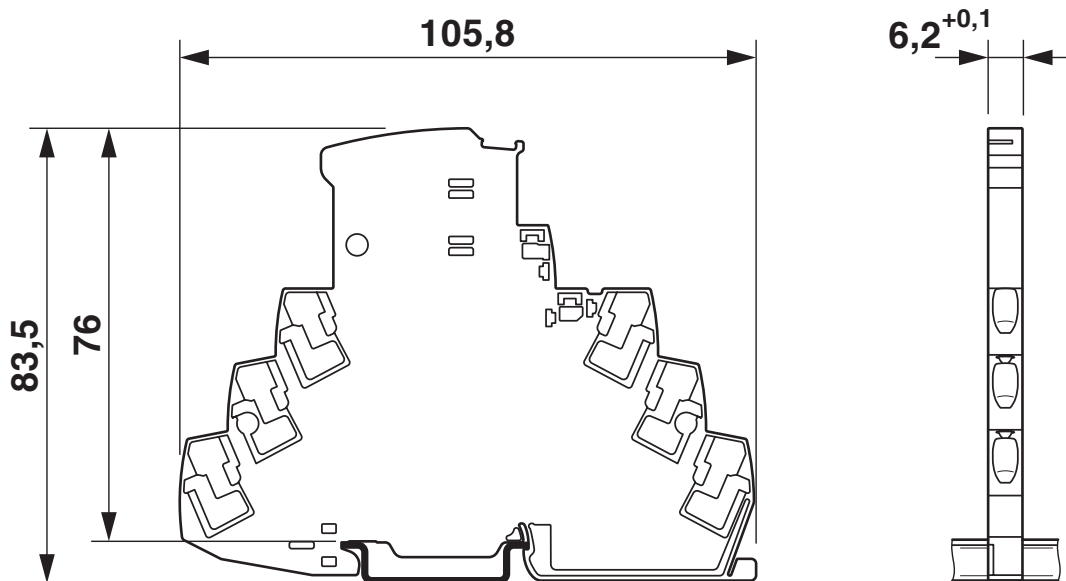


2906726

<https://www.phoenixcontact.com/us/products/2906726>

## Drawings

Dimensional drawing

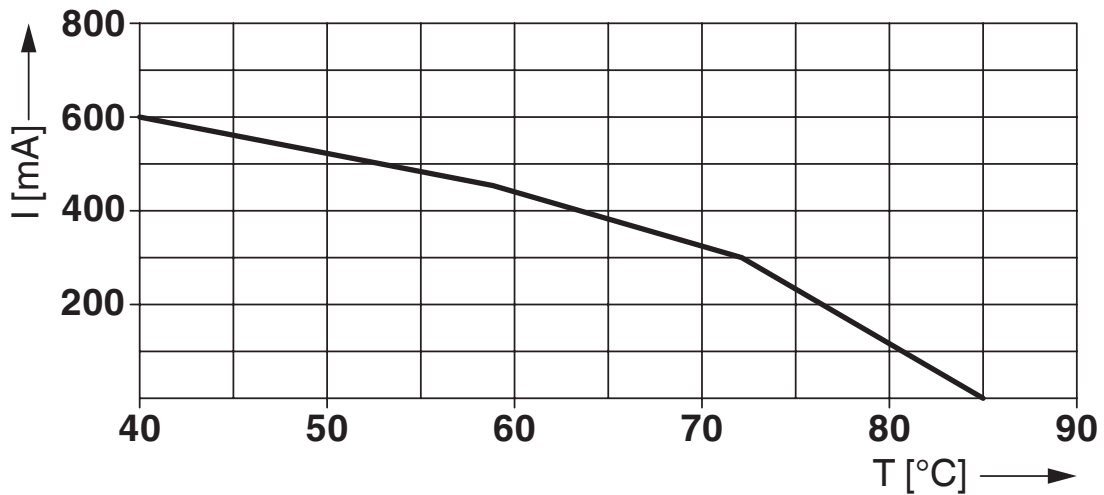


Schematic diagram

TTC-6-1X2-M-...-I									
Category	1oo1 architecture, HFT=0				1oo2 architecture, HFT=1				
	PFD <sub>AVG</sub>	PFH	Used budget of SIL 2 SIF		PFD <sub>AVG</sub>	PFH	CCF	Used budget of SIL 3 SIF	
			PFD <sub>AVG</sub>	PFH				PFD <sub>AVG</sub>	PFH
	3.04·10 <sup>-5</sup>	5.40·10 <sup>-9</sup> 1/h	0.3 %	0.5 %	1.52·10 <sup>-6</sup>	2.70·10 <sup>-10</sup> 1/h	5 %	0.2 %	0.3 %
					3.04·10 <sup>-6</sup>	5.40·10 <sup>-10</sup> 1/h	10 %	0.3 %	0.5 %
Calculation based on exida report, Phoenix Contact 16/06-072 R023 V3R1 exida Profile 1, FMEDA Analysis 2, T <sub>proof</sub> : 1 year, MT: 10 years, MTTR: 24 hours, PTC: 99% Used standards IEC/EN 61508, edition 2010 (device specific) IEC/EN 61511, edition 2016 + COR1:2016 + A1:2017 (system specific)									

## Functional safety scenarios

Diagram

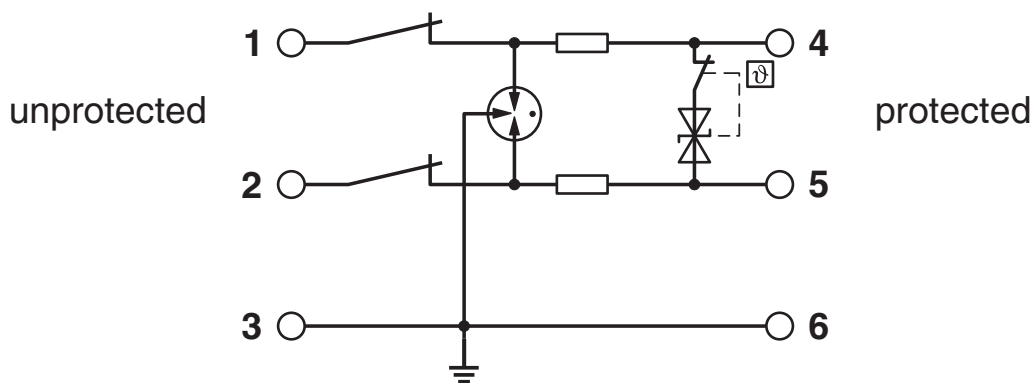


Diagram

Derating for Ex-areas (Zone 2, EX ec)

$\vartheta$ [°C]	I [mA]
$\leq 30^{\circ}\text{C}$	600 mA
$> 30^{\circ}\text{C} \dots \leq 50^{\circ}\text{C}$	500 mA
$> 50^{\circ}\text{C} \dots \leq 70^{\circ}\text{C}$	300 mA

Circuit diagram



# TTC-6-1X2-M-24DC-PT-I - Surge protection device



2906726

<https://www.phoenixcontact.com/us/products/2906726>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2906726>



**CSA**

Approval ID: 70136717



**DNV GL**

Approval ID: TAE000027G



**UL Listed**

Approval ID: FILE E 138168



**CSAus**

Approval ID: 70136717

**UAE-RoHS**

Approval ID: 22-06-16191

**Functional Safety**

Approval ID: 16-06-072 R023 V3R1



**IECEX**

Approval ID: IECEX BVS 21.0057X



**ATEX**

Approval ID: BVS 21 ATEX E 052 X



**UKCA-EX**

Approval ID: DEKRA 23UKEX7003X



**cULus Listed**

Approval ID: File E 333250



**CCC**

Approval ID: 2022122304116080

# TTC-6-1X2-M-24DC-PT-I - Surge protection device



2906726

<https://www.phoenixcontact.com/us/products/2906726>



**NEPSI-EX**

Approval ID: HT25-037

# TTC-6-1X2-M-24DC-PT-I - Surge protection device



2906726

<https://www.phoenixcontact.com/us/products/2906726>

## Classifications

### ECLASS

ECLASS-13.0	27171501
ECLASS-15.0	27171501

### ETIM

ETIM 10.0	EC001466
-----------	----------

### UNSPSC

UNSPSC 21.0	39121600
-------------	----------

# TTC-6-1X2-M-24DC-PT-I - Surge protection device



2906726

<https://www.phoenixcontact.com/us/products/2906726>

## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

### China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

### EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
	Lead(CAS: 7439-92-1)
SCIP	61e1084f-6320-4b83-8303-2702f38d9dbf

### EF3.1 Climate Change

CO2e kg	1.102 kg CO2e
---------	---------------

Phoenix Contact 2026 © - all rights reserved  
<https://www.phoenixcontact.com>

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