

# TTC-6-3-HF-F-12DC-PT - Surge protection device



1109712

<https://www.phoenixcontact.com/us/products/1109712>

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Surge protection for three signal wires with common reference potential. For HF applications and telecommunications interfaces without supply voltage (up to 90 Mbps).



## Commercial data

Item number	1109712
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL23
Product key	CL2262
GTIN	4063151022624
Weight per piece (including packing)	36.1 g
Weight per piece (excluding packing)	35.9 g
Customs tariff number	85363010
Country of origin	CN

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## Technical data

### Product properties

Product type	Surge protection for information technology
Product family	TERMITRAB complete
IEC test classification	C1
	C2
	C3
	D1
Type	DIN rail module, one-piece

### Insulation characteristics

Overvoltage category	III
Pollution degree	2

### Electrical properties

Nominal voltage $U_N$	12 V DC
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### 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

### 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	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
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## Protective circuit

Direction of action	Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground
Nominal voltage $U_N$	12 V DC
Maximum continuous operating voltage $U_C$	15 V DC
Rated current	600 mA (40 °C)
Operating effective current $I_C$ at $U_C$	$\leq 100 \mu\text{A}$
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-earth)	0.5 kA
Total discharge current $I_{Total}$ (8/20) $\mu\text{s}$	10 kA
Voltage protection level $U_p$ (line-line)	$\leq 45 \text{ V}$ (C1 - 1 kV / 500 A)
	$\leq 85 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 30 \text{ V}$ (C3 - 100 A)
Voltage protection level $U_p$ (line-earth)	$\leq 800 \text{ V}$ (C1 - 1 kV / 500 A)
	$\leq 800 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 800 \text{ V}$ (C3 - 100 A)
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 ( $\leq 12 \text{ MHz} / 150 \Omega$ )
Input attenuation aE, asym.	typ. 0.3 dB ( $\leq 20 \text{ MHz} / 150 \Omega$ )
Cut-off frequency $f_g$ (3 dB), sym. in 150 $\Omega$ system	typ. 60 MHz
Cut-off frequency $f_g$ (3 dB), asym. (PE) in 150 $\Omega$ system	typ. 60 MHz
Capacity (Core-Core)	typ. 32 pF
Capacity (Core-Earth)	typ. 32 pF
Resistance per path	1.65 $\Omega \pm 20 \%$
Surge protection fault message	none
Max. required back-up fuse	630 mA (FF)
Impulse durability (line-line)	C1 - 1 kV / 500 A
	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)	$\leq 30 \text{ ms}$
Pulse reset time (line-earth)	$\leq 30 \text{ ms}$

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 85 °C

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Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 6000 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

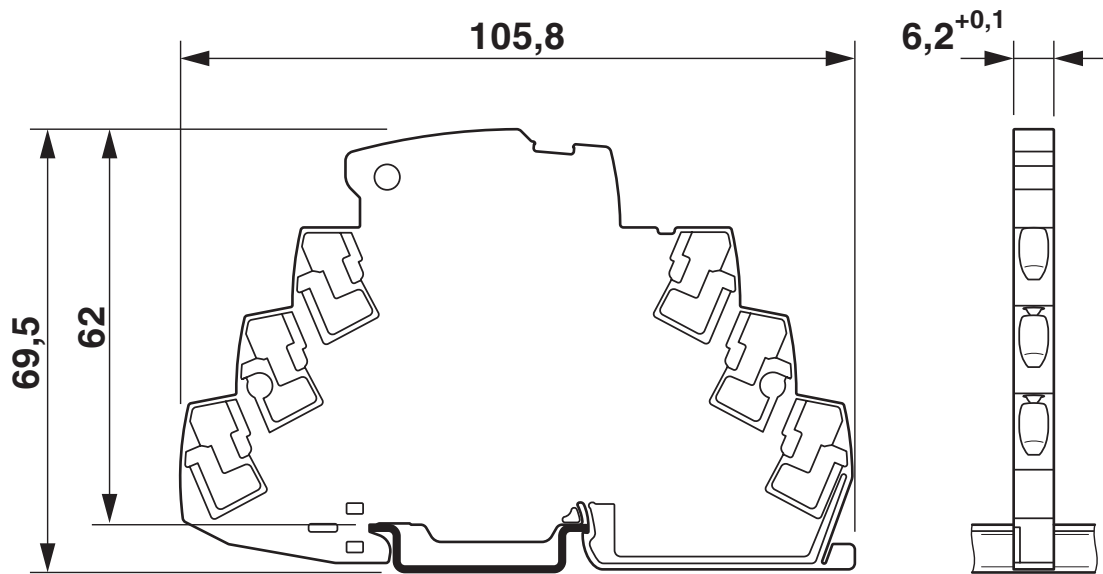
Standards/specifications	EN 61643-21
Note	2001 + A1:2009 + A2:2013

## Mounting

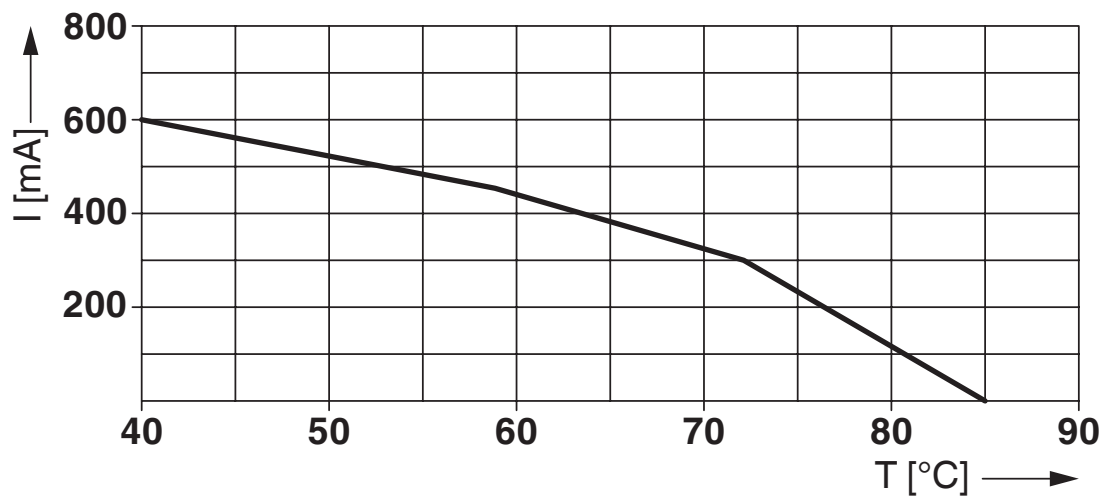
Mounting type	DIN rail: TH 35 - 7.5 mm
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Drawings

Dimensional drawing



Diagram

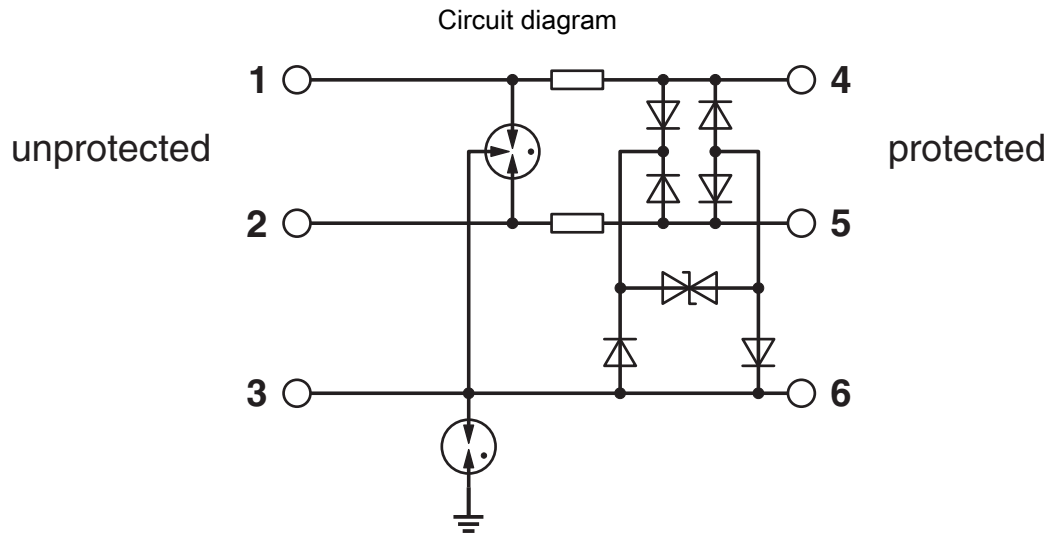


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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1109712>



**DNV GL**

Approval ID: TAE000027G



**UL Listed**

Approval ID: FILE E 138168

**UAE-RoHS**

Approval ID: 22-06-16191



**UL Listed**

Approval ID: FILE E 138168

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## Classifications

### ECLASS

ECLASS-13.0	27171501
ECLASS-15.0	27171501

### ETIM

ETIM 10.0	EC001466
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### UNSPSC

UNSPSC 21.0	39121600
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## 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	093f240f-7e3c-4476-9b7a-97006b9c4333

### EF3.1 Climate Change

CO2e kg	1.318 kg CO2e
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