

# Surge protection device - TTC-6-3-HF-F-M-EX-24DC-UT-I - 2906823

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's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)



Surge protection, consisting of protective plug and base element, with integrated status indicator and knife disconnection for a 3-wire Ex i signal circuit with common reference potential. For HF applications. Indirect grounding via gas-filled surge arrester, HART-compatible. Can be used inside of a fieldbus-system according to the FISCO concept.

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

RoHS



600 mA

24 V



IP20

IEC

IEC


2,5 mm<sup>2</sup>



SIL  
evaluated  
IEC 61508



## Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 135854
GTIN	4055626135854
Weight per Piece (excluding packing)	59.400 g
Custom tariff number	85363010
Country of origin	Germany
Note	Made to Order (non-returnable)

## Technical data

### Dimensions

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

### Ambient conditions

Ambient temperature (operation)	-40 °C ... 85 °C
---------------------------------	------------------

# Surge protection device - TTC-6-3-HF-F-M-EX-24DC-UT-I - 2906823

## Technical data

### Ambient conditions

Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m (amsl (above mean sea level))
Degree of protection	IP20

### General

Housing material	PBT
Flammability rating according to UL 94	V-0
Color	sky blue RAL 5015
Mounting type	DIN rail: TH 35 - 7.5 mm
Type	DIN rail module, one-piece
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 $U_N$	24 V DC
Maximum continuous voltage $U_C$	30 V DC
Rated current	600 mA (40 °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-line)	5 kA
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-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)	≤ 150 V (C1 - 1 kV/500 A)
	≤ 275 V (C2 - 10 kV / 5 kA)
	≤ 55 V (C3 - 100 A)
Voltage protection level $U_p$ (line-earth)	≤ 750 V (C1 - 1 kV/500 A)
	≤ 750 V (C2 - 10 kV / 5 kA)
	≤ 1.2 kV (C3 - 100 A)
Voltage protection level $U_p$ (line-signalground)	≤ 80 V (C1 - 1 kV/500 A)
	≤ 125 V (C2 - 10 kV / 5 kA)
	≤ 55 V (C3 - 100 A)
Voltage protection level $U_p$ static (line-line)	≤ 75 V (C1 - 1 kV/500 A)
	≤ 120 V (C2 - 10 kV / 5 kA)

# Surge protection device - TTC-6-3-HF-F-M-EX-24DC-UT-I - 2906823

## Technical data

### Protective circuit

Voltage protection level $U_p$ static (line-earth)	$\leq 750$ V (C1 - 1 kV/500 A)
	$\leq 750$ V (C2 - 10 kV / 5 kA)
Voltage protection level $U_p$ static (line-signalground)	$\leq 75$ V (C1 - 1 kV/500 A)
	$\leq 120$ V (C2 - 10 kV / 5 kA)
Response time $t_A$ (line-line)	$\leq 1$ ns
Response time $t_A$ (line-signalground)	$\leq 1$ ns
Response time $t_A$ (line-earth)	$\leq 100$ ns
Input attenuation aE, sym.	typ. 0.3 dB ( $\leq 8.7$ MHz / 150 $\Omega$ )
Input attenuation aE, asym.	typ. 0.3 dB ( $\leq 10.5$ MHz / 150 $\Omega$ )
Cut-off frequency $f_g$ (3 dB), sym. in 150 Ohm system	typ. 60 MHz
Cut-off frequency $f_g$ (3 dB), asym. (GND) in 150 Ohm system	typ. 60 MHz
Capacity (line-line)	typ. 32 pF
Capacity (line-signalground)	typ. 32 pF
Resistance per path	1.65 $\Omega \pm 20$ %
Surge protection fault message	optical
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
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)	$\leq 600$ ms
Pulse reset time (line-earth)	$\leq 30$ ms
Pulse reset time (line-signalground)	$\leq 600$ ms

### Connection data

Connection method	Screw connection
Screw thread	M3
Tightening torque	0.5 Nm ... 0.6 Nm
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

# Surge protection device - TTC-6-3-HF-F-M-EX-24DC-UT-I - 2906823

## Technical data

### Standards and Regulations

Standards/specifications	EN 60079-0 2012 + A11:2013
	EN 60079-11 2012
	EN 61643-21 2001 + A1:2009 + A2:2013
	IEC 60079-0 2011 (modified) + corrigendum 2012 + corrigendum 2013
	IEC 60079-11 2008
	IEC 61643-21 2000 + corrigendum 2001 + A1:2008, modified + A2:2012

### General

Maximum inner capacitance $C_i$	negligible
Max. internal inductance $L_i$	negligible
Max. input current $I_i$	400 mA ( $T4 / \leq 50 \text{ }^\circ\text{C}$ )
	350 mA ( $T6 / \leq 35 \text{ }^\circ\text{C}$ )
Max. input voltage $U_i$	30 V DC
Insulation voltage to ground	> 180 V DC
Ambient temperature (operation)	-40 °C ... 35 °C ( $T6 / 85 \text{ }^\circ\text{C}$ )
	-40 °C ... 50 °C ( $T4 / 135 \text{ }^\circ\text{C}$ )

### Conformity / approvals

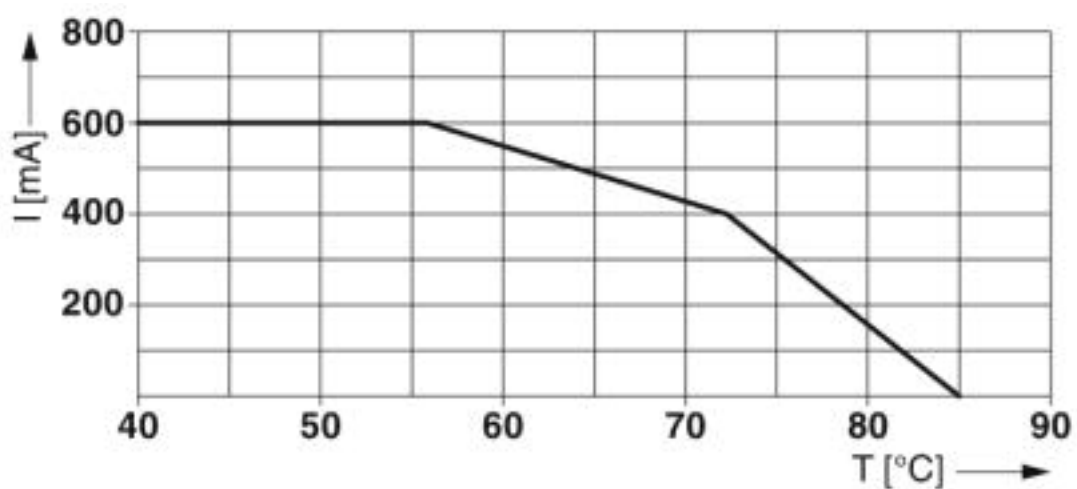
UL, USA/Canada	Class I, Div. 2, Groups A, B, C, D T4
----------------	---------------------------------------

### 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"

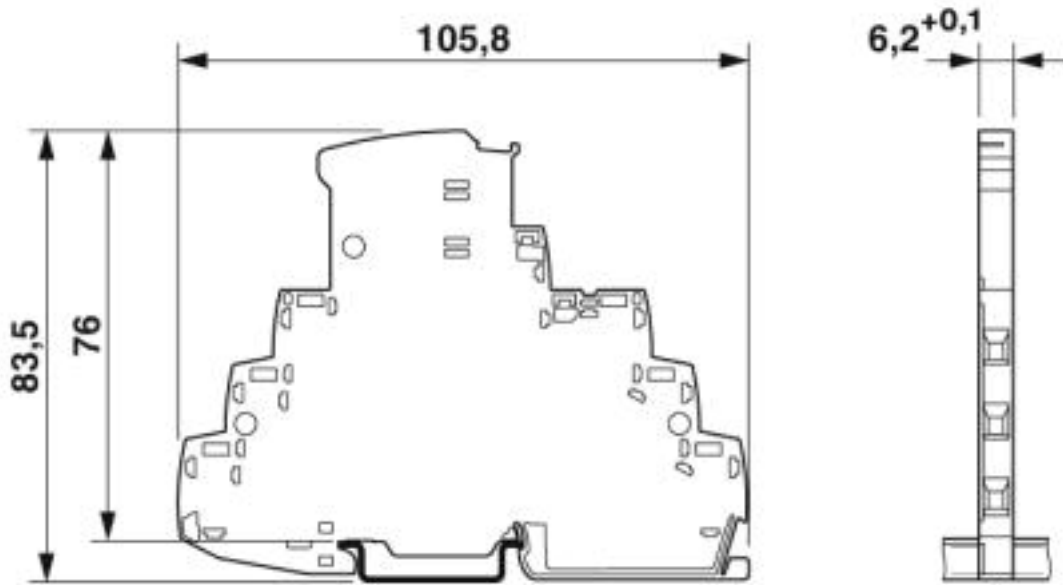
## Drawings

Diagram

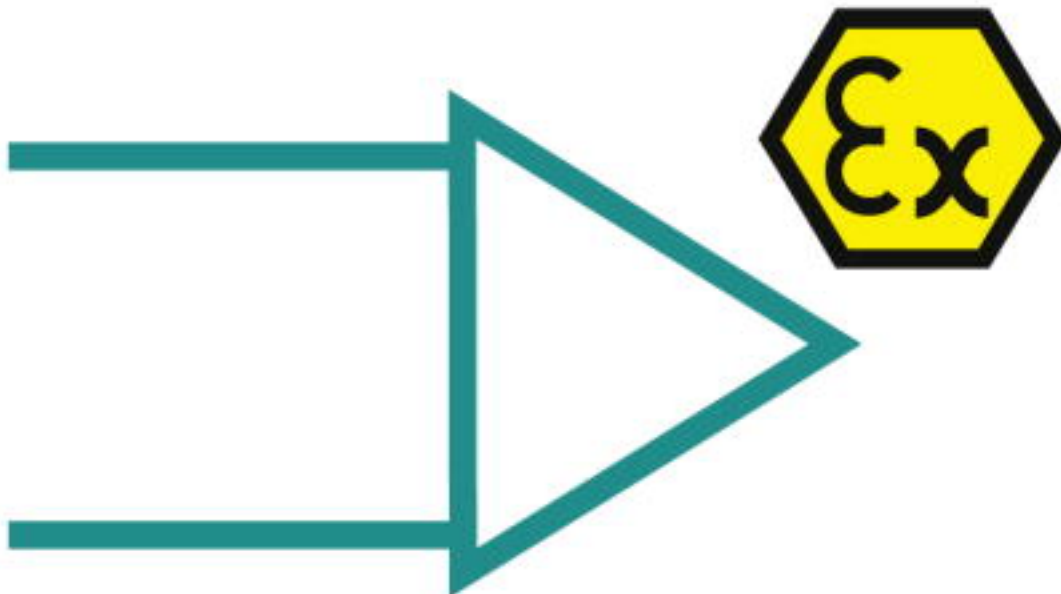


# Surge protection device - TTC-6-3-HF-F-M-EX-24DC-UT-I - 2906823

Dimensional drawing

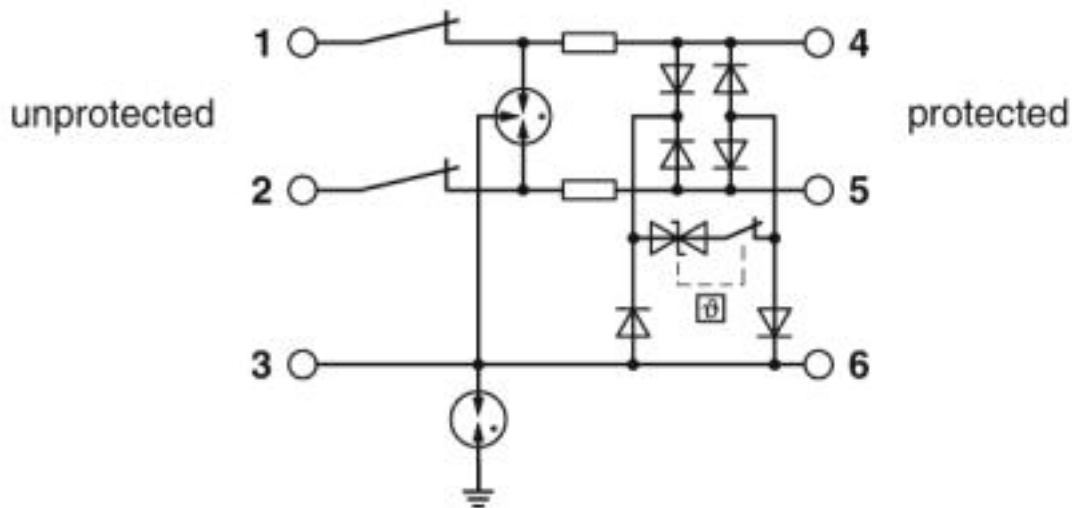


Pictogram



# Surge protection device - TTC-6-3-HF-F-M-EX-24DC-UT-I - 2906823

Circuit diagram



## 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 2.0	EC000943
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

# Surge protection device - TTC-6-3-HF-F-M-EX-24DC-UT-I - 2906823

## Classifications

### UNSPSC

UNSPSC 20.0	39121620
UNSPSC 21.0	39121620

## Approvals

### Approvals

---

### Approvals

DNV GL / CSA / UL Listed / CSAus / cCSAus

---

### Ex Approvals

IECEx / ATEX / UL Listed / cUL Listed / cULus Listed

---

## 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

## Surge protection device - TTC-6-3-HF-F-M-EX-24DC-UT-I - 2906823

### Accessories

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

---

### 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



## Surge protection device - TTC-6-3-HF-F-M-EX-24DC-UT-I - 2906823

### Accessories

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

Remote signaling set - TTC-6-FMRS-UT - 2907810



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

Separating plate - TTC-EX-PP - 1011977



Partition plate for NS-35/7,5 DIN rails to ensure a clearance of 50 mm between the remote signaling module and surge protection in TTC-EX systems.

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

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