# Surge protection device - TTC-6-3-HF-F-M-EX-12DC-UT-I - 2906822

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Surge protection 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.

## Why buy this product

- 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


## Key Commercial Data

| | |
|---|---|
| Packing unit | 1 |
| GTIN | 4 055626 235097 |
| GTIN | 4055626235097 |
| Custom tariff number | 85363010 |

## Technical data

### Dimensions

| | |
|---|---|
| Height | 105.8 mm |
| Width | 6.2 mm (+0.1 mm) |
| Depth | 83.5 mm |

### Ambient conditions

# Surge protection device - TTC-6-3-HF-F-M-EX-12DC-UT-I - 2906822

## Technical data

### Ambient conditions

| | |
|---|---|
| Ambient temperature (operation) | -40 °C ... 85 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| 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: 35 mm |
| Design | Rail-mountable 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 $U_N$ | 12 V DC |
| Maximum continuous voltage $U_C$ | 15 V DC |
| Rated current | 600 mA (40 °C) |
| Operating effective current $I_C$ at $U_C$ | ≤ 100 µA |
| Residual current $I_{PE}$ | ≤ 1 µA |
| Nominal discharge current $I_n$ (8/20) µs (Core-Core) | 5 kA |
| Nominal discharge current $I_n$ (8/20) µs (core-earth) | 5 kA |
| Nominal discharge current $I_n$ (8/20) µs (core-GND) | 5 kA |
| Pulse discharge current $I_{imp}$ (10/350) µs (core-core) | 0.5 kA |
| Pulse discharge current $I_{imp}$ (10/350) µs (core-ground) | 0.5 kA |
| Pulse discharge current $I_{imp}$ (10/350) µs (core-GND) | 0.5 kA |
| Total discharge current $I_{total}$ (8/20) µs | 10 kA |
| Voltage protection level $U_p$ (core-core) | ≤ 145 V (C1 - 1 kV/500 A) |
| | ≤ 120 V (C2 - 10 kV / 5 kA) |
| | ≤ 30 V (C3 - 100 A) |
| Voltage protection level $U_p$ (core-ground) | ≤ 750 V (C1 - 1 kV/500 A) |
| | ≤ 750 V (C2 - 10 kV / 5 kA) |
| | ≤ 1.2 kV (C3 - 100 A) |
| Voltage protection level $U_p$ (core-GND) | ≤ 80 V (C1 - 1 kV/500 A) |
| | ≤ 80 V (C2 - 10 kV / 5 kA) |

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## Technical data

### Protective circuit

| | |
|---|---|
| | ≤ 30 V (C3 - 100 A) |
| Voltage protection level $U_p$ static (core-core) | ≤ 40 V (C1 - 1 kV/500 A) |
| | ≤ 95 V (C2 - 10 kV / 5 kA) |
| Voltage protection level $U_p$ static (core-ground) | ≤ 750 V (C1 - 1 kV/500 A) |
| | ≤ 750 V (C2 - 10 kV / 5 kA) |
| Voltage protection level $U_p$ static (core-GND) | ≤ 40 V (C1 - 1 kV/500 A) |
| | ≤ 95 V (C2 - 10 kV / 5 kA) |
| Response time tA (core-core) | ≤ 1 ns |
| Response time tA (core-earth) | ≤ 1 ns |
| | ≤ 100 ns |
| Input attenuation aE, sym. | typ. 0.3 dB (≤ 8.7 MHz / 150 Ω) |
| Input attenuation aE, asym. | typ. 0.3 dB (≤ 10.5 MHz / 150 Ω) |
| Cut-off frequency fg (3 dB), sym. in 150 Ohm system | typ. 60 MHz |
| Cut-off frequency fg (3 dB), asym. (GND) in 150 Ohm system | typ. 60 MHz |
| Capacity (core-core) | typ. 32 pF |
| Capacity (Core-GND) | typ. 32 pF |
| Resistance in series | 1.65 Ω ±20 % |
| Surge protection fault message | optical |
| Max. required back-up fuse | 630 mA (FF) |
| Impulse durability (conductor-conductor) | C1 - 1 kV/500 A |
| | C2 - 10 kV/5 kA |
| | C3 - 100 A |
| Impulse durability (conductor-ground) | C1 - 1 kV/500 A |
| | C2 - 10 kV/5 kA |
| | C3 - 100 A |
| | D1 - 500 A |
| Impulse durability (conductor-GND) | C1 - 1 kV/500 A |
| | C2 - 10 kV/5 kA |
| | C3 - 100 A |
| | D1 - 500 A |
| Pulse reset time (conductor-conductor) | ≤ 30 ms |
| Pulse reset time (conductor-ground) | ≤ 30 ms |
| Pulse reset time (conductor-GND) | ≤ 30 ms |

### Connection data

| | |
|---|---|
| Connection method | Screw connection |
| Connection method IN | Screw terminal blocks |
| Connection method OUT | Screw terminal blocks |

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## Technical data

### Connection data

| | |
|---|---|
| Screw thread | M3 |
| Tightening torque | 0.5 Nm ... 0.6 Nm |
| Stripping length | 8 mm |
| Conductor cross section flexible | 0.2 mm² ... 2.5 mm² |
| Conductor cross section solid | 0.2 mm² ... 4 mm² |
| Conductor cross section AWG | 24 ... 12 |

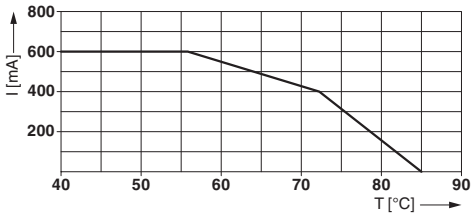
### Standards and Regulations

| | |
|---|---|
| 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 |

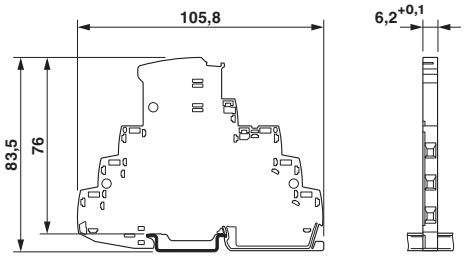
## Drawings

Pictogram

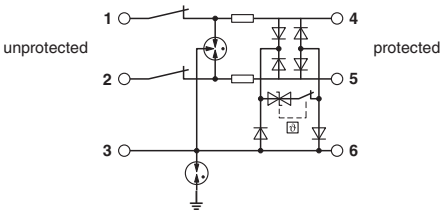
Diagram




Dimensional drawing




Circuit diagram




## Classifications

### eCl@ss

| | |
|---|---|
| eCl@ss 4.0 | 27140201 |
| eCl@ss 4.1 | 27130801 |

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## Classifications

### eCl@ss

| | |
|---|---|
| eCl@ss 5.0 | 27130801 |
| eCl@ss 5.1 | 27130801 |
| eCl@ss 6.0 | 27130807 |
| 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 |

### UNSPSC

| | |
|---|---|
| UNSPSC 6.01 | 30212010 |
| UNSPSC 7.0901 | 39121610 |
| UNSPSC 11 | 39121610 |
| UNSPSC 12.01 | 39121610 |
| UNSPSC 13.2 | 39121620 |

## Approvals

### Approvals

Approvals

UL Listed

Ex Approvals

IECEx / ATEX

### Approval details

| | | | |
|---|---|---|---|
| UL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 138168 |

# Surge protection device - TTC-6-3-HF-F-M-EX-12DC-UT-I - 2906822

## Accessories

### 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: 5.15 x 6.15 mm

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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: 5.15 x 6.15 mm

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### 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

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### Terminal marking

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

Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, Mounting type: Snap into flat marker groove, for terminal block width: 6.2 mm, Lettering field: 5.15 x 6.15 mm

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## Accessories

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

Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, Mounting type: Snap into flat marker groove, for terminal block width: 6.2 mm, Lettering field: 5.15 x 6.15 mm

## Additional products

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

Module for floating remote signaling of neighboring surge protective devices from the TERMITRAB complete product range.

Shield connection - SSA 3-6 - 2839295

shield fast connections for conductor diameter 3 - 6 mm. Potential connection cable: 200 mm, black

Shield connection - SSA 5-10 - 2839512

Shield fast connection for conductor diameters 5 - 10 mm. Potential connection cable: 200 mm, black