

# Surge protection device - TT-ST-M-2-PE-24DC - 2858904

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TERMITRAB, spring-cage modular terminal block with integrated surge protection and disconnect knives, for assembly on NS 35/7.5, voltage  $U_N$  24 V DC, terminal width: 6.2 mm, cover width: 2.2 mm

## Your advantages

- Disconnection of signal circuits by disconnect knife
- Multi-stage modular terminal blocks with spring-cage connection



## Key Commercial Data

Packing unit	10 pc
GTIN	 4 017918 938024
GTIN	4017918938024

## Technical data

### Dimensions

Height	100 mm
Width	6.2 mm
Depth	65.1 mm (incl. DIN rail 7.5 mm)

### Ambient conditions

Ambient temperature (operation)	-40 °C ... 85 °C
Altitude	max. 2000 m
Degree of protection	IP20

### General

Housing material	PA 6.6
Flammability rating according to UL 94	V-2
Color	black
Standards for clearances and creepage distances	EN 60664-1
	IEC 60664-1

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## Technical data

### General

Overvoltage category	III
Degree of pollution	2
Mounting type	DIN rail: 35 mm
Type	Double-level terminal block with disconnect knife
Number of positions	2
Direction of action	Line-Line & Line-Earth Ground

### Protective circuit

IEC test classification	C1
	C2
	C3
	D1
VDE requirement class	C1
	C2
	C3
	D1
Nominal voltage $U_N$	24 V DC
Maximum continuous voltage $U_C$	30 V DC
	21 V AC
Rated current	350 mA (45 °C)
Operating effective current $I_C$ at $U_C$	$\leq 10 \mu A$
Standby power consumption $P_C$	$\leq 1.78 VA$
Residual current $I_{PE}$	$\leq 2 \mu A$
Nominal discharge current $I_n$ (8/20) $\mu s$ (line-line)	5 kA
Nominal discharge current $I_n$ (8/20) $\mu s$ (line-earth)	5 kA
Pulse discharge current $I_{imp}$ (10/350) $\mu s$	1 kA (per path)
Total discharge current $I_{total}$ (8/20) $\mu s$	10 kA
Total discharge current $I_{total}$ (10/350) $\mu s$	2 kA
Max. discharge current $I_{max}$ (8/20) $\mu s$ maximum (line-line)	5 kA
Max. discharge current $I_{max}$ (8/20) $\mu s$ maximum (line-earth)	5 kA
Nominal pulse current $I_{an}$ (10/1000) $\mu s$ (line-line)	100 A
Nominal pulse current $I_{an}$ (10/1000) $\mu s$ (line-earth)	200 A (in total)
Output voltage limitation at 1 kV/ $\mu s$ (line-line) spike	$\leq 40 V$
Output voltage limitation at 1 kV/ $\mu s$ (line-earth) spike	$\leq 600 V$
Output voltage limitation at 1 kV/ $\mu s$ (line-line) static	$\leq 40 V$
Output voltage limitation at 1 kV/ $\mu s$ (line-earth) static	$\leq 600 V$
Residual voltage at $I_n$ (line-line)	$\leq 40 V$
Voltage protection level $U_p$ (line-line)	$\leq 60 V$ (C2 - 10 kV / 5 kA)
	$\leq 40 V$ (stat.)
Voltage protection level $U_p$ (line-earth)	$\leq 600 V$ (C2 - 10 kV / 5 kA)

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## Technical data

### Protective circuit

Response time $t_A$ (line-line)	$\leq 1$ ns
Response time $t_A$ (line-earth)	$\leq 100$ ns
Input attenuation aE, sym.	typ. 1 dB (400 kHz/50 $\Omega$ )
	typ. 0.4 dB (150 kHz / 150 $\Omega$ )
	typ. 0.1 dB (30 kHz/600 $\Omega$ )
Cut-off frequency $f_g$ (3 dB), sym. in 50 Ohm system	typ. 3 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 150 Ohm system	typ. 1 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 600 Ohm system	typ. 250 kHz
Capacity (line-line)	4 nF
Capacity (line-earth)	2 pF
Resistance per path	6.6 $\Omega \pm 10$ %
Surge protection fault message	none
Max. required back-up fuse	370 mA
Impulse durability (line-line)	C2 - 10 kV / 5 kA
	C3 - 100 A
Impulse durability (line-earth)	C2 - 10 kV / 5 kA
	D1 - 1 kA
	C3 - 100 A

### Connection data

Connection method	Spring-cage connection
Connection method IN	Spring-cage
Connection method OUT	Spring-cage
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 ... 14

### Standards and Regulations

Standards/specifications	IEC 61643-21/A1 2008
	EN 61643-21/A1 2009

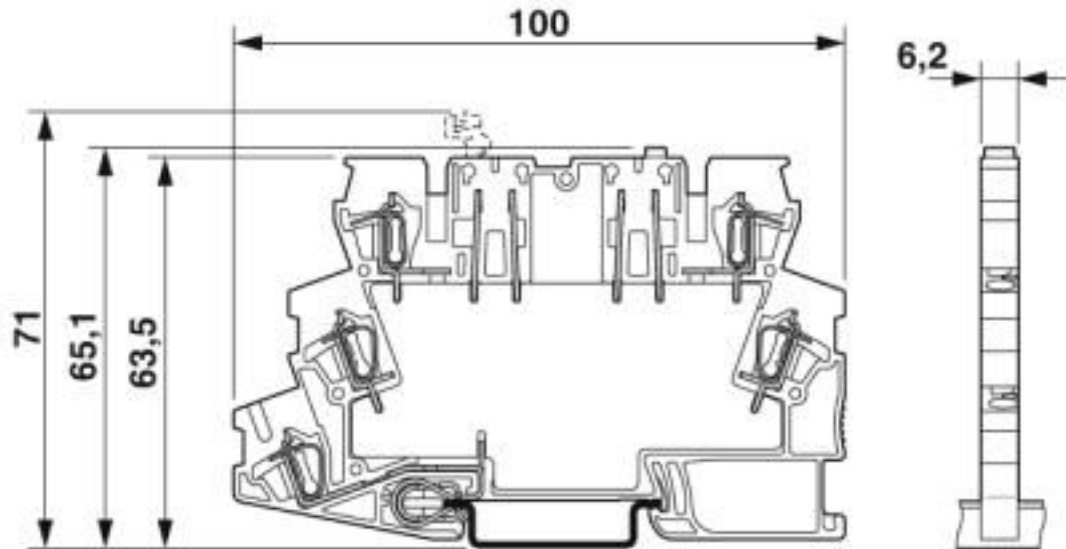
### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

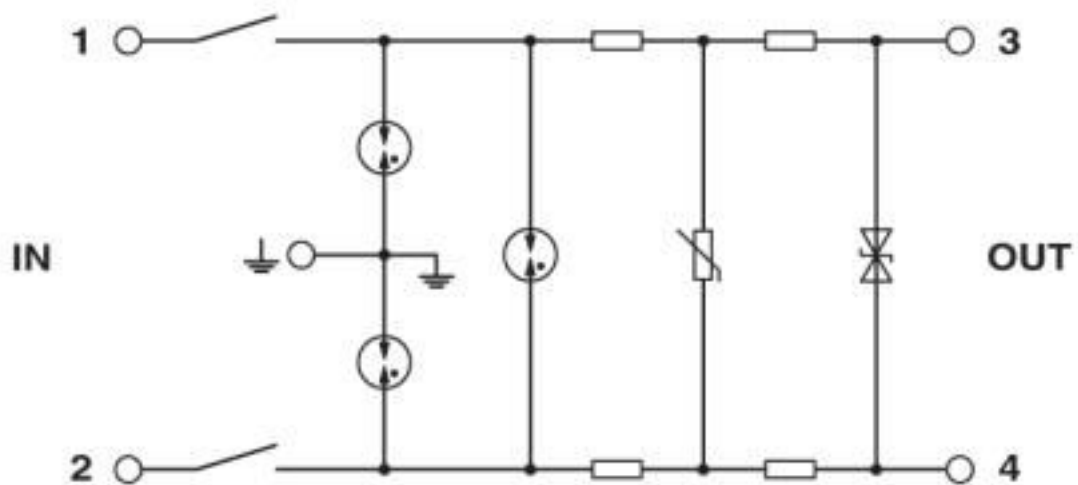
## Drawings

# Surge protection device - TT-ST-M-2-PE-24DC - 2858904

Dimensional drawing



Circuit diagram



## Classifications

eCl@ss

eCl@ss 10.0.1	27130807
eCl@ss 4.0	27130800
eCl@ss 4.1	27130800
eCl@ss 5.0	27130800
eCl@ss 5.1	27130800
eCl@ss 6.0	27130800
eCl@ss 7.0	27130807
eCl@ss 8.0	27130807
eCl@ss 9.0	27130807

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## Classifications

### 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
UNSPSC 20.0	39121620
UNSPSC 21.0	39121620

## Approvals

### Approvals

#### Approvals


DNV GL / UL Listed / EAC / EAC

#### Ex Approvals

### Approval details

DNV GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	TAE00001N7
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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
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EAC		EAC-Zulassung
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## Approvals

EAC		RU C- DE.*09.B.00169
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## Accessories

### Accessories

#### End cover

End cover - TT-D-STTCO-BK - 2858894



End cover for TERMITRAB TT-ST-..., width: 2.2 mm, color: Black

#### Labeled terminal marker

Zack Marker strip, flat - ZBF 6,LGS:FORTL.ZAHLEN - 0808749



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: 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 - B-STIFT - 1051993



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 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

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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: 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

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### Additional products

End cover - TT-D-STTCO-BK - 2858894



End cover for TERMITRAB TT-ST-..., width: 2.2 mm, color: Black

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PHOENIX CONTACT GmbH & Co. KG  
Flachsmarktstr. 8  
32825 Blomberg  
Germany  
Tel. +49 5235 300  
Fax +49 5235 3 41200  
<http://www.phoenixcontact.com>