

## Surge protection device - TT-ST-2-PE-24DC - 2858878

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

### Why buy this product

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



### Key Commercial Data

Packing unit	10 STK
GTIN	 4 017918 939120
GTIN	4017918939120

### Technical data

#### Dimensions

Height	100 mm
Width	6.2 mm
Depth	63.5 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-0
Color	black
Standards for clearances and creepage distances	EN 60664-1

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## Technical data

### General

	IEC 60664-1
Overvoltage category	III
Degree of pollution	2
Mounting type	DIN rail: 35 mm
Type	Double-level terminal block
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 $P_C$	$\leq 1.94 VA$
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.)

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### Protective circuit

Voltage protection level $U_p$ (line-earth)	$\leq 600$ V (C2 - 10 kV / 5 kA)
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	3 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 150 Ohm system	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 in series	6.6 $\Omega \pm 20$ %
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

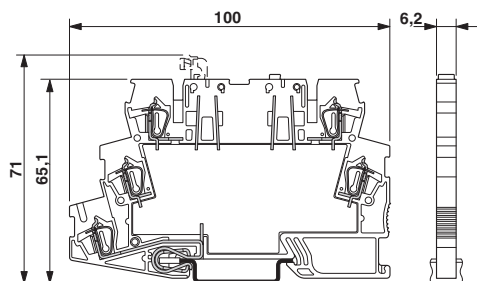
### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

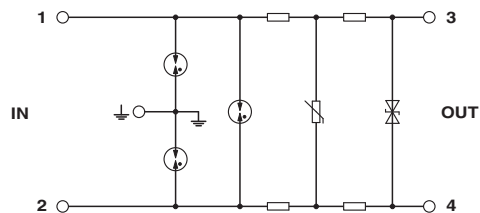
## Drawings

# Surge protection device - TT-ST-2-PE-24DC - 2858878

Dimensional drawing



Circuit diagram



## Approvals

### Approvals

Approvals

UL Listed / DNV GL

Ex Approvals

### Approval details

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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DNV GL	<a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a>	TAE00001N7
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