

## Surge protection device - TT-2-PE- 24DC - 2838186

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Modular terminal block with three-stage surge protection for a floating double conductor, separate ground connection, nominal voltage: 24 V DC, for mounting on NS 35/7.5, terminal width: 6.2 mm, terminal height: 54,6 mm

### Why buy this product

- Versions with and without disconnect knife
- Protection of a floating double wire
- Protection of two signal wires with common reference potential
- Multi-stage modular terminal blocks with screw connection technology
- Disconnection of signal circuits by disconnect knife



### Key Commercial Data

Packing unit	10 STK
GTIN	 4 017918 172855
GTIN	4017918172855
Weight per Piece (excluding packing)	26.400 g
Custom tariff number	85363010
Country of origin	Germany

### Technical data

#### Dimensions

Height	79.6 mm
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Width	6.2 mm
Depth	54.6 mm

#### Ambient conditions

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

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## Technical data

### General

Housing material	PA 6.6
Flammability rating according to UL 94	V-0
Color	black
Standards for clearances and creepage distances	IEC 60664-1
Mounting type	DIN rail: 35 mm
Design	Double-level terminal block with PE foot – separate PE connection
Number of positions	2
Direction of action	Line-Line & Line-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	300 mA (40 °C)
Operating effective current $I_C$ at $U_C$	$\leq 10 \mu A$
Standby power consumption $P_C$	$\leq 730 \text{ mVA}$
Residual current $I_{PE}$	$\leq 1 \mu A$
Nominal discharge current $I_n$ (8/20) $\mu s$ (Core-Core)	5 kA
Nominal discharge current $I_n$ (8/20) $\mu s$ (core-earth)	5 kA
Pulse discharge current $I_{imp}$ (10/350) $\mu s$	500 A
Total discharge current $I_{total}$ (8/20) $\mu s$	10 kA
Nominal pulse current $I_{an}$ (10/1000) $\mu s$ (Core-Core)	100 A
Nominal pulse current $I_{an}$ (10/1000) $\mu s$ (Core-Earth)	100 A
Output voltage limitation at 1 kV/ $\mu s$ (core-core) spike	$\leq 45 \text{ V}$
Output voltage limitation at 1 kV/ $\mu s$ (core-earth) spike	$\leq 650 \text{ V}$
Voltage protection level $U_p$ (core-core)	$\leq 70 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 55 \text{ V}$ (C1 - 1 kV/500 A)
	$\leq 45 \text{ V}$ (C3 - 10 A)
	$\leq 45 \text{ V}$ (C3 - 100 A)
Voltage protection level $U_p$ (core-ground)	$\leq 850 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 650 \text{ V}$ (C1 - 1 kV/500 A)
	$\leq 850 \text{ V}$ (C3 - 10 A)
	$\leq 900 \text{ V}$ (C3 - 100 A)
	$\leq 800 \text{ V}$ (D1 - 500 A)
Response time $t_A$ (core-core)	$\leq 1 \text{ ns}$
Response time $t_A$ (core-earth)	$\leq 100 \text{ ns}$
Input attenuation $a_E$ , sym.	typ. 0.6 dB ( $\leq 500 \text{ kHz} / 50 \Omega$ )
	typ. 0.3 dB ( $\leq 160 \text{ kHz} / 150 \Omega$ )

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## Technical data

### Protective circuit

Cut-off frequency fg (3 dB), sym. in 50 Ohm system	typ. 3 MHz
Cut-off frequency fg (3 dB), sym. in 150 Ohm system	typ. 1 MHz
Capacity (core-core)	≤ 4 nF
Resistance in series	3.7 Ω 10 %
Surge protection fault message	None
Max. required back-up fuse	315 mA (T/IEC 60127-2/3)
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
Alternating current carrying capacity (conductor-conductor)	0.25 A/1s
Alternating current carrying capacity (conductor-ground)	0.25 A/1s
Pulse reset time (conductor-conductor)	≤ 400 ms, at U <sub>c</sub> and 330 mA
Pulse reset time (conductor-ground)	≤ 400 ms, at U <sub>c</sub> and 330 mA

### Connection data

Connection method	Screw connection
Connection method IN	Screw terminal blocks
Connection method OUT	Screw terminal blocks
Screw thread	M3
Tightening torque	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

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

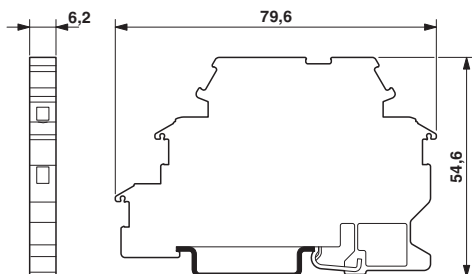
### Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

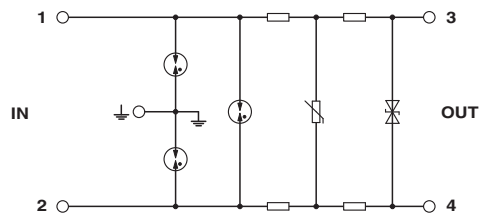
## Drawings

# Surge protection device - TT-2-PE- 24DC - 2838186

Dimensional drawing



Circuit diagram



## Approvals

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UL Listed / EAC / EAC / DNV GL

#### Ex Approvals

UL Listed / cUL Listed / cULus Listed

### 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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EAC		EAC-Zulassung
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EAC		RU C- DE.A*30.B01561
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DNV GL	<a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a>	TAE00001N7
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