

## Surge protection device - TT-2-PE-M-24DC - 2920641

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Modular terminal block with two-stage surge protection for one operated floating double conductor, disconnect knife on both signal paths, separate ground connection, nominal voltage: 24 V DC.

### 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	0
Minimum order quantity	1
Catalog page	Page 106 (TT-2011)
GTIN	 4 046356 160193
Custom tariff number	85363010
Country of origin	GERMANY

### Technical data

#### General

Housing material	PA 6.6
Inflammability class according to UL 94	V2
Color	black
Total surge current (8/20) $\mu$ s	10 kA
Total surge current (10/350) $\mu$ s	1 kA
Ambient temperature (operation)	-40 °C ... 80 °C
Mounting type	DIN rail: 35 mm
Design	Double-level terminal block with PE foot – separate PE connection
Number of positions	2
Degree of protection	IP20
Direction of action	Line-Line & Line-Earth Ground

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## Technical data

### General

Width	6.2 mm
Height	92 mm
Depth	66.45 mm

### Protective circuit

IEC category	C1
IEC category	C2
IEC category	C3
IEC category	D1
Nominal voltage UN	24 V DC
Nominal voltage UN	17 V AC
Maximum continuous operating voltage UC	30 V DC
Maximum continuous operating voltage UC	21 V AC
Maximum continuous voltage UC (wire-wire)	30 V DC
Maximum continuous voltage UC (wire-wire)	21 V AC
Nominal current IN	300 mA (40°C)
Operating effective current IC at UC	≤ 5 μA
Ground conductor current IPE	≤ 2 μA
Nominal discharge surge current In (8/20) μs (Core-Core)	5 kA
Nominal discharge surge current In (8/20) μs (Core-Earth)	5 kA
Total surge current (8/20) μs	10 kA
Max. discharge surge current I <sub>max</sub> (8/20) μs maximum (Core-Core)	5 kA
Max. discharge surge current I <sub>max</sub> (8/20) μs maximum (Core-Earth)	5 kA (per path)
Nominal pulse current I <sub>an</sub> (10/1000) μs (Core-Core)	30 A
Nominal pulse current I <sub>an</sub> (10/1000) μs (Core-Earth)	100 A (per path)
Lightning test current (10/350) μs, peak value I <sub>imp</sub>	500 A (per path)
Output voltage limitation at 1 kV/μs (Core-Core) spike	≤ 45 V
Output voltage limitation at 1 kV/μs (Core-Earth) spike	≤ 650 V
Output voltage limitation at 1 kV/μs (Core-Core) static	≤ 45 V
Output voltage limitation at 1 kV/μs (Core-Earth) static	≤ 650 V
Residual voltage at I <sub>n</sub> , (conductor-conductor)	≤ 45 V
Residual voltage with I <sub>an</sub> (10/1000) μs (conductor-conductor)	≤ 50 V
Protection level UP (Core-Core)	≤ 55 V (C2 (10 kV/5 kA))
Protection level UP (Core-Core)	≤ 53 V (C1 (500 V/250 A))
Response time t <sub>A</sub> (Core-Core)	≤ 1 ns
Response time t <sub>A</sub> (Core-Earth)	≤ 100 ns
Input attenuation a <sub>E</sub> , sym.	0.6 dB (≤ 500 kHz / 50 Ω)
Input attenuation a <sub>E</sub> , sym.	0.2 dB (≤ 200 kHz / 150 Ω)
Cut-off frequency f <sub>g</sub> (3 dB), sym. in 50 Ohm system	Typ. 6 MHz
Cut-off frequency f <sub>g</sub> (3 dB), sym. in 150 Ohm system	Typ. 2 MHz
Capacity (Core-Core)	Typ. 2.5 nF
Resistance in series	3.3 Ω 20 %

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## Technical data

### Protective circuit

Resistance in series	3.3 Ω
Max. required back-up fuse	315 mA (e.g. T in acc. with IEC 127-2/III)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Core)	C2 (10 kV/5 kA)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	C2 (10 kV/5 kA)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	D1 (500 A)
Alternating current carrying capacity in acc. with IEC 61643-21 (Core-Earth)	5 A - 1 s

### Connection data

Connection method	Screw connection
Connection type IN	Screw terminal blocks
Connection type OUT	Screw terminal blocks
Screw thread	M3
Tightening torque	0.8 Nm
Stripping length	8 mm
Conductor cross section stranded min.	0.2 mm <sup>2</sup>
Conductor cross section stranded max.	2.5 mm <sup>2</sup>
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	14

### Connection, protective circuit

Standards/regulations	IEC 61643-21
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## Classifications

### eclass

eCl@ss 4.0	27140201
eCl@ss 4.1	27130801
eCl@ss 5.0	27130801
eCl@ss 5.1	27130801
eCl@ss 6.0	27130807
eCl@ss 7.0	27130807

### etim

ETIM 2.0	EC000943
ETIM 3.0	EC000943
ETIM 4.0	EC000943

### unspsc

UNSPSC 6.01	30212010
UNSPSC 7.0901	39121610
UNSPSC 11	39121610

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## Classifications

unspsc

UNSPSC 12.01	39121610
UNSPSC 13.2	39121620

## Approvals

Approvals

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Approvals

GOST

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Ex Approvals

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Approvals submitted

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Approval details



## Accessories

Accessories

Marking

Marker pen - B-STIFT - 1051993



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

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



Zack Marker strip, flat, Strip, white, Unlabeled, Can be labeled with: Plotter, 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: Plotter, Mounting type: Snap into flat marker groove, For terminal block width: 6.2 mm, Lettering field: 5.15 x 6.15 mm

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: 5.15 x 6.15 mm

Zack marker strip - ZB 6:UNBEDRUCKT - 1051003



Zack marker strip, Strip, white, Unlabeled, Can be labeled with: Plotter, Mounting type: Snap into tall marker groove, For terminal block width: 6.2 mm, Lettering field: 6.15 x 10.5 mm

Zack marker strip - ZB 6,LGS:U-N - 1051430



Zack marker strip, Strip, white, Labeled, Can be labeled with: Plotter, Printed horizontally: U, V, W, N, GND, U, V, W, N, GND, Mounting type: Snap into tall marker groove, For terminal block width: 6.2 mm, Lettering field: 6.15 x 10.5 mm

Zack marker strip - ZB 6,LGS:FORTL.ZAHLEN - 1051016



Zack marker strip, Strip, white, Labeled, Can be labeled with: Plotter, Printed horizontally: Consecutive numbers 1 - 10, 11 - 20, etc. up to 491 - 500, Mounting type: Snap into tall marker groove, For terminal block width: 6.2 mm, Lettering field: 6.15 x 10.5 mm

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## Accessories

End cover - TT-D-2-PE-M-BK - 2920654



End cover for TERMITRAB TT-2-PE-M-... and TT-2/2-M-...

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## Additional products

End cover - TT-D-2-PE-M-BK - 2920654



End cover for TERMITRAB TT-2-PE-M-... and TT-2/2-M-...

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Shield connection - SSA 3-6 - 2839295



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

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Shield connection - SSA 5-10 - 2839512

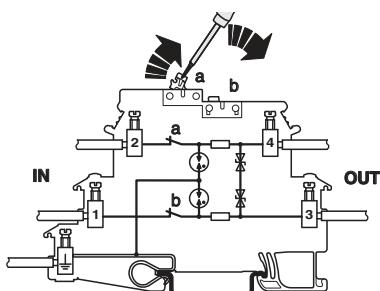


Shield fast connection for conductor diameters 5 - 10 mm. Potential connection cable: 200 mm, black

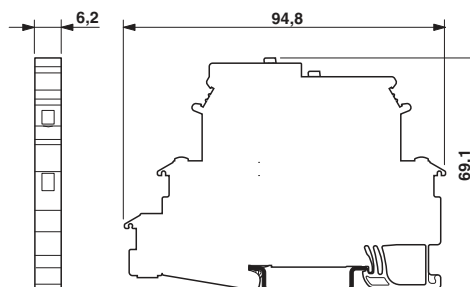
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## Drawings

Connection diagram

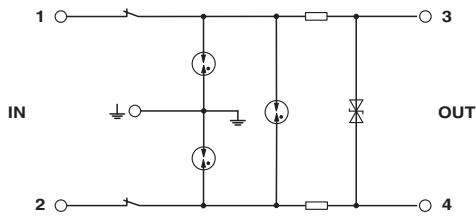


Dimensioned drawing



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Circuit diagram



Schematic diagram

