

# Surge protection device - TAE-TRAB FM-NFN-AP - 2749628

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TAE outlet box (NFN) for surface mounting with surge protection for analog and digital telecommunications interfaces (VDSL up to 50 Mbps)

## Product Features

- For surface mounting
- Three TAE6 slots
- Suitable for DSL (ADSL2+)
- Main areas of application: phone terminals, answering machines, modems, and fax machines
- For two N-coded and one F-coded termination device



## Key commercial data

<b>package_quantity</b>	1
<b>GTIN</b>	4017918108199

## Technical data

### Dimensions

<b>Height</b>	27 mm
<b>Width</b>	65 mm
<b>Depth</b>	80 mm

### Ambient conditions

<b>Ambient temperature (operation)</b>	-40 °C ... 80 °C
<b>Degree of protection</b>	IP20

### General

<b>Housing material</b>	ABS
<b>Color</b>	cream white
<b>Standards for air and creepage distances</b>	VDE 0110-1
<b>Standards for air and creepage distances</b>	IEC 60664-1
<b>For country-specific use in</b>	D
<b>Mounting type</b>	Surface/Wall mounting
<b>Design</b>	Socket for surface mounting
<b>Direction of action</b>	Line-Line & Line-Earth Ground

### Protective circuit

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## Technical data

### Protective circuit

IEC test classification	B2
IEC test classification	C1
IEC test classification	C2
IEC test classification	C3
IEC test classification	D1
VDE requirement class	B2
VDE requirement class	C1
VDE requirement class	C2
VDE requirement class	C3
VDE requirement class	D1
Nominal voltage $U_N$	60 V DC
Maximum continuous voltage $U_C$ (wire-wire)	185 V DC
Maximum continuous voltage $U_C$ (wire-ground)	185 V DC
Nominal current $I_N$	450 mA ( $\leq 40^\circ\text{C}$ )
Operating effective current $I_c$ at $U_C$	$\leq 10 \mu\text{A}$
Residual current $I_{PE}$	$\leq 6 \mu\text{A}$
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (Core-Core)	5 kA
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (Core-Earth)	5 kA
Total surge current (8/20) $\mu\text{s}$	10 kA
Total surge current (10/350) $\mu\text{s}$	5 kA
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (Core-Core)	5 kA
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (Core-Earth)	5 kA
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (Core-Core)	100 A
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (Core-Earth)	100 A
Nominal pulse current $I_{an}$ (10/700) $\mu\text{s}$ (Core-Core)	150 A
Nominal pulse current $I_{an}$ (10/700) $\mu\text{s}$ (Core-Earth)	150 A
Output voltage limitation at 1 kV/ $\mu\text{s}$ (Core-Core) spike	$\leq 250 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (Core-Earth) spike	$\leq 450 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (Core-Core) static	$\leq 250 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (Core-Earth) static	$\leq 450 \text{ V}$
Voltage protection level $U_P$ (Core-Core)	$\leq 250 \text{ V}$ (C2 - 10 kV / 5 kA)
Voltage protection level $U_P$ (Core-Core)	$\leq 250 \text{ V}$ (C1 - 1 kV/500 A)
Voltage protection level $U_P$ (Core-Core)	$\leq 250 \text{ V}$ (B2 - 4 kV/100 A)
Voltage protection level $U_P$ (Core-Earth)	$\leq 500 \text{ V}$ (C2 - 10 kV / 5 kA)
Voltage protection level $U_P$ (Core-Earth)	$\leq 450 \text{ V}$ (C1 - 1 kV/500 A)
Voltage protection level $U_P$ (Core-Earth)	$\leq 400 \text{ V}$ (B2 - 4 kV/100 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.	0.3 dB ( $\leq 1 \text{ MHz} / 150 \Omega$ )
Input attenuation $a_E$ , sym.	0.3 dB ( $\leq 400 \text{ kHz} / 600 \Omega$ )

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## Technical data

### Protective circuit

Input attenuation aE, asym.	0.3 dB ( $\leq 400$ kHz / $600 \Omega$ )
Cut-off frequency fg (3 dB), sym. in 150 Ohm system	typ. 8 MHz
Cut-off frequency fg (3 dB), sym. in 600 Ohm system	typ. 2 MHz
Capacity (Core-Core)	typ. 200 pF (f = 1 MHz / VR = 0 V)
Capacity (Core-Earth)	typ. 15 pF (f = 1 MHz / VR = 0 V)
Resistance in series	2.2 $\Omega$ 10 %
Short-circuit current self-quenching	150 mA
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-Core)	C1 (1 kV / 500 A)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Core)	B2 (4 kV / 100 A)
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)	C1 (1 kV / 500 A)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	B2 (4 kV / 100 A)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	D1 (2.5 kA)
Alternating current carrying capacity in acc. with IEC 61643-21 (Core-Earth)	5 A - 1 s

### Connection data

Connection method	Screw connection & TAE 6
Connection type IN	Screw terminal blocks
Connection type OUT	3x TAE-NFN
Connection method	Screw connection
Screw thread	M3
Tightening torque	0.5 Nm
Stripping length	6 mm
Conductor cross section stranded min.	0.14 mm <sup>2</sup>
Conductor cross section stranded max.	1.5 mm <sup>2</sup>
Conductor cross section solid min.	0.14 mm <sup>2</sup>
Conductor cross section solid max.	1.5 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	26
Conductor cross section AWG/kcmil max	16

### Connection, equipotential bonding

Connection method	Screw terminal block
Stripping length	6 mm
Tightening torque, min	0.5 Nm
Conductor cross section stranded min.	0.14 mm <sup>2</sup>
Conductor cross section stranded max.	1.5 mm <sup>2</sup>
Conductor cross section solid min.	0.14 mm <sup>2</sup>
Conductor cross section solid max.	1.5 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	26
Conductor cross section AWG/kcmil max	16

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## Technical data

### Standards and Regulations

Standards/regulations	IEC 61643-21
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### classifications

#### eCl@ss

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
eCl@ss 8.0	27130807

#### ETIM

ETIM 2.0	EC000943
ETIM 3.0	EC000943
ETIM 4.0	EC000943
ETIM 5.0	EC000943

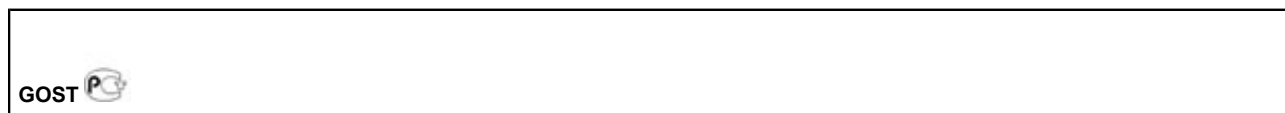
#### UNSPSC

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

### approvals

GOST /

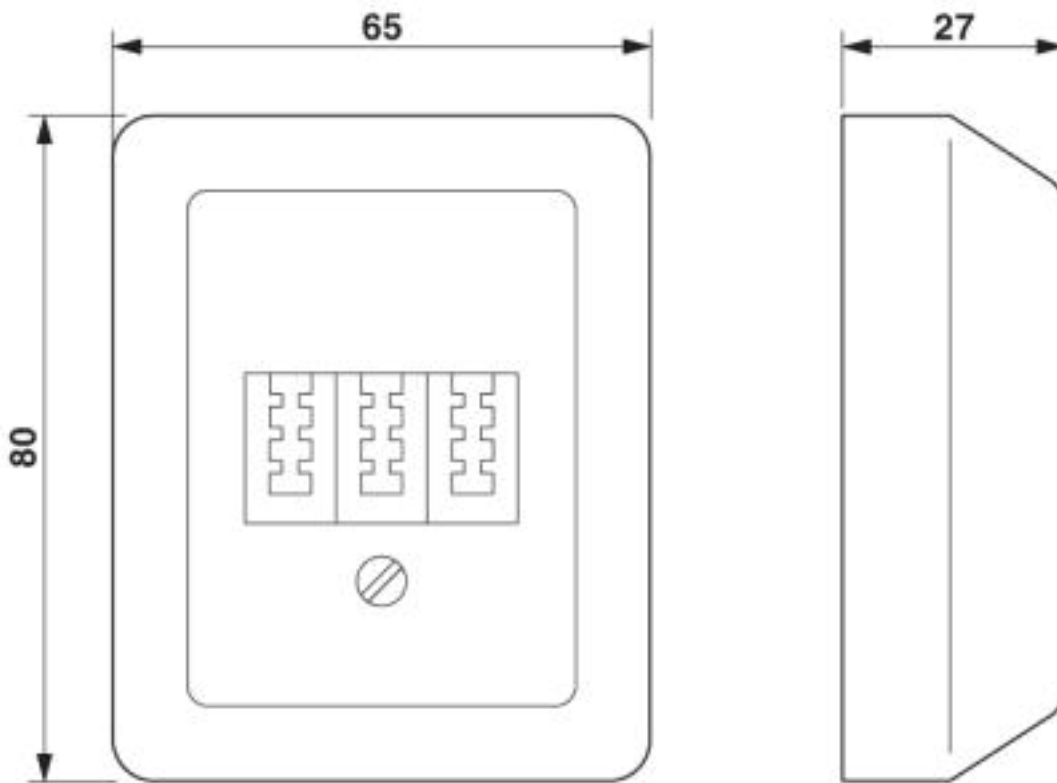
#### Approval details



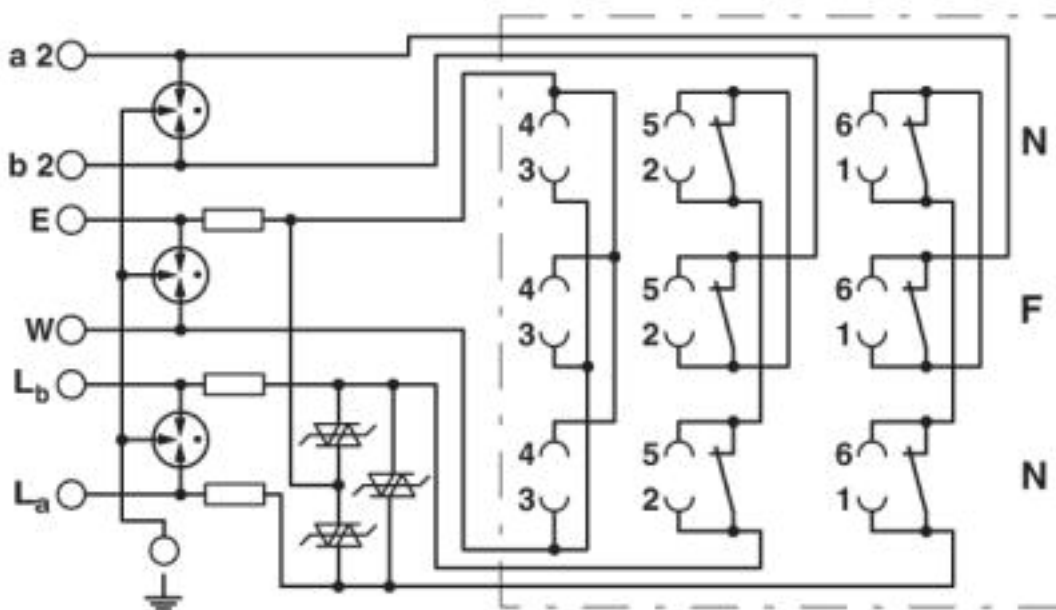
### Drawings

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Dimensioned drawing



Circuit diagram





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