

# DT-LAN-CAT6 Surge Protector

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## CAT5/6/7 Data Line Lightning Surge Protector

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- Protection for data interfaces
- Reliable transmission speeds up to 10 Gbps
- Protective adapter for eight signal paths via RJ45 connector (including PoE+)
- Suitable for category 6 high-speed data networks
- Can be installed in a control cabinet by removing the ground connection adapter



The DT-LAN-CAT6 is a protective adapter to be inserted into the data line for the protection of LAN interfaces and the RJ45 cable.

### Surge protection for information technology

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Reliable data is indispensable in today's industry. The sensitive systems used in LANs work with high frequencies at low signal levels and are networked over a wide area. Surge voltages can quickly lead to largescale failures and, in the worst-case scenario, data loss. Data Line Surge protectors are specifically designed to **protect your investment in expensive wired, wireless and PoE equipment.**

### High-speed data protection

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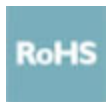
If you need effective **Lightning, RFI, ESD and transient surge protection** for highspeed data transmission, the DT-LAN-CAT.6+ offers universal protection without affecting the signal at network speeds of up to 10 Gbps.

### Suitable for the following environments

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- 100/1000/10G-Base-T
- Power over Ethernet (PoE+) "Mode A" and "Mode B"
- TOKEN Ring
- FDDI/CDDI
- ISDN
- DS1
- VG-AnyLAN
- PROFINET

Surge protection in accordance with Class EA (CAT6A). RJ45 attachment plug with separate grounding cable and ground connection snap-on foot for NS 35 DIN rails.



## DT-LAN-CAT.6+ Technical Specifications

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### Ambient Conditions

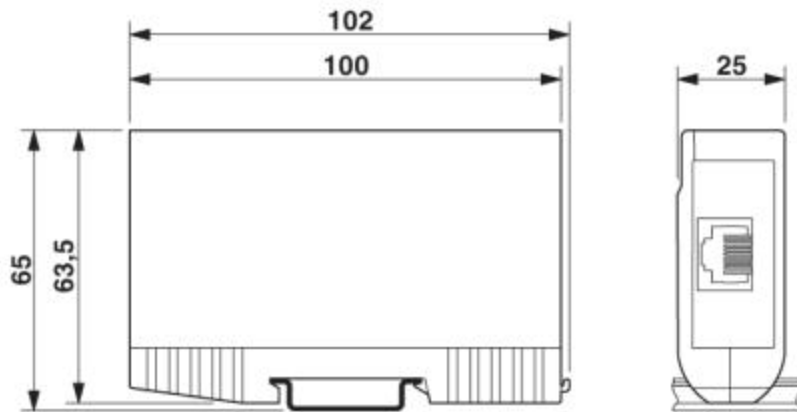
Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Degree of protection	IP20

### Protective circuit

IEC test classification	B2
	C1
	C2
	C3
	D1
Maximum continuous voltage UC	$\leq 3.3 \text{ V DC } (\pm 60 \text{ V DC/PoE+})$
Rated current	$\leq 1.5 \text{ A } (25 \text{ }^\circ\text{C})$
Operating effective current IC at UC	$\leq 1 \text{ } \mu\text{A}$
Residual current IPE	$\leq 400 \text{ } \mu\text{A}$
Nominal discharge current In (8/20) $\mu\text{s}$ (Core-Core)	100 A
Nominal discharge current In (8/20) $\mu\text{s}$ (core-earth)	2 kA (per signal pair)
Total discharge current Itotal (8/20) $\mu\text{s}$	10 kA
Nominal pulse current Ian (10/700) $\mu\text{s}$ (Core-Core)	$\leq 40 \text{ A}$
Nominal pulse current Ian (10/700) $\mu\text{s}$ (Core-Earth)	$\leq 160 \text{ A}$

Output voltage limitation at 1 kV/ $\mu$ s (core-core) spike	$\leq 85$ V (PoE)
Output voltage limitation at 1 kV/ $\mu$ s (core-earth) spike	$\leq 700$ V
Output voltage limitation at 1 kV/ $\mu$ s (core-core) static	$\leq 9$ V
Output voltage limitation at 1 kV/ $\mu$ s (core-earth) static	$\leq 700$ V
Residual voltage at In (conductor-conductor)	$\leq 15$ V
	$\leq 100$ V (PoE)
Voltage protection level Up (core-core)	$\leq 9$ V (B2 - 1 kV/25 A)
	$\leq 100$ V (B2 - 1 kV/25 A - PoE)
	$\leq 15$ V (500 V / 100 A)
Voltage protection level Up (core-ground)	$\leq 900$ V (B2 - 4 kV/100 A)
	$\leq 700$ V (C2 - 4 kV/2 kA)
Response time $t_A$ (core-core)	$\leq 1$ ns
Response time $t_A$ (core-earth)	$\leq 100$ ns
Input attenuation $a_E$ , sym.	$\leq 1$ dB (up to 100 MHz/direct measuring)
	$\leq 1$ dB (up to 250 MHz/direct measuring)
	$\leq 3$ dB (up to 500 MHz/direct measuring)
Near-end crosstalk attenuation	$\geq 35$ dB (250 MHz/100 $\Omega$ /link)
	$\geq 45$ dB (100 MHz / 100 $\Omega$ / Link)
	$\geq 27$ dB (500 MHz / 100 $\Omega$ / Link)
	$\geq 39$ dB (250 MHz/100 $\Omega$ /direct measuring)
Cut-off frequency $f_g$ (3 dB), sym. in 100 Ohm system	$> 500$ MHz
Capacity (core-core)	typ. 12 pF ( $f= 1$ MHz / $V_R= 0$ V)
Capacity (core-earth)	typ. 2 pF ( $f= 1$ MHz / $V_R= 0$ V)
Surge protection fault message	None

Impulse durability (conductor-conductor)	B2 - 1 kV / 25 A
Impulse durability (conductor-ground)	B2 - 4 kV/100 A
	C2 - 4 kV/2 kA
	D1 - 1 kA
<b>General</b>	
Housing material	Zinc die-cast
Color	silver/black
Mounting type	Connection-specific attachment plug and DIN rail, 35 mm
Design	Attachment plug for DIN rail mounting
Number of positions	8
Direction of action	Line-Line & Line-Ground/Shield
<b>Connection, equipotential bonding</b>	
Connection method	Cable connection
<b>Connection data</b>	
Connection method	RJ45
Connection method IN	RJ45 socket
Connection method OUT	RJ45 socket
<b>Dimensions</b>	
Height	102 mm
Width	25 mm
Depth	63.5 mm




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### Standards and Regulations

Standards / specifications	IEC 61643-21 2002
	EN 50173-1 2002
	ISO/IEC 11801-Am.1 2006

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### Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
Reach and RoHS Compliant	<u>Reach and RoHS Compliant</u>

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### Approvals

UL Listed  
EAC

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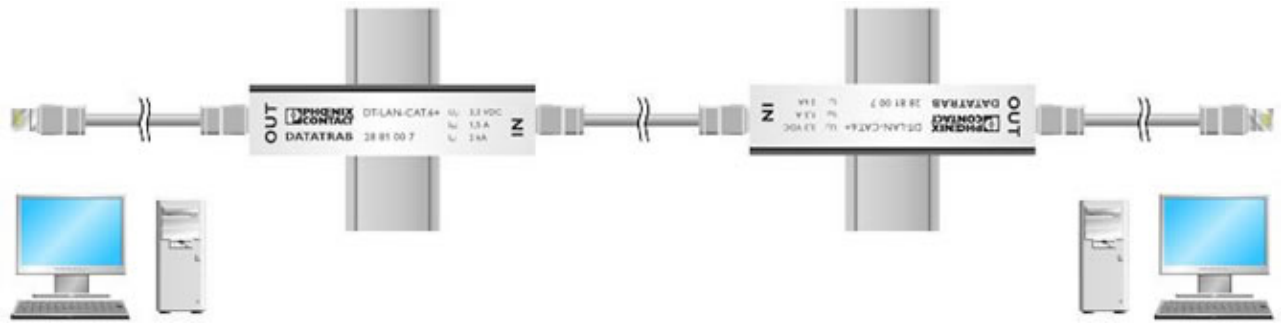
### Commercial data

Packing unit	1
Weight per piece	320.0 g
Country of origin	Germany

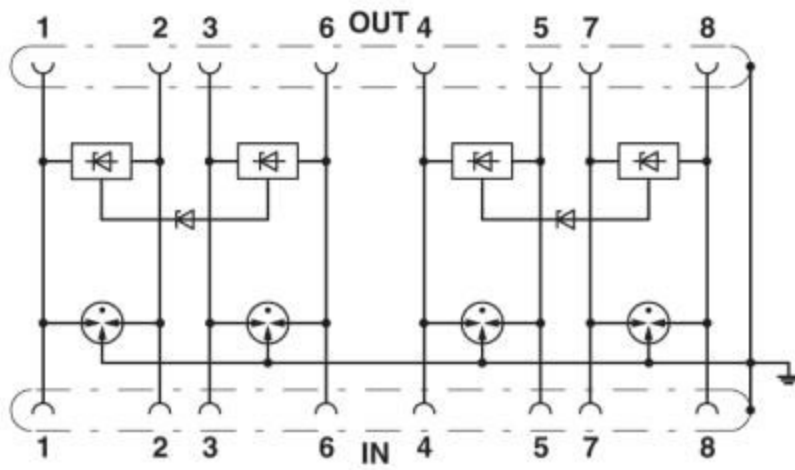
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### Data Line Surge Protector Application Diagram

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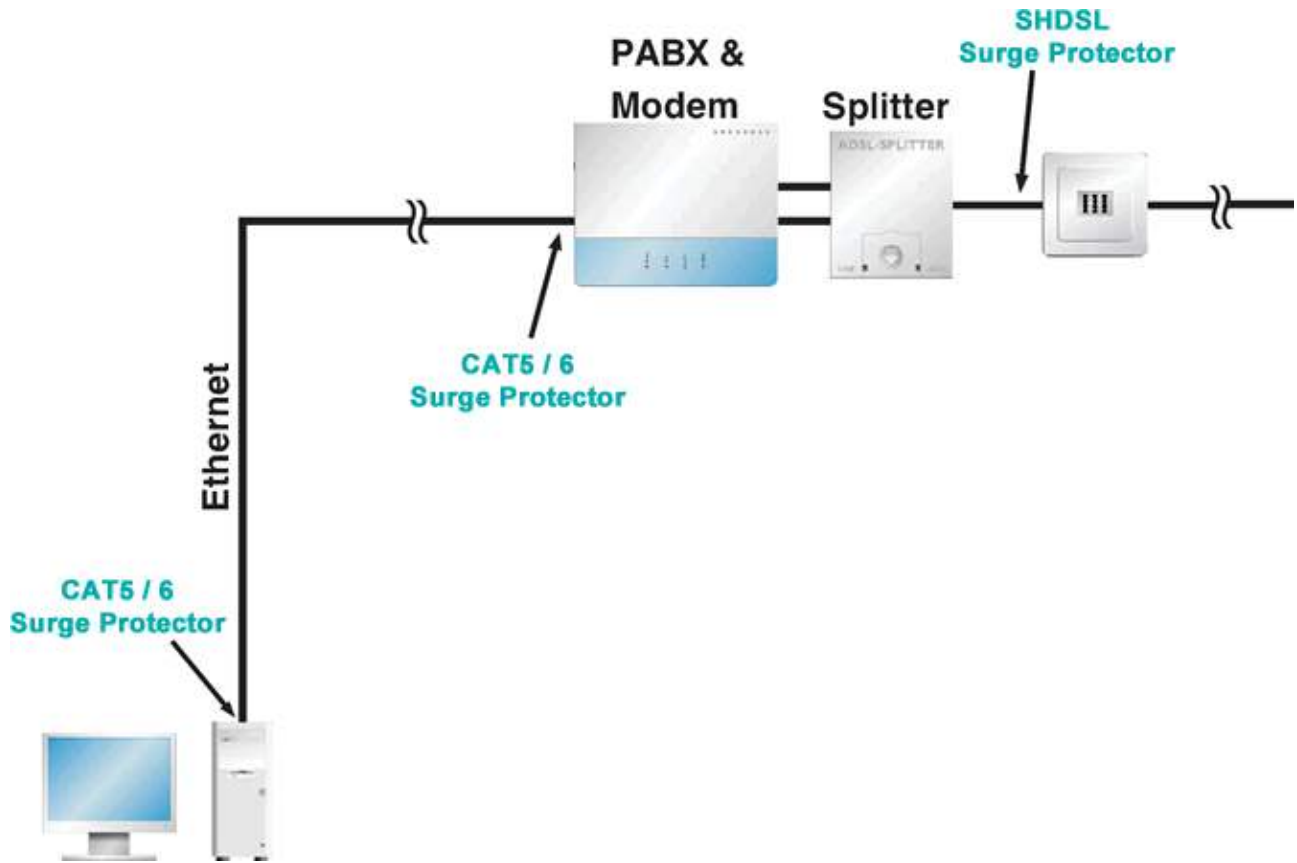


## Circuit Diagram



## Protection Against Surge Voltage

LAN systems are safely protected against surge voltage by CAT6 Surge Protectors. Due to the high bandwidth of the surge protectors, the transmission signal is not influenced. All signal wires and the ground conductor must be connected to the surge protector according to the connection scheme. Any DIN rail should be grounded.



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