

# E-Mobility

Surge protection for charging infrastructure

Surge protection for publicly accessible charging equipment is compulsory in accordance with IEC 60364-7-722



## Protection against

- damage to charging regulators, charging stations and the charging electronics of the vehicle
- Short circuits of Li-ion batteries due to surge voltages
- Resulting costs due to failure of the charging station
- Voltage spikes that destroy the electronics of the vehicle when connected to the charging equipment
- Surge voltages in data cables for ensuring the monitoring and communication of the system



Surge arrester V20  
and Net Defender

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## Net Defender



- Low protection level at a high current load
- Support for Power over Ethernet ++ (PoE++/4PPoE) up to 1A according to IEEE 802.3
- Tested transmission qualities in networks up to 10 GBit (Class EA) or CAT6A
- Rapid installation due to pluggable design
- High-quality RJ45 sockets
- Incl. DIN rail fastening set and earthing cable
- Earthing via DIN rail or connection cable

### ND-CAT6A/EA

Testing standard	IEC 61643-21
Category	Typ 2+3 / C2+C1
LPZ	1 -> 3
Maximum continuous voltage AC	41 V
Maximum continuous voltage DC	58V
Impulse durability wire-wire	C1: 0,3 kV / 0,15 kA (8/20µs)
Impulse durability wire-earth	C2: 2 kV / 1 kA (8/20µs)
Arrester surge current (8/20)	7 kA
Protection level wire-wire	<120 V
Protection level wire-earth	<700 V
Frequency range	>500 MHz

## Surge arrester V20



- For surge protection equipotential bonding in accordance with VDE 0100-443 (IEC 60364-4-44)
- Arresting capacity up to 40 kA (8/20) per pin through high-performance varistors
- Modular, plug-in arrester with dynamic cut-off unit and visual status display
- Locking function with vibration protection and voltage coding
- The FS variants have a potential-free changeover contact for remote signalling

### V20-3+NPE-280

SPD to EN 61643-11	Typ 2
SPD to UL 1449	Type 4
Nominal voltage AC (50/60 Hz)	$U_n$ 230 V
Maximum continuous voltage AC	$U_c$ 280 V
Nominal discharge current (8/20 µs)	$I_n / L-N$ 20 kA
Maximum discharge current (8/20 µs)	$I_{max}$ 40 kA
Arrester surge current (8/20 µs) [total]	$I_{total}$ 60 kA
Protection level [L-N]	$U_p$ 1,3 kV
Protection level [L-N] @ 1 kA	$U_{res}$ 0,7 kV
Protection level [L-N] @ 5 kA	$U_{res}$ 0,9 kV
Short-circuit resistance for max. mains-side overcurrent protection	50 kA eff
Protection type	IP20
Approvals	UL, ÖVE, VDE

Retrofit type 2 surge protection and data cable protection quickly and easily:

**Installation directly in the charging station**

or

**Installation in the connection and media distribution system**

### Our expert tip:

For buildings with an existing external lightning protection system, IEC 62305-3 requires T1+T2 combination surge arresters in both the charging station and the connected low-voltage distribution system.

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