

SDS

BAHN

Voltage Limiting Device

FURTHER EQUIPMENT

- Electrical isolation of insulated track sections and earthed parts of installations
- Safe equipotential bonding by heavy-current-resistant welding of the electrodes in case of a short circuit at the overhead contact line or earth fault
- Discharging of surges without coming up of short circuits due to lightning-resistant SDS ... voltage limiting device
- Short-circuit withstand capability
25 kA_{rms} / 100 ms; 36 kA_{rms} / 75 ms



Rail adapter incl. SDS fuse link.

DIN EN 50122-1 defines the use of voltage limiting devices for dc and ac railways for so-called "open earthing of railways" in overhead contact lines and current collectors.

In order to prevent any upcoming of hazardous surges between the insulated rails or rail sections of electrical railways and earthed parts of the installation, voltage limiting devices (SDS ...) are used.

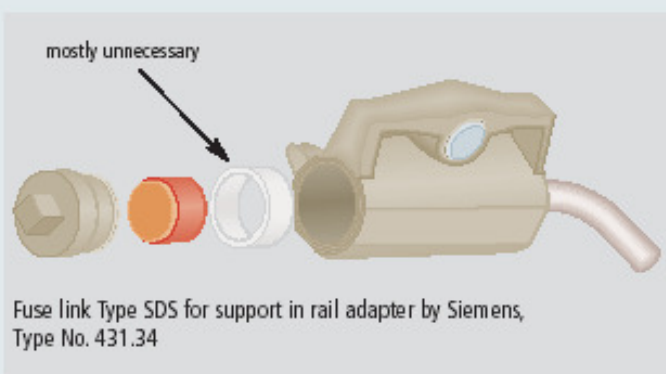
Their function is to connect parts of the installation in overhead contact lines and current collectors permanently with the return circuit, as soon as the threshold voltage is exceeded.

In case of atmospherical overvoltages, the lightning-resistant SDS ... voltage limiting device is capable of returning to the initial condition after discharging impulse currents. Only if the indicated lightning current loads are exceeded, a permanent short circuit is initiated by heavy-current-resistant welding of the electrodes and, consequently, the fuse link has to be replaced.

The SDS voltage limiting device consists of the spark gap unit and the respective terminal set for direct connection with the rail or the overhead contact line tower.

The spark gap unit Type SDS 1, Part No. 923 110, developed by DEHN + SÖHNE has also been approved by the German Federal Railway Authority (EBA).

Type SDS ... NH 00 is designed for installation into NH00 fuse holders or isolators. In connection with the leakage current detecting device DEHNisola, the user can localise a short-circuited spark-gap unit easily and quickly.



Fuse link Type SDS for support in rail adapter by Siemens, Type No. 431.34

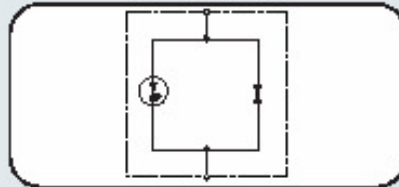
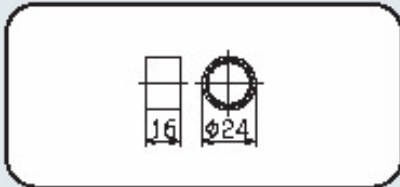


SDS 2 NH00 installed into mains connection box with DEHNisola combined operating state controlling device

RAILWAYS

SDS

EARTHING DEVICES



	SDS 1	SDS 2	SDS 3	SDS 4	SDS 5
Power frequency sparkover voltage U_{50}	≤ 940 V	—	—	—	—
DC sparkover voltage U_{50}	600 V +/- 20 %	350 V +/- 20 %	550 V	230 V +/- 20%	120 V +/- 20 %
Impulse sparkover voltage	≤ 1400 V (1 kV/μs)	≤ 900 V (1 kV/μs)	≤ 1000 V (1 kV/μs)	≤ 650 V (1 kV/μs)	≤ 600 V (1 kV/μs)
Self-extinguishing capability	300 A / 65 V	—	—	—	—
Lightning current discharge capacity (10/350 μs) I_{imp}	5 kA	2 kA	5 kA	3 kA	2 kA
Lightning current withstand capability (10/350 μs)	25 kA	25 kA	25 kA	25 kA	25 kA
Impulse current discharge capacity (8/20 μs)	—	—	—	20 kA	20 kA
Safe short circuit due to welding of the electrodes at ac currents @ 100 ms	≥ 1.5 kA / 1000 V / 100 ms	—	—	—	—
Safe short circuit due to welding of the electrodes at ac currents @ 30 ms	≥ 2.5 kA / 1000 V / 30 ms	—	—	—	—
Safe short circuit due to welding of the electrodes at dc current	≥ 750 A / 250 ms	≥ 600 A / 250 ms	≥ 600 A / 250 ms	≥ 600 A / 250 ms	≥ 600 A / 250 ms
Short circuit withstand capability	25 kA _{TRMS} / 100 ms; 36 kA _{TRMS} / 75 ms	25 kA _{TRMS} / 100 ms; 36 kA _{TRMS} / 75 ms	25 kA _{TRMS} / 100 ms 36 kA _{TRMS} / 75 ms	25 kA _{TRMS} / 100 ms; 36 kA _{TRMS} / 75 ms	25 kA _{TRMS} / 100 ms; 36 kA _{TRMS} / 75 ms
Long-term current	1 kA _{TRMS} for t ≤ 120 s	1 kA _{TRMS} for t ≤ 120 s	1 kA _{TRMS} for t ≤ 120 s	1 kA _{TRMS} for t ≤ 120 s	1 kA _{TRMS} for t ≤ 120 s
Leakage current I_{lc}	< 1 μA at 100 V dc	< 1 μA at 100 V dc	< 1 μA at 100 V dc	≤ 1 μA at 100 V dc	< 1 μA at 100 V dc
Mounting on	allows for installation into voltage breakdown protector/rail adapter by SIEMENS No. 431.34				
Tightening torque of the fuse link in the busbar adapter	15 Nm	15 Nm	15 Nm	15 Nm	15 Nm
Approvals, Certifications	EBA	—	—	—	—
DB Drawing No.	4 Ebs 15.13.20 Sheet 2	—	—	—	—
Ordering information					
Type	SDS 1	SDS 2	SDS 3	SDS 4	SDS 5
Part No.	923 110	923 117	923 116	923 118	923 119
Packing unit	10 pc(s)	10 pc(s)	10 pc(s)	10 pc(s)	10 pc(s)

SDS 2 NH00

DC sparkover voltage U_{50}	350 V +/- 20%
Impulse sparkover voltage	≤ 900 V (1 kV/μs)
Lightning current discharge capacity (10/350 μs) I_{imp}	2 kA
Lightning current withstand capability (10/350 μs)	25 kA
Safe short circuit due to welding of the electrodes at dc currents	≥ 600 A / 250 ms
Short circuit withstand capability	10 kA _{TRMS} / 50 ms
Long-term current	1 kA _{TRMS} for t ≤ 120 s
Leakage current I_{lc}	< 1 μA at 100 V dc
Mounting on	NH fuse holder size 00
Enclosure material	red thermoplastic, UL 94 V-0

Ordering information

Type	SDS 2 NH00
Part No.	923 123
Packing unit	1 pc(s)

SDS 2
in NH 00 Enclosure