SDS

Voltage limiting device

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

DIN EN 50122-1 describes the use of voltage limiting devices for d.c. and a.c. traction systems for so-called "open traction system earthing" of conductive components of overhead contact lines and current collectors. In order to prevent the occurrence of hazardous surges between the insulated tracks or track sections of electric railways and earthed parts of the installation, voltage limiting devices (SDS ...) are used.

Their function is to permanently connect parts of the installation in the overhead contact line and current collector areas to the return conductor as soon as the threshold voltage is exceeded.

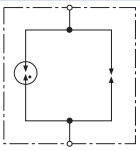
Cylindrical SDS spark gap unit for use with rail adapter Siemens No. 8WL6503-xx

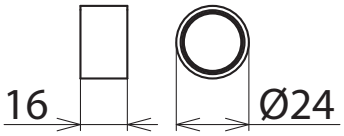
In case of atmospheric overvoltages, the lightning-resistant SDS ... voltage limiting device is capable of returning to its initial state after discharging the impulse current. Only if the specified lightning current load is exceeded, a permanent short-circuit is initiated by heavy-current-resistant welding of the electrodes and the fuse link has to be replaced.

The SDS voltage limiting device consists of a spark gap unit and the respective connecting kit for direct connection to the rail or overhead contact line tower.

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

SDS ...





Type	SDS 1	SDS 2	SDS 3	SDS 4	SDS 5
Part No.	923 110	923 117	923 116	923 118	923 119
Power frequency sparkover voltage (U_{aw})	≤ 940 V	—	—	—	—
d.c. sparkover voltage (U_{ag})	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) 0,1x / 0,5x / 1x	5 kA	2 kA	2.5 kA	2.5 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) 0,1x / 0,5x / 1x	—	—	—	20 kA	20 kA
Safe short-circuit due to welding of the electrodes for alternating currents @ 100 ms	≥ 1.5 kA / 1000 V / 100 ms	—	—	—	—
Safe short-circuit due to welding of the electrodes for alternating currents @ 30 ms	≥ 2.5 kA / 1000 V / 30 ms	—	—	—	—
Safe short-circuit due to welding of the electrodes for direct currents	≥ 750 A / 250 ms	≥ 600 A / 250 ms	—	≥ 600 A / 250 ms	≥ 600 A / 250 ms
Short-circuit withstand capability	25 kA_{rms} / 100 ms; 36 kA_{rms} / 75 ms	25 kA_{rms} / 100 ms; 36 kA_{rms} / 75 ms	25 kA_{rms} / 100 ms; —	25 kA_{rms} / 100 ms; 36 kA_{rms} / 75 ms	25 kA_{rms} / 100 ms; 36 kA_{rms} / 75 ms
Long-term current	1 kA_{rms} for t ≤ 120 s	1 kA_{rms} for t ≤ 120 s	—	1 kA_{rms} for t ≤ 120 s	1 kA_{rms} for t ≤ 120 s
Leakage current (I_{lc})	< 1 µA for 100 V dc	< 1 µA for 100 V dc	—	< 1 µA for 100 V dc	< 1 µA for 100 V dc
Operating temperature range (T_U)	-40 °C...+80 °C	-40 °C...+80 °C	-40 °C...+80 °C	-40 °C...+80 °C	-40 °C...+80 °C
For mounting on	voltage breakdown protectors/SIEMENS rail adapters No. 8WL6503-xx				
Tightening torque of the fuse link in the busbar adapter	15 Nm	15 Nm	15 Nm	15 Nm	15 Nm
Approvals	EBA	—	—	—	—
DB Drawing No.	4 Ebs 15.13.20 Blatt 2	—	—	—	—

Accessory, kit parts and spare parts from page 195

Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.

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