# Voltage fuse
# Type 8961



## Description

The type 8961 voltage fuse is suitable for limiting contact voltages in direct current powered rail operations. This product is a class 1 VLD in accordance to EN 50526-2:2014. In conformity with DIN EN 50122-1:2011-09 (VDE 0115-3:2011-09), the threshold of the voltage fuse type 8961 is < DC 150V (see technical data).

The voltage fuse separates the floating ground structural elements or conductor components effectively from each other as long as the potential difference between the two lies below the threshold voltage of the fuse.

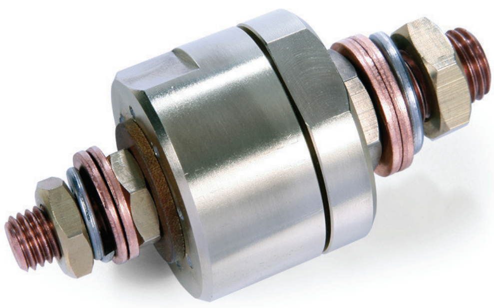
When the potential difference exceeds the threshold voltage, the fuse fails in the conductive state, similar in effect to an irreversible metallic conductive connection, or becomes electrically non-conductive again when the threshold is not reached. The determinant of the state of the voltage fuse after a response is the electrical charge allowed through for the short period, which must lie below the impulse load capacity for the non-conductive state to be restored.

For an exact test, test of the threshold and residual voltage of the internal spark gap, the voltage fuse can be disconnected on one side or removed and then checked with the portable battery-powered type 8204 voltage fuse tester.

Any type of test with the fuse either installed or removed should always be performed twice, with the polarity reversed each time.

For complete protection devices with voltage fuses, see the Product Data Sheet type 8901 or ask us for further information.
The brass-copper-housing of the voltage fuse is useable for most of the voltage fuse insets (diameter 24mmx16mm) as delivered from ESN.
Complete solutions in a wide variety of different configurations are available (please enquire).

ATTENTION:
After replacing the fuse, the housing of the voltage-fuse must be tightened with 30 Nm. It is recommended to send the voltage-fuse for repair to ESN.



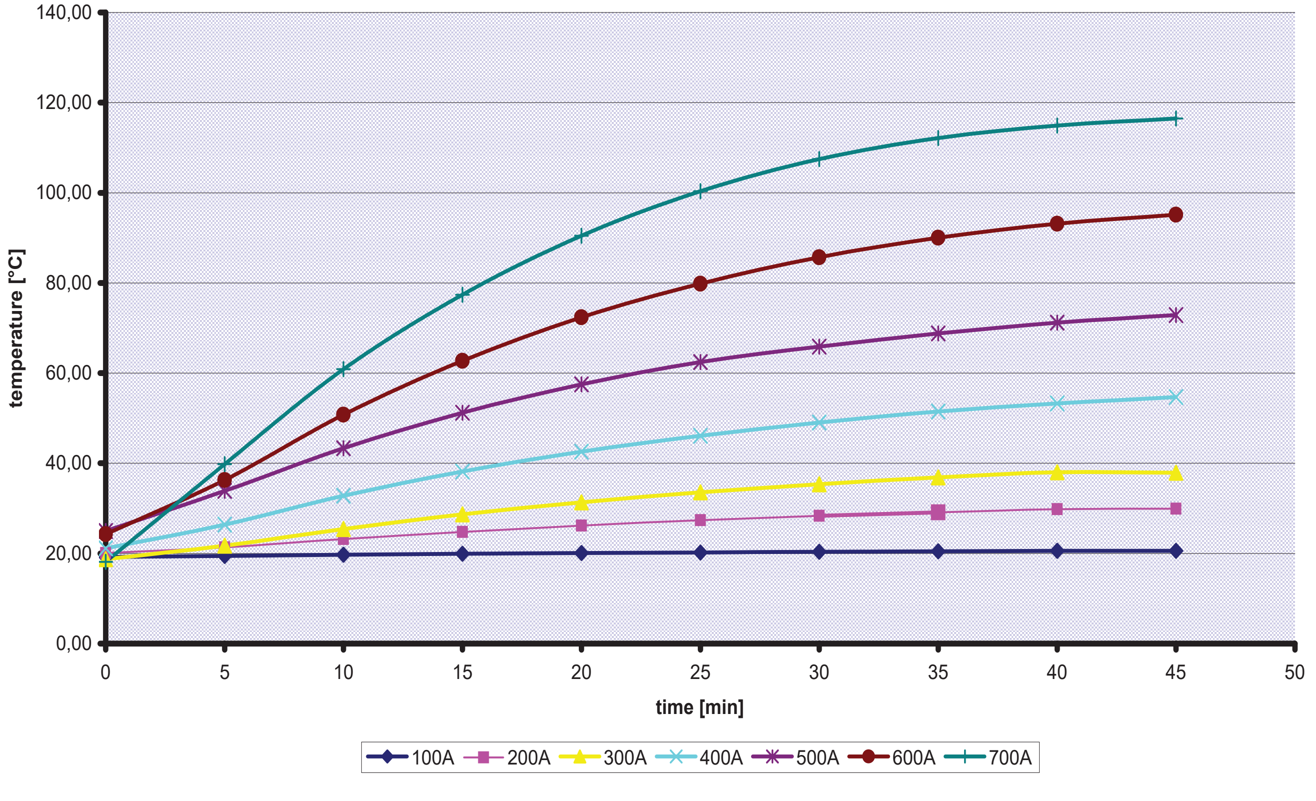
## Technical data

| | |
|---|---|
| Dimensions | Ø 50 mm, length 106 mm |
| Threshold | DC < 120 V +/- 20%<br>DC < 90V +/- 20%<br>DC < 75V +/- 20%<br>The threshold DC 120V +20% <150V DC corresponds to the requirements of DIN EN 50122-1:2011-09 (VDE 0115-3:2011-09). |
| Product standard | class 1 VLD in accordance to EN50526-2:2014, |
| Special conditions: | Altitude >-120m and < 1400m (EN50123-1),<br>Atmospheric pressure 77,8 to110,4kPa<br>Ambient temperature during service -5°C to +45°C<br>Max. daily average temperature +35°C<br>Relative humidity 93% at +40°C<br>Pollution PD3 (EN50124-1)<br>Vibrations and shock Acc. to Annex B of EN50123-1<br>Fire hazardous Class F0 (EN50123-1) |
| Material | Brass- housing<br>galvanically tin-plated copper bolts |
| Permanent current | 300A |
| Impulse current (reversible) | 2kA (10/350µs) |
| Impulse current (non reversible) | 25kA (10/350µs) |
| Short circuit current (non reversible) | ≤ 5kA for 250ms |
| Connections | M 12 (SW 19) max. 20 Nm<br>M 16 (SW 24) max. 40 Nm |
| Operating temperature | -40°C to +40°C |
| max. heating temp. | 120°C |
| Accessories | |
| Portable tester | 120V: type 8204, part no. 250208 |
| Mounting bracket 75 x 50 mm | type 910101, part no. 250210 |
| Quick mounting devices | part no. 250220 |

## Ordering Information

| Type | Part No. |
|---|---|
| 8961-120 | 250150 |
| 8961-090 | 250153 |
| 8961-075 | 250154 |

**Heating of a voltage fuse type 8961 part no. 250100**
(measured in a quick cahange device part no. 250222)




## Quick change device part no. 250222