Surge arrester

3-electrode arrester

Series/Type: T97A-A230X1F1
Ordering code: B88069X1743B502
Date: 2015-05-07
Version: 02
### Features
- Small size
- Fast response time
- High current rating
- Stable performance over life
- Low capacitance
- High insulation resistance
- Reliable failsafe advice
- RoHS-compatible

### Applications
- Branch exchange (MDF)
- Line protection
- Station protection

### Electrical specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC spark-over voltage 1) 2) 3)</td>
<td>230 V</td>
</tr>
<tr>
<td>± 20 V%</td>
<td></td>
</tr>
<tr>
<td>Impulse spark-over voltage 3)</td>
<td></td>
</tr>
<tr>
<td>at 100 V/µs - for 99% of measured values</td>
<td>&lt; 600 V</td>
</tr>
<tr>
<td>- typical values of distribution</td>
<td>&lt; 550 V</td>
</tr>
<tr>
<td>at 1 kV/µs - for 99% of measured values</td>
<td>&lt; 700 V</td>
</tr>
<tr>
<td>- typical values of distribution</td>
<td>&lt; 650 V</td>
</tr>
<tr>
<td>Service life</td>
<td></td>
</tr>
<tr>
<td>10 operations 50 Hz; 1 s 4)</td>
<td>10 A</td>
</tr>
<tr>
<td>1 operation 50 Hz; 0.18 s (9 cycl.) 4)</td>
<td>30 A</td>
</tr>
<tr>
<td>10 operations 8/20 µs 4)</td>
<td>10 kA</td>
</tr>
<tr>
<td>300 operations 10/1000 µs 4)</td>
<td>200 A</td>
</tr>
<tr>
<td>DC holdover voltage at 135 V&lt;sub&gt;DC&lt;/sub&gt;, 1300 Ω (test 3) 5)</td>
<td>&lt; 150 ms</td>
</tr>
<tr>
<td>Insulation resistance at 100 V&lt;sub&gt;DC&lt;/sub&gt; 3)</td>
<td>&gt; 1 GΩ</td>
</tr>
<tr>
<td>Capacitance at 1 MHz 3)</td>
<td>&lt; 1.5 pF</td>
</tr>
<tr>
<td>Transverse delay time 5)</td>
<td>&lt; 0.2 µs</td>
</tr>
<tr>
<td>Arc voltage at 1 A</td>
<td>~ 15 V</td>
</tr>
<tr>
<td>Glow to arc transition current</td>
<td>~ 0.5 A</td>
</tr>
<tr>
<td>Glow voltage</td>
<td>~ 60 V</td>
</tr>
<tr>
<td>Weight</td>
<td>~ 1.4 g</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-40 ... +90 °C</td>
</tr>
<tr>
<td>Climatic category (IEC 60068-1)</td>
<td>40/ 90/ 21</td>
</tr>
</tbody>
</table>

### Remarks on next page
1) At delivery AQL 0.65 level II, DIN ISO 2859
2) In ionized mode
3) Tip or ring electrode to center electrode
4) Total current through center electrode, half value through tip respectively ring electrode.
5) Test according to ITU-T Rec. K.12
Terms in accordance with ITU-T Rec. K.12; IEC 61663-2 and IEC 61643-311.

Arrester fail safe works at temperatures > 260 °C. The arrester has to be fixed mechanically, if the arrester is contacted by soldering and if the solder temperature is less than 260 °C.

**Failsafe characteristic diagram**

For arrester only, characteristic can differ in assembled module.
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Dimensional drawing in mm

Ordering code and packing advice

B88069X1743B502 = 500 pcs. on trays
Soldering parameter

Wave soldering

Wave profile features
- Pb-free assembly
  - Solder: Sn 95.5 / Ag 3.8 / Cu 0.7
  - Solder bath temperature: 263 (±3) °C
  - Dwell time: < 3 s

Soldering profile applied to a single soldering process.

Cautions and warnings

- Depending on the sensor material the short-circuit spring does not trigger until 260 °C is reached. Thermal radiation to adjacent components must be taken into consideration in the circuit design. Depending on the mounting position, the surge arrester may have to be secured by additional mechanical means.
- Do not continue to use surge arresters whose short-circuit mechanisms have been activated.
- If the contacts of the surge arresters are defective, current load can cause sparks and loud noises.
- Do not operate surge arresters in power supply networks, whose maximum operating voltage exceeds the minimum spark-over voltage of the surge arresters.
- Surge arresters may become hot in the event of longer periods of current stress (burn risk). In the event of overload the connectors may fail or the component may be destroyed.
- Surge arresters must be handled with care and must not be dropped.
- Do not continue to use damaged surge arresters.

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