

# Surge arrester

3-electrode arrester

Series/Type: T83-A90XF1 Ordering code: B88069X843

Ordering code: B88069X8430B502 Version/Date: Issue 03 / 2007-11-22

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## 3-electrode arrester T83-A90XF1

| Features                                         | Applications          |  |
|--------------------------------------------------|-----------------------|--|
| Standard size                                    | Branch exchange (MDF) |  |
| <ul> <li>Fast response time</li> </ul>           | Line protection       |  |
| <ul> <li>High current rating</li> </ul>          | Station protection    |  |
| <ul> <li>Stable performance over life</li> </ul> |                       |  |
| <ul> <li>Very low capacitance</li> </ul>         |                       |  |
| <ul> <li>High insulation resistance</li> </ul>   |                       |  |
| <ul> <li>Reliable failsafe device</li> </ul>     |                       |  |
| <ul> <li>RoHS-compatible</li> </ul>              |                       |  |

## **Electrical specifications**

| DC spark-over voltage                                                                                               | ; <sup>1) 2) 4)</sup>                                                                |                          | 90<br>± 20                                                                            | V<br>%      |
|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------|---------------------------------------------------------------------------------------|-------------|
| Impulse spark-over voltage <sup>4)</sup> at 100 V/µs - for 99 % of measured values - typical values of distribution |                                                                                      |                          | < 400<br>< 300                                                                        | V<br>V      |
| at 1 kV/µs                                                                                                          | <ul><li>for 99 % of measured values</li><li>typical values of distribution</li></ul> |                          | < 450<br>< 350                                                                        | V           |
| Service life                                                                                                        |                                                                                      |                          |                                                                                       |             |
| 10 operations                                                                                                       | 50                                                                                   | Hz, 1 s <sup>5)</sup>    | 10                                                                                    | Α           |
| 1 operation                                                                                                         | 50                                                                                   | Hz, 0.18 s (9 cycles) 5) | 40                                                                                    | А           |
| 10 operations                                                                                                       | 5 (5x (+) & 5x (-)) 8/                                                               | ′20 μs <sup>5)</sup>     | 10                                                                                    | kA          |
| 1 operation                                                                                                         | 8/                                                                                   | ′20 μs <sup>5)</sup>     | 15                                                                                    | kA          |
| 1 operation                                                                                                         | 10/                                                                                  | ′350 μs <sup>5)</sup>    | 5                                                                                     | kA          |
| Insulation resistance a                                                                                             | at 50 V <sub>dc</sub> <sup>4)</sup>                                                  |                          | > 10                                                                                  | $G\Omega$   |
| Capacitance at 1 MHz                                                                                                | . 4)                                                                                 |                          | < 1.5                                                                                 | pF          |
| Transverse delay time                                                                                               | , 3)                                                                                 |                          | < 0.2                                                                                 | μs          |
| Arc voltage at 1 A Glow to arc transition Glow voltage                                                              | current                                                                              |                          | ~ 10<br>< 1<br>~ 60                                                                   | V<br>A<br>V |
| Weight                                                                                                              |                                                                                      |                          | ~ 2.2                                                                                 | g           |
| Storage temperature                                                                                                 |                                                                                      |                          | -40 <b>+</b> 90                                                                       | °C          |
| Climatic category (IEC                                                                                              | 60068-1)                                                                             |                          | 40/ 90/ 21                                                                            |             |
| Marking, red negative                                                                                               |                                                                                      |                          | <b>EPCOS</b> 90 YY O 90 - Nominal voltage YY - Year of production O - Non radioactive |             |

KB AB E / KB AB PM Issue 03 / 2007-11-22



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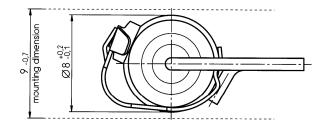
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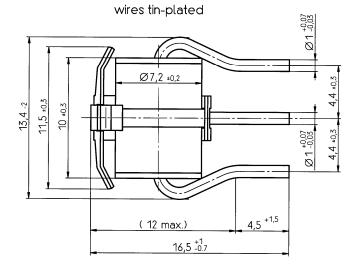
- 1) At delivery AQL 0.65 level II, DIN ISO 2859
- 2) In ionized mode
- Test according to ITU-T Rec. K.12
- 4) Tip or ring electrode to center electrode
- Total current through center electrode, half value through tip respectively ring electrode.

Terms in accordance with ITU-T Rec. K.12 and DIN 57845/VDE0845

The arrester failsafe mechanism contains a solder pellet with a melting temperature range from 193 to 203 °C.

### **Dimensional Drawing**





Not to scale

Dimensions in mm

Non controlled document

### **Cautions and warnings**

- The short-circuit spring does not trigger until 190 °C is reached depending on the material. Care must be taken to limit the thermal radiation onto adjacent parts to safe values.
- Depending on the incorporation position, the surge arrester may have to be additionally secured by mechanical means.
- Surge arresters must not be operated directly in power supply networks.
- Surge arresters may become hot in case of longer periods of current stress (danger of burning).
- Surge arresters may be used only within their specified values. In case of overload, the head contacts may fail or the component may be destroyed.
- Damaged surge arresters must not be re-used.
- Surge arrester with triggered short-circuit mechanisms must not be re-used.

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