**Surge arrester**
**POLIM-R..-2N**

**Product description:**
- Metal-oxide (MO) surge arrester without spark gap, with own ABB metal-oxide resistors since more than 30 years
- Direct molded silicone housing for best environmental robustness
- 100% in house production – fully in charge of complete process
- High quality, safe and reliable, maintenance free
- For alternating current (AC) systems
- For indoor and outdoor installations
- Very high energy absorption capability
- Outstanding low protection level
- Excellent long-term stability even in case of frequent current impulses

**Especially recommended for:**
- Overvoltage protection of motors
- Overvoltage protection of power electronics
- Energy absorber of semiconductor switching devices

**Additional certification:**
- Shock and vibration tested according to IEC 61373
- Fire and smoke behavior tested and classified according to EN 45545-2

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**Technical data**

**Characteristics**
- Impulse current tested according to IEC 61643-11
  - Class I & II
- Nominal discharge current \( I_{\text{nom}} \) (8/20 µs)
  - 20 kA<sub>peak</sub>
- Lightning discharge current \( I_{\text{imp}} \)
  - 20 kA<sub>peak</sub>

**Characteristics tested according to EN 50526-1 / IEC 62848-1**
- High current impulse \( I_{\text{hc}} \) (4/10 µs)
  - 100 kA<sub>peak</sub>
- Charge transfer capability \( Q_t \)
  - 5 As (C)
- Energy withstand capability \( W \)
  - 24 kJ/kV (\( U_c \))
- Rated short-circuit current (after overload) \( I_{\text{i}} \)
  - 20 kA<sub>AC</sub> for 0.2 s

**Mechanical loads**
- Torque
  - 20 Nm
- Short term load SSL perpendicular to axis
  - 60 Nm
- Long term load SLL perpendicular to axis
  - 30 Nm

**Service conditions**
- Ambient air temperature \( T_{\text{amb}} \)
  - −60 to +55 °C
  - (for temperatures up to 80 °C consider instructions of application guidelines)
- Altitude
  - up to 1800 m
  - (for higher altitudes contact ABB)
- Frequency of system voltage
  - 15 to 62 Hz
Electrical data and Housing

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**Electrical data**

<table>
<thead>
<tr>
<th>Continuous operating voltage</th>
<th>Residual voltage $U_{res}$ at specified impulse current</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Steep current impulse wave $1/…\mu s$</td>
</tr>
<tr>
<td></td>
<td>$U_{c}$ (=$U_r$)</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td></td>
<td>$U_{c}$ (kV)</td>
</tr>
<tr>
<td>0.11</td>
<td>0.35</td>
</tr>
<tr>
<td>0.22</td>
<td>0.72</td>
</tr>
<tr>
<td>0.28</td>
<td>0.88</td>
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<tr>
<td>0.40</td>
<td>1.20</td>
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<tr>
<td>0.44</td>
<td>1.37</td>
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<tr>
<td>0.66</td>
<td>2.08</td>
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<tr>
<td>0.78</td>
<td>2.43</td>
</tr>
</tbody>
</table>

* The rated voltage $U_r$ of the arrester coincides with the continuous operating voltage $U_c$.

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**Housing**

<table>
<thead>
<tr>
<th>Continuous operating voltage</th>
<th>Creepage distance</th>
<th>Flashover distance</th>
<th>Height</th>
<th>Weight</th>
<th>Insulation withstand voltage of empty housing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$U_r$ (kV)</td>
<td>$U_{res}$ (kV)</td>
<td>mm</td>
<td>mm</td>
<td>1 min wet</td>
</tr>
<tr>
<td></td>
<td>$U_r$ (kV)</td>
<td>$U_{res}$ (kV)</td>
<td>mm</td>
<td>mm</td>
<td>1.2/50 μs</td>
</tr>
<tr>
<td></td>
<td>$U_r$ (mm)</td>
<td>$U_{res}$ (mm)</td>
<td>mm</td>
<td>mm</td>
<td>required values acc. to EN/IEC</td>
</tr>
<tr>
<td>0.11</td>
<td>115</td>
<td>115</td>
<td>120</td>
<td>&lt;1.5</td>
<td>0.50</td>
</tr>
<tr>
<td>0.22</td>
<td>115</td>
<td>115</td>
<td>120</td>
<td>&lt;1.5</td>
<td>1.03</td>
</tr>
<tr>
<td>0.28</td>
<td>115</td>
<td>115</td>
<td>120</td>
<td>&lt;1.5</td>
<td>1.27</td>
</tr>
<tr>
<td>0.40</td>
<td>115</td>
<td>115</td>
<td>120</td>
<td>&lt;1.5</td>
<td>1.72</td>
</tr>
<tr>
<td>0.44</td>
<td>115</td>
<td>115</td>
<td>120</td>
<td>&lt;1.5</td>
<td>1.97</td>
</tr>
<tr>
<td>0.66</td>
<td>115</td>
<td>115</td>
<td>120</td>
<td>&lt;1.5</td>
<td>2.99</td>
</tr>
<tr>
<td>0.78</td>
<td>115</td>
<td>115</td>
<td>120</td>
<td>&lt;1.5</td>
<td>3.50</td>
</tr>
</tbody>
</table>
Dimensions

Dimensions according to outline drawing 1HC0015766
Outline drawings with accessories on request

Structure of type designation

Type of surge arrester
$U_c$ = Continuous operating voltage
Housing

POLIM-R 0.44-2 N

Dimensions (mm)
Note
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Our products are certified according ISO 9001, 14001, 18001 and IRIS

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For detailed information for dimensioning of our products see following ABB documents:
- Application guidelines
  Overvoltage protection
  Metal oxide surge arresters in medium voltage systems
- Application guidelines
  Overvoltage protection
  Metal oxide surge arresters in railway facilities

For pdf or print version please send E-mail to:
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