In-Line Liquid Detonation Flame Arrester
for filling and drain lines - external installation

PROTEGO® LDA-WF(W)

Table 1: Dimensions

<table>
<thead>
<tr>
<th>DN</th>
<th>25</th>
<th>32</th>
<th>40</th>
<th>50</th>
<th>65</th>
<th>80</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>200</th>
<th>250</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>250 / 9.84</td>
<td>250 / 9.84</td>
<td>346 / 13.62</td>
<td>350 / 13.78</td>
<td>446 / 17.56</td>
<td>450 / 17.72</td>
<td>500 / 19.69</td>
<td>600 / 23.62</td>
<td>600 / 23.62</td>
<td>700 / 27.56</td>
<td>900 / 35.43</td>
</tr>
<tr>
<td>b</td>
<td>325 / 12.80</td>
<td>325 / 12.80</td>
<td>415 / 16.34</td>
<td>415 / 16.34</td>
<td>535 / 21.06</td>
<td>535 / 21.06</td>
<td>600 / 23.62</td>
<td>915 / 36.02</td>
<td>915 / 36.02</td>
<td>1090 / 42.91</td>
<td>1300 / 51.18</td>
</tr>
<tr>
<td>c</td>
<td>475 / 18.70</td>
<td>475 / 18.70</td>
<td>605 / 23.82</td>
<td>605 / 23.82</td>
<td>831 / 32.72</td>
<td>831 / 32.72</td>
<td>936 / 36.58</td>
<td>1340 / 52.76</td>
<td>1340 / 52.76</td>
<td>1520 / 59.84</td>
<td>1750 / 68.90</td>
</tr>
<tr>
<td>d</td>
<td>150 / 5.91</td>
<td>150 / 5.91</td>
<td>210 / 8.27</td>
<td>210 / 8.27</td>
<td>275 / 10.83</td>
<td>275 / 10.83</td>
<td>325 / 12.80</td>
<td>460 / 18.11</td>
<td>460 / 18.11</td>
<td>510 / 20.08</td>
<td>610 / 24.02</td>
</tr>
</tbody>
</table>

Table 2: Selection of the explosion group

<table>
<thead>
<tr>
<th>MESG</th>
<th>Expl. Gr. (IEC/CEN)</th>
<th>Gas Group (NEC)</th>
<th>Special approvals upon request</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 0,90 mm</td>
<td>IIA</td>
<td>D</td>
<td>Special approvals upon request</td>
</tr>
<tr>
<td>≥ 0,65 mm</td>
<td>IIB3</td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>
Table 3: Specification of max. operating temperature

<table>
<thead>
<tr>
<th>≤ 60°C / 140°F</th>
<th>T maximum allowable operating temperature in °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>Designation</td>
</tr>
<tr>
<td>higher operating temperatures upon request</td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Material selection for housing

<table>
<thead>
<tr>
<th>Design</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>Steel</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Shock absorber</td>
<td>Steel</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Gasket (shock absorber)</td>
<td>FPM</td>
<td>PTFE</td>
</tr>
<tr>
<td>Gasket (locking screw)</td>
<td>PTFE</td>
<td>PTFE</td>
</tr>
<tr>
<td>Flame arrester unit</td>
<td>A</td>
<td>A</td>
</tr>
</tbody>
</table>

Special materials upon request

Table 5: Material for flame arrester unit

<table>
<thead>
<tr>
<th>Design</th>
<th>A</th>
<th>* the FLAMEFILTER are also available in the materials Tantalum, Inconel, Copper, etc. when the listed housing and cage materials are used.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAMEFILTER* cage</td>
<td>Stainless Steel</td>
<td>Special materials upon request.</td>
</tr>
<tr>
<td>FLAMEFILTER*</td>
<td>Stainless Steel</td>
<td></td>
</tr>
<tr>
<td>Spacer</td>
<td>Stainless Steel</td>
<td></td>
</tr>
</tbody>
</table>

Table 6: Flange connection type

<table>
<thead>
<tr>
<th>EN 1092-1; Form B1</th>
<th>ASME B16.5; 150 lbs RFSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>other types upon request</td>
<td></td>
</tr>
</tbody>
</table>

Flow Capacity Chart

Flow rate $V$ (m³/h) (liquid) = $V_{water} \sqrt{\frac{p_{water}}{p_{liquid}}}$

The volume flow $V$ in m³/h was determined with water according to DIN EN 60534 at a temperature $T_n = 15^\circ$C and an atmospheric pressure $p_n = 1,013$ bar, kinematic viscosity $\nu = 10^{-6}$ m²/s.

To avoid electrostatic charge of flammable liquids the maximum flow is limited (refer to BG-Regulation 132, CENELEC-Report CLC/TR 50404).