Safety Device according to DIN EN ISO 5175-1

Safety device (with dust filter): **ESFN-20L**

Type ESFN-20L for protection of Tapping Points and Distribution Lines

The safety device ESFN-20L according to DIN EN ISO 5175-1:

- avoids dangerous gas mixtures by a gas non-return valve (NV)
- stops flashback through flame arrestor (FA)
- a temperature-sensitive cut-off valve stops the gas flow when a predetermined temperature is exceeded (TV)
- a dust filter protects the gas non-return valve against contamination
- every safety device is 100% tested
- all metal components in brass 2.0401 / spring 1.4310

Safety elements of the IBEDA Safety device ESFN-20L:

- NV Gas non-return valve
- FA Flame arrestor
- TV Temperature-sensitive cut-off valve

Additional features:

- DF Dust filter

Maintenance:

The safety devices are to be tested by a qualified and authorised person at regular intervals according to country specific regulations. The safety device is to be tested for gas tightness, gas flow and gas return at least once a year.

We would be pleased to offer you the flashback arrestor testing unit model PVGD.

It is not allowed to open the safety devices.

**Technical Data:**

<table>
<thead>
<tr>
<th>Gas-Types:</th>
<th>Hydrogen (H)</th>
<th>Industrial Gas (C)</th>
<th>Natural Gas (Methane) (M)</th>
<th>Propane (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working pressure:</td>
<td>0,15 MPa 1,5 bar</td>
<td>0,30 MPa 3,0 bar</td>
<td></td>
<td></td>
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<tr>
<td>Cracking pressure:</td>
<td>4 to 6 mbar position-independent</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Gas temperature:</td>
<td>-20°C up to +70°C (Oxygen -20°C up to +50°C)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Ambient temperature:</td>
<td>-20°C up to +70°C</td>
<td></td>
<td></td>
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<tr>
<td>Threads:</td>
<td>EN 560, ISO 3253</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Measure and weight:</td>
<td>diameter: 54,5 mm</td>
<td>length: 217,0 mm</td>
<td>weight: ca. 2330 g</td>
<td></td>
</tr>
<tr>
<td></td>
<td>diameter: 54,5 mm</td>
<td>length: 224,0 mm</td>
<td>weight: ca. 2350 g</td>
<td></td>
</tr>
</tbody>
</table>

**Applications:**

- Process: welding cutting heating up to 30 mm > 700 mm > 100 mm

Other materials, surface finishing, gas types and additional connections available on request.

The flashback arrestor meets the test criteria of the Australian standard AS4603:1999

F = Female, M = Male
Safety Device according to DIN EN ISO 5175-1

Type: ESFN-20L

Flow rates [air]:
- \(pv\) = Primary pressure
- \(ph\) = Secondary pressure
- \(\Delta p\) = Primary pressure minus Secondary pressure

Conversion Factors:
- 0.1 MPa = 1 bar = 100 kpa = 14,504 psi
- 1 m³/h = 35,31 cu ft/h

<table>
<thead>
<tr>
<th>Gases</th>
<th>A</th>
<th>H</th>
<th>P</th>
<th>M</th>
<th>M</th>
<th>O</th>
<th>E</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>C₂H₂</td>
<td>1,2</td>
<td>3,8</td>
<td>0,90</td>
<td>1,25</td>
<td>1,4</td>
<td>0,95</td>
<td>1,02</td>
<td>0,92</td>
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<tr>
<td>C₃H₈</td>
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<td>CH₄+C</td>
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<tr>
<td>C₂H₆</td>
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<tr>
<td>C₃H₆</td>
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</tbody>
</table>

* Conversion factor 2.5 for devices comprising a flame arrestor
  The conversion factor for free flow is 3.8.
  (Reference: BAM report 220, D. Lietze)

Example:

\[
\text{QG} = \text{QD} \times F
\]

\[
\text{QG} = 6,4 \times 1,2 = 7,68 \text{ m}^3/\text{h} \text{ C}_2\text{H}_2
\]

\(\text{QG}\) = flow / gas type
\(\text{F}\) = conversion factor
\(\text{QD}\) = flow / air

Certification/ Technical Standards/ Rules

TRBS German Technical rules for operation safety, DVS German Association for Welding, Cutting and Allied Processes, DGUV German Employer’s liability insurance association rules and regulations.

Standards/ Approvals

Company certified according to
ISO 9001:2015 and ISO 14001:2015,
CE-marking according to: Pressure Equipment Directive 2014/68/EU

(Subject to change without notice)