HUPF Series
GAS PRESSURE REGULATOR WITH INCORPORATED FILTER

INSTRUCTION SHEET

DESCRIPTION

Spring-loaded regulator with inlet pressure compensation and zero shut-off. The outlet pressure is kept constant with changing gas flow as a function of the spring setting. The zero shut-off prevents the outlet pressure from increasing when there is no gas flow through the regulator.

APPLICATION

To regulate gas and air inlet pressure for gas burners, including mixed and combined systems and in industrial distribution systems. Applicable types of fuel:

- manufactured gases (town gas)
- natural gases (group H - methane)
- liquefied petroleum gas (LPG)
- non-aggressive gases
- air

The gas pressure regulators comply with the requirements of EN88-1, class B, group 2. These gas pressure regulators are available in two versions; with or without incorporated filter, see product range page 2.
SPECIFICATION

Product range
Model HUPF (pipe sizes 1/2” up to DN 100) with filter.

Dimensions
See dimensional drawing and table on page 4.

Pipe size
1/2” up to 2” inlet and outlet internal pipe thread according to ISO 7-1, DN40, DN50, DN65, DN80 and DN100 inlet and outlet flange connections according to ISO 7005 EN 1092-4

Connections
Inlet pressure tap connections.

Capacity

Maximum working pressure
500 mbar
NOTE: minimum inlet pressure range: desired outlet pressure +2.5 mbar up to 1000 mbar.

Outlet pressure range
5 to 300 mbar
The appropriate outlet pressure range is obtained by the use of different springs.
NOTE: The regulators are supplied standard with a white spring - see „Spring setting range“ below

Closing pressure
Conform EN 88 specification (i.e. zero shut-off)

Torsion and bending stress
Pipe connections meet group 2, according to EN 88 requirements.

Set point accuracy
According to EN88-1, class A group 2.

Max. allowed pressure
Up to 1 bar without body damages

Ambient temperature range
-15 °C....+60 °C

Material of pressure receiving parts
Elastomer EN549

Sealing elements
Hydrocarbon resistant NBR rubber type NBR 70

Safety diaphragm
An external breather/outlet pipe is not necessary as the incorporated safety diaphragm ensures that, in the event of breakage of the operating diaphragm. No gas leakage into the environment of over 30dm3/h is possible. The above in compliance with para. 3.3.2. of UNI EN 88 specification.

Body material
Aluminium alloy die cast EN AB 46100, EN AB43100

Internal parts
AISI 304/Delrin

Filter
Filter element Synthetic fiber DVGW G260/1

Filtering grade
= 50µ

Standard and Approvals
The HUPF series gas pressure regulator with incorporated filter conform to the following EC-directives:
• Gas Appliance Directive (90/396/EEC)
PIN: 0083AR4719

Adjustment spring range

<table>
<thead>
<tr>
<th>Model</th>
<th>Old Models</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HUPF05B310</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Range (mbar) and colour</th>
<th>Spring code</th>
<th>Spring code</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 - 13</td>
<td>HRP15M3</td>
<td>HRP15M3</td>
</tr>
<tr>
<td>17 - 20</td>
<td>HRP15M2</td>
<td>HRP15M2</td>
</tr>
<tr>
<td>10 - 30</td>
<td>HRP15M3</td>
<td>HRP15M3</td>
</tr>
<tr>
<td>25 - 70</td>
<td>HRP15M4</td>
<td>HRP15M4</td>
</tr>
<tr>
<td>65 - 150</td>
<td>HRP15M7</td>
<td>HRP15M7</td>
</tr>
<tr>
<td>140 - 300</td>
<td>HRP15M8</td>
<td>HRP15M8</td>
</tr>
</tbody>
</table>
INSTALLATION

Important
1. Read these instructions carefully. Failure to follow the instructions could damage the product or cause a hazardous condition.
2. The installation has to be carried out by qualified personnel only.
3. Carry out a thorough checkout when installation is completed.

Warning
• Turn off gas supply before installation.
• Do not remove the seal over regulator inlet and outlet, until ready to connect piping.
• Do not remove the perforated diaphragm breather cap (3) and do not obstruct the hole.
• The regulator must be installed so that the arrow on the regulator points in the direction of the gas flow.

Mounting position
To ensure perfect regulator operation, regulator should be assembled horizontally. They can however be installed in different positions up to an angle of 90°.

Mounting location
Contact between the regulator and walls or a floor is not permitted. Maintain a distance of at least 50 mm.
Note: In case of the HUPF Series, the distance between the bottom and the ground must be at least 400 mm, to facilitate filter cleaning and inspection.

Main gas connection threaded regulators
• Take care that dirt cannot enter the gas regulator during handling.
• Ensure the gas flow in the same direction as the arrow on the housing of the gas regulator.
• Use a sound taper fitting with thread according to ISO 7-1 (BS21, DIN 2999) or a piece of new, properly reamed pipe, free from swarf.
• Do not thread or tighten the pipe or pipe fitting too far. Otherwise regulator distortion and malfunction could result.
• Apply a moderate amount of good quality thread compound to the pipe or fitting only, leaving the two end threads bare. PTFE tape may be used as an alternative.
• In order to tighten the pipe in the regulator, do not use the sleeve of the upper cover as a lever but use a suitable wrench operating on the wrench bosses.

Main regulator connection flanged regulators
• Take care that dirt cannot enter the gas regulator during handling.
• Ensure the gas flow in the same direction as the arrow on the housing of the gas regulator.
• Ensure that inlet and outlet flanges are in line and separated from each other enough to allow the regulator to be mounted between them without damaging the gasket.
• Place gasket, if necessary grease it slightly to keep it in place.
• Mount gas regulator between flanges using the bolts for each flange.

Warning
Tightness test after installation
• Spray all pipe connections and gaskets with a good quality gas leak detection spray.
• Start the appliance and check for bubbles. If a leak is found in a pipe connection, remake the joint. A gasket leak can usually be stopped by tightening the mounting screws. Otherwise replace the gas pressure regulator.
Governors with built in filter

<table>
<thead>
<tr>
<th>Model</th>
<th>Connection</th>
<th>Max. operating pressure (mbar)</th>
<th>Overall dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>HUPF015B110</td>
<td>1/2&quot;</td>
<td>500</td>
<td>138</td>
</tr>
<tr>
<td>HUPF020B110</td>
<td>3/4&quot;</td>
<td>500</td>
<td>134</td>
</tr>
<tr>
<td>HUPF025B110</td>
<td>1&quot;</td>
<td>500</td>
<td>134</td>
</tr>
<tr>
<td>HUPF032B110</td>
<td>1&quot;1/4</td>
<td>500</td>
<td>194</td>
</tr>
<tr>
<td>HUPF040B110</td>
<td>1&quot;1/2</td>
<td>500</td>
<td>194</td>
</tr>
<tr>
<td>HUPF050B110</td>
<td>2&quot;</td>
<td>500</td>
<td>236</td>
</tr>
<tr>
<td>HUPF040B310</td>
<td>DN40</td>
<td>500</td>
<td>311</td>
</tr>
<tr>
<td>HUPF050B310</td>
<td>DN50</td>
<td>500</td>
<td>352</td>
</tr>
<tr>
<td>HUPF065B310</td>
<td>DN65</td>
<td>500</td>
<td>350</td>
</tr>
<tr>
<td>HUPF080B310</td>
<td>DN80</td>
<td>500</td>
<td>350</td>
</tr>
<tr>
<td>HUPF100B310</td>
<td>DN100</td>
<td>500</td>
<td>415</td>
</tr>
</tbody>
</table>
ADJUSTMENTS

Caution
• Adjustments must be made by qualified personnel only!

Outlet pressure adjustment
(Tolerance: better than 15% of outlet pressure setting)
1. Remove the upper cap (1).
2. To obtain the required outlet pressure value, turn the set screw (4). Turn this set screw clockwise to increase the outlet pressure, counter-clockwise to decrease it.
3. Clearly mark the adjusted value of the outlet pressure.
4. Replace the upper-cap (1) and seal it with lead if necessary.

Replacing spring
1. Remove the upper-cap (1) of the pressure regulator.
2. On fully unscrew the ring nut (4).
3. Remove old and replace new spring.
4. Screw the ring-nut (4) back in.
5. Adjust the required outlet pressure by proceeding with step 1 to 4 of „Outlet pressure adjustment“ section on this page.

Final checkout of the installation
Set the appliance in operation after any adjustment and observe several complete cycles to ensure that all burner components function correctly.

MAINTENANCE

The regulators are completely maintenance-free. In the event of a breakdown, a general overhaul and factory testing is recommended.

Filter and membrane maintenance (HUPF)
1. Remove the screws at the bottom of the gas regulator and remove the cover.
2. Remove the filter cartridge or membrane and clean the filter housing thoroughly.
3. Replace the old filter or membrane element with the new one.
4. Reassemble the cover, ensuring that the guides inside the cover are properly aligned with the filter cartridge.
5. Tighten the screws, and check for gas leak by performing a leak tightness test.

Membrane Kits

<table>
<thead>
<tr>
<th>Membrane Kits</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUFP032/040 (before F302555)</td>
<td>KTMB3-0400A</td>
</tr>
<tr>
<td>HUFP032/040 (between F302565 and F301616)</td>
<td>KTMB3-1300A</td>
</tr>
<tr>
<td>HUFP032/040 (current)</td>
<td>KTMB3-1800A</td>
</tr>
<tr>
<td>HUFP090 (before F301605)</td>
<td>KTMB3-0500A</td>
</tr>
<tr>
<td>HUFP090 (between F301615 and F301066)</td>
<td>KTMB3-1400A</td>
</tr>
<tr>
<td>HUFP090 (current)</td>
<td>KTMB3-1700A</td>
</tr>
<tr>
<td>HUFP090 (before F300677) and for HUFP080B (before F300297)</td>
<td>KTMB3-1500A</td>
</tr>
<tr>
<td>HUFP065/068B/100B (current)</td>
<td>KTMB3-1900A</td>
</tr>
<tr>
<td>HUFP100 (before F301437)</td>
<td>KTMB3-1600A</td>
</tr>
</tbody>
</table>

Continued HUPF models are printed italic.

Explanation of date code:
The date code format that printed on the label is in the format: F3yydd.
F3 indicates a regulator.
yyy are the year (yy) and the day (dd).
Example: F301235. This is a HUFP produced on day 123 in the year 2009.

Filter Cartridges

<table>
<thead>
<tr>
<th>Filter Cartridges</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUFP015/020/025 (current)</td>
<td>KTF3-2100A</td>
</tr>
<tr>
<td>HUFP032/040 (current)</td>
<td>KTF3-2200A</td>
</tr>
<tr>
<td>HUFP050B (current)</td>
<td>KTF3-2300A</td>
</tr>
<tr>
<td>HUFP065B (before F300877) and for HUFP080B (before F300297)</td>
<td>KTF3-2400A</td>
</tr>
<tr>
<td>HUFP065B/080B/100B (current)</td>
<td>KTF3-2500A</td>
</tr>
<tr>
<td>HUFP100 (before F301437)</td>
<td>KTF3-2600A</td>
</tr>
</tbody>
</table>

Product Label

Location of Date Code on product label HUFP

EN1C-0003NL01 R1110
Capacity curves of HUPF series with regulator in stable position
(m³/h natural gas at 1013mbar, 15°C)