High Performance Coriolis Mass-Flow Meter

for LOW FLOW Applications

HPC

- Precise measurements for very small measuring ranges
- Up to 4 measuring coils
- Vibration resistant
- Very robust flow body
- Variable housing and mounting concept

Function

The coriolis mass flow meter HPC is working acc. the coriolis principle. Mass Flow, density and temperature are being measured simultaneously. The volume flow can be calculated out this measurements. HPC mass flow sensors are only available with remote transmitter.

Application

For the measurement of very small flow rates it is common practice to use single pipe coriolis flow meters. However, with the use of just one measuring pipe the influence of external interferences increases dramatically, often necessitating a costly decoupling.

The HPC uses a dual bent pipe measuring system. Furthermore the sensor coils are not mounted on the measuring pipes anymore rather than between the pipes. This provides the sensor with a significantly noise-reduced and predictable dynamic behavior, capable of working at higher frequencies, so further decoupling the sensor measurement from external vibrations.

With these characteristics the HPC coriolis sensor is therefore not only extremely accurate, but also particular resistant against external interferences. The sensor is therefore very good suited for very low flow measurements for all applications for nearly all fluids.
Technical Data

**Sensor**

Process connection: G1/2 AG, ½ NPT(F), Gyrolok 6/8/10 mm, Swagelok 6/10/12 mm
Nominal pressure: PN100 / PN 320 / PN 400
Process temperature: -40°C … +180°C
Ambient temperature: -20°C … +60°C
Protection: IP 65 (EN60529)

**Materials**

Measuring pipes: 1.4571 (316 TI)
Flow body: 1.4404 (316 L)
Secondary containment Aluminum, st.st.
Wetted parts measuring pipes 1.4571 (316 TI), flow body 1.4404 (316 L)

**Measuring ranges**

<table>
<thead>
<tr>
<th></th>
<th>HPC-S01</th>
<th>HPC-S02</th>
<th>HPC-S03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating</td>
<td>0-20 kg/h</td>
<td>0-50 kg/h</td>
<td>0-160 kg/h</td>
</tr>
<tr>
<td>P @ Qmax</td>
<td>0,25 bar</td>
<td>0,20 bar</td>
<td>1,13 bar</td>
</tr>
</tbody>
</table>

Reference conditions: acc. IEC 770:
Water @ 20°C

**Accuracy**

Liquids: ± 0,1 % of actual ± Z.S.
Gases: ± 0,5 % of actual ± Z.S.
Density (liquids): ± 0,005 g/cm³ incl. density calibration
Volume: ± 0,2 % of actual ± Z.S.
Zero stability: ±0,02 % of Qmax

**CE-Marking:**

EMV-guide line 2004/108/EG
EN 61000-6-3:2001 Störaussendung
EN 61000-6-2:1999 Störfestigkeit
Ex-guide line 94/9/EG

Electrical connection: Plug ODU Mini-Snap®, IP 68 (up to 80°C process temp.)
Plug Harting HAN® R23 (100-180°C process temp.)
Cable: 8 pole c/w plug

**Transmitter**

Model: UMC4
Power supply: 19 - 36 VDC, 90 - 265 VAC
Outputs: galvanically sealed
Analog output: 2 x 4-20 mA, passive (for Ex intrinsically safe or non intrinsically safe)
Communications HART®
Analog output 1 Mass flow, volume flow, density, temperature
Analog output 2: Mass flow, volume flow, density, temperature

Binary output 1: Adjustable as pulse of frequency output
Pulse output:
- Pulse width: standard 50 ms
- adjustable from 0,1….2000 ms
- Pulse-break value 1:1 if adjusted pulse time falls short of

Pulse-Value adjustements
- 1 pulse / unit
- adjustable from 0,001-100,0
- (in decade steps of the selected pulse unit)

Frequency output adjustments:
- max. 1 KHz
- passive, via opto coupler,
- \( U_{\text{max}} = 30 \text{ V} \)
- \( I_{\text{max}} = 60 \text{ mA} \)

As binary output 2:
- For forward flow, backward flow, MIN/MAX flow,

As Status output:
- MIN/MAX Density, MIN/MAX, temp. alarm
- second pulse output (90° phase shifted)
- passive, via opto coupler,
- \( U_{\text{max}} = 30 \text{ V} \)
- \( I_{\text{max}} = 60 \text{ mA} \)

Dimensions / Weights

Inline- und wall mounting

Desk-Version meas. pipes pointing upwards
Model DN kg [lbs] kg [lbs]
HPC-S01 G1/2 / 1/2 NPT 1,8 [4,0]
HPC-S02 G1/2 / 1/2 NPT 1,8 [4,0]
HPC-S03 G1/2 / 1/2 NPT 1,8 [4,0] 4,5 [9,9]

More information towards HPC can be found under www.heinrichs.eu
Subject to modifications

Desk Version measuring. pipes pointing downwards

High temperature version.