# High Performance
# Coriolis Mass-Flow Meter

### for LOW FLOW Applications

## HPC

- Precise measurements for very small measuring ranges
- 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: | ½ NPT(F), G1/2 AG, Gyrolok/Swagelok 6/8/10/12 mm |
| Nominal pressure: | PN100 / PN 320 / PN 400 |
| Process temperature: | -40°C … +180°C |
| Ambient temperature: | -20°C … +60°C |
| Explosion proof : | ATEX 19ATEX2096X BV / IECEx CML 19.0025X<br>**Standard**<br>II 1 G / II 1 D Ex ia IIC T4 Ga / Ex ia IIIC T135°C Da,<br>Tamb -40…+60°C<br>**High temperatur**<br>II 1 G / II 1 D/ II 2 D Ex ia IIC T4-T2 Ga /<br>Ex ia IIC T135°C Da / Ex ia IIC T190°C/T240°C Db<br>Tamb -40…+60°C |
| Protection: | IP 65 (EN60529) |

### Materials

| | |
|---|---|
| Measuring pipes: | 1.4571 (316 TI) |
| Flow body: | 1.4404 (316 L) |
| Secondary containment: | Aluminum, st.st. |

### Measuring ranges

| | | |
|---|---|---|
| HPC-S01 | 0-20 kg/h | △P @ Qmax = 0,8 bar |
| HPC-S02 | 0-50 kg/h | △P @ Qmax = 0,20 bar |
| HPC-S03 | 0-160 kg/h | △P @ Qmax = 1,13 bar |

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

### Accuracy

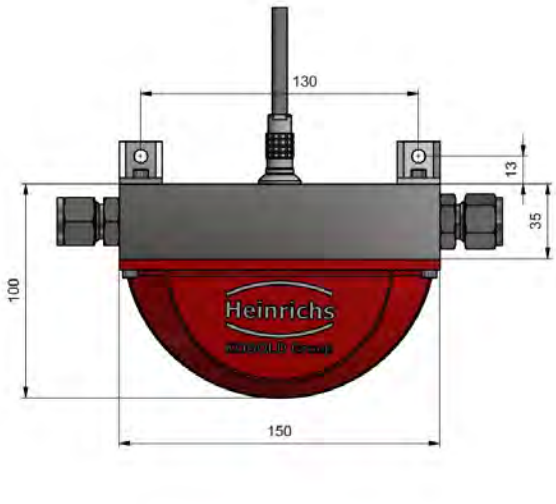
| | |
|---|---|
| Liquids: | ± 0,1 % of actual ± Z.S. |
| Gases: | ± 0,5 % of actual ± Z.S. |
| Density (liquids): | ± 0,005 g/cm³ incl. density calibration |
| Volume:<br>(dependant of transmitter) | ± 0,2 % of actual ± Z.S. |
| Zero stability: | ±0,02 % of Qmax |
| CE-Marking: | EMV-guide line 2004/108/EG<br>EN 61000-6-3:2001 interference emission<br>EN 61000-6-2:1999 interference immunity<br>Ex-guide line 94/9/EG |
| Electrical connection: | Plug ODU Mini-Snap®, IP 68 (up to 80°C process temp.)<br>Plug Harting HAN® R23 (100-180°C process temp.)<br>Cable: 8 pole c/w plug |

## Transmitter

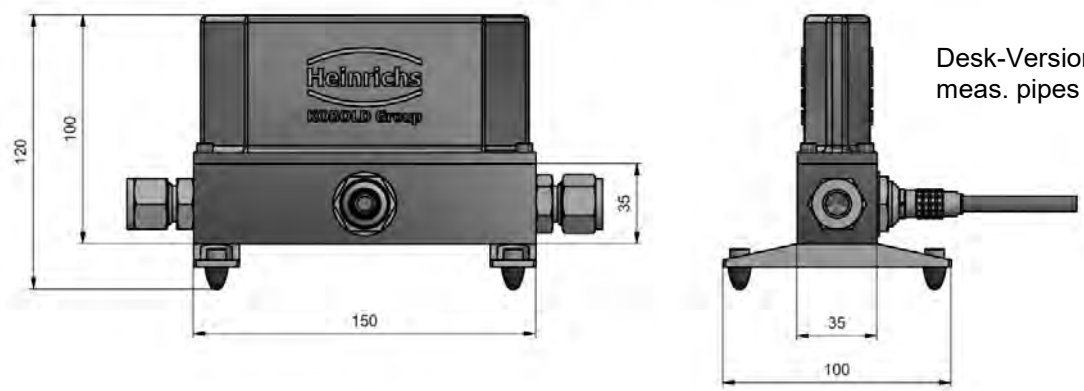
| | |
|---|---|
| **Model:** | **UMC4** |
| Power supply: | 19 - 36 VDC,<br>90 - 265 VAC |
| Outputs: | galvanically isolated |
| ATEX/IEC-Ex: | II(1)2G Ex d [ia Ga] IIC T3-T4 Gb (terminal compartment Ex d),<br>Tamb: -20…+60°C |

| | |
|---|---|
| Analog output: | 2 x 4-20 mA, passive<br>(for Ex intrinsically safe or not 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<br>adjustable from 0,1….2000 ms<br>Pulse-break value 1:1 if adjusted pulse time falls short of |
| Pulse-Value adjustments: | 1 pulse / unit<br>adjustable from 0,001-100,0<br>(in decade steps of the selected pulse unit) |
| Frequency output adjustments: | max. 1 KHz<br>passive, via optocoupler,<br>$U_{max}$=30 V<br>$I_{max}$=60mA |
| As binary output 2: | For forward flow, backward flow, MIN/MAX flow, |
| As Status output: | MIN/MAX Density, MIN/MAX, temp. Alarm<br>second pulse output (90° phase shifted)<br>passive, via opto coupler,<br>$U_{max}$=30 V<br>Imax=60mA |

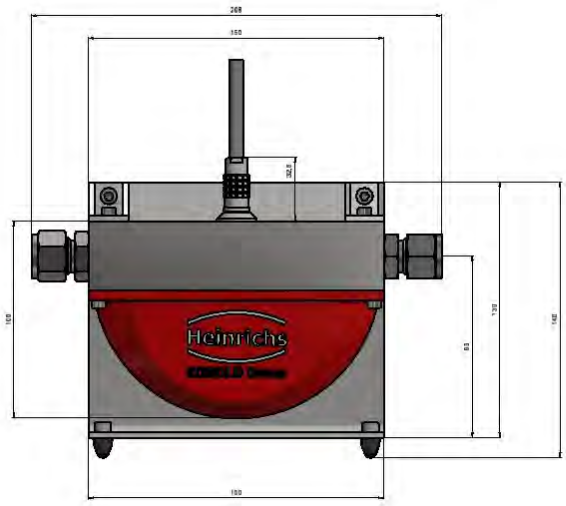
**Dimensions / Weights**

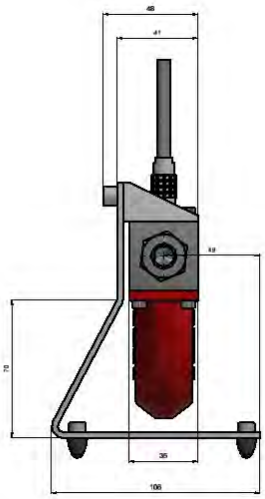



Inline- and wall mounting

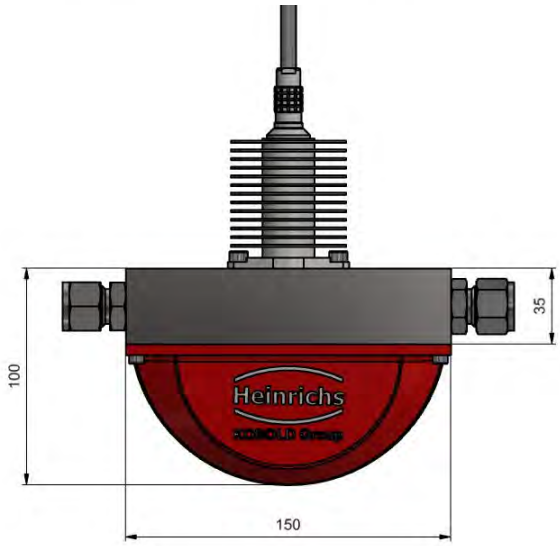


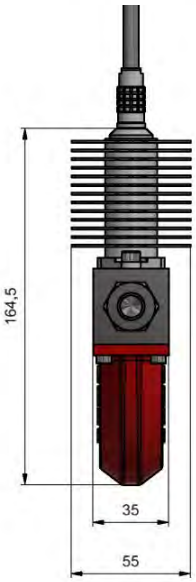

Desk-Version
meas. pipes pointing upwards



Desk Version
measuring. pipes pointing down-wards




High temperature version

| | | Weight | |
|---|---|---|---|
| | | Sensor | Transmitter (UMC4) |
| **Model** | **DN** | kg [lbs] | kg [lbs] |
| HPC-S01 | 1/2" NPT (f) | 1,8 [4,0] | |
| HPC-S02 | 1/2" NPT (f) | 1,8 [4,0] | |
| HPC-S03 | 1/2" NPT (f) | 1,8 [4,0] | 4,5 [9,9] |

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

Heinrichs Messtechnik GmbH

Postfach 600260
D-50682 Köln

Robert-Perthel-Straße 9
D-50739 Köln

Tel. +49-221-49708-0
Fax +49-221-49708-178

www.heinrichs.eu
info@heinrichs.eu