

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 particularly 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, 1/2 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

HPC-S01	0-20 kg/h	$\Delta P @ Q_{max} = 0,25 \text{ bar}$
HPC-S02	0-50 kg/h	$\Delta P @ Q_{max} = 0,20 \text{ bar}$
HPC-S03	0-160 kg/h	$\Delta P @ Q_{max} = 1,13 \text{ bar}$

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

Accuracy

Liquids: $\pm 0,1 \%$ of actual $\pm Z.S.$
 Gases: $\pm 0,5 \%$ of actual $\pm Z.S.$
 Density (liquids): $\pm 0,005 \text{ g/cm}^3$ incl. density calibration

Volume:
 (dependant of transmitter) $\pm 0,2 \%$ of actual $\pm Z.S.$

Zero stability: $\pm 0,02 \%$ of Q_{max}

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

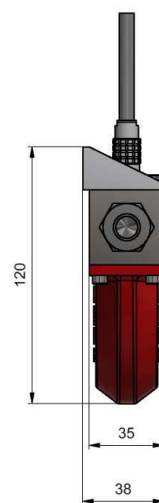
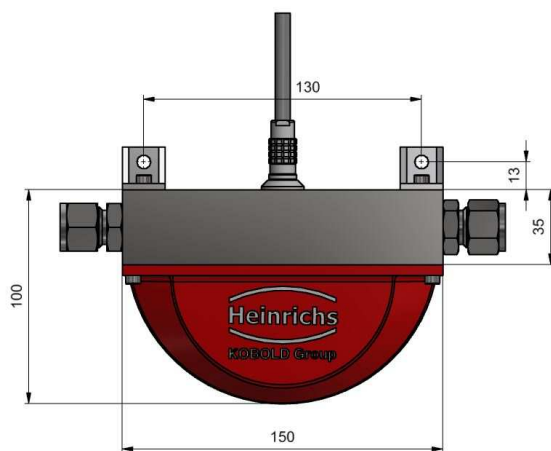
Transmitter

	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

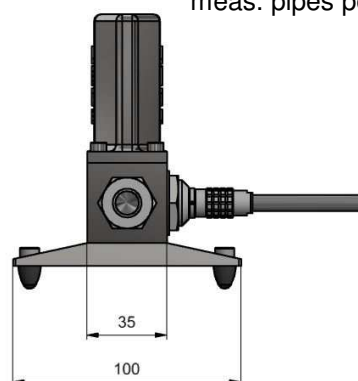
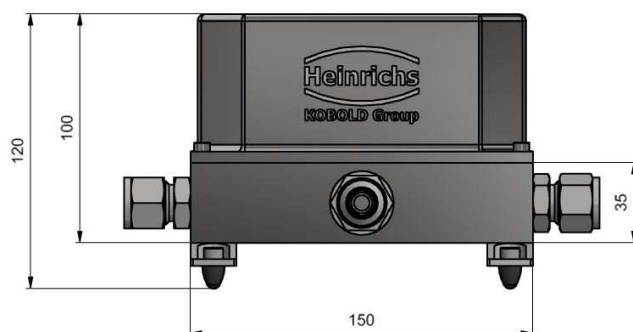


Analog output 2	Mass flow, volume flow, density, temperature
Binary output 1: Pulse output:	Adjustable as pulse of frequency output Pulse width: standard 50 ms adjustable from 0,1...2000 ms Pulse-break value 1:1 if adjusted pulse time falls short of
Pulse-Value adjustments	1 pulse / unit adjustable from 0,001-100,0 (in decade steps of the selected pulse unit)
Frequency output adjustments:	max. 1 KHz passive, via opto coupler, $U_{max}=30\text{ V}$ $I_{max}=60\text{ mA}$
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, $U_{max}=30\text{ V}$ $I_{max}=60\text{ mA}$

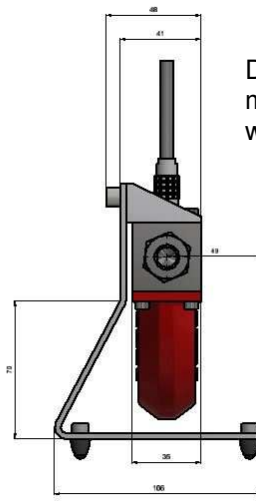
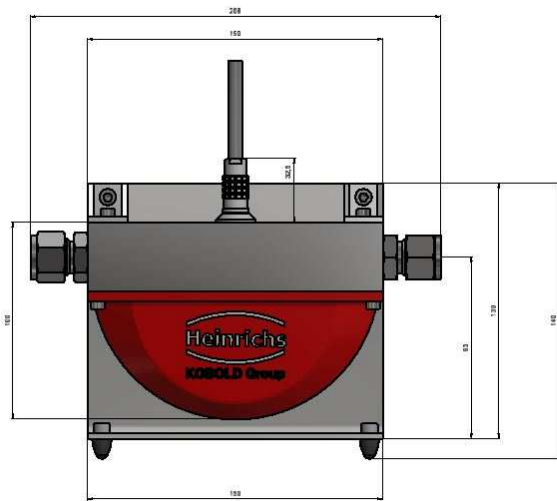
Dimensions / Weights



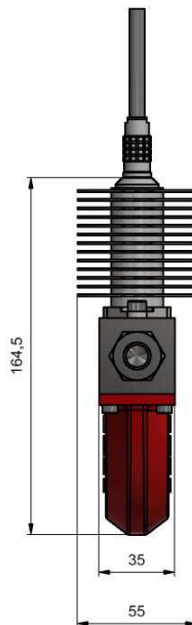
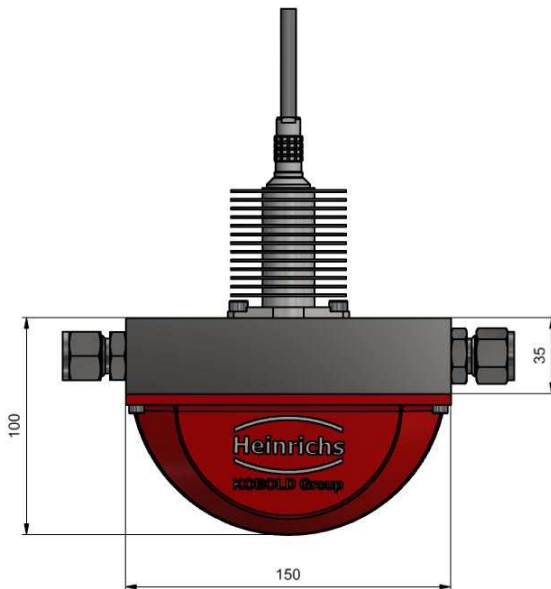
Inline- und wall mounting



Desk-Version
meas. pipes pointing upwards



Desk Version
measuring. pipes pointing down-
wards



High temperature version.

		Weight	
Model	DN	Sensor	Transmitter (UMC3/4)
		kg [lbs]	kg [lbs]
HPC-S01	G1/2 / 1/2 NPT	1,8 [4,0]	4,5 [9,9]
HPC-S02	G1/2 / 1/2 NPT	1,8 [4,0]	
HPC-S03	G1/2 / 1/2 NPT	1,8 [4,0]	

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