

RHM 80

Large Coriolis Mass Flowmeter

The RHM 80 can measure flow rates up to 480 t/h (17,637 lb/min) with temperatures in excess of 280°C and pressures up to 198 bar. This large sized model is also appropriate for tough application conditions.



Applications

- Loading of boats, vessels, rail tank wagons
- High temperatures and other challenging applications
- Highly viscous media (low pressure drop and excellent performance at low flow conditions)

Features

- Suitable for pressure up to 198 bar
- Flow uncertainty down to 0.15%
- Density uncertainty down to 0.5%
- Repeatability better than 0.05%
- Unique torsion oscillator
- Typical measuring ranges from 200 to 8000 kg/min

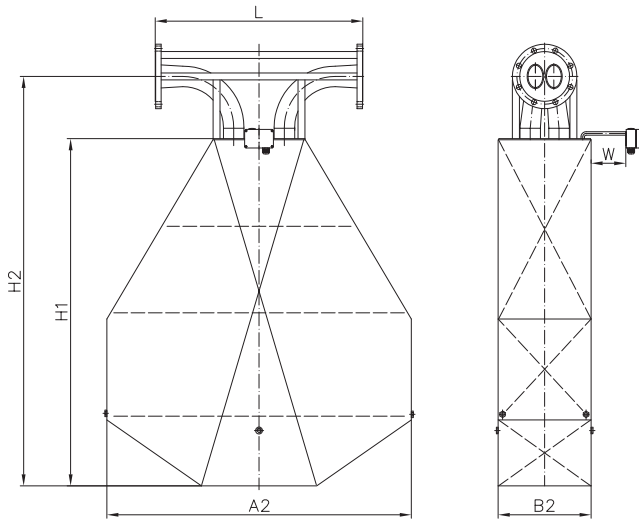
- Minimal flows as low as 130 kg/min
- Customization possible
- Hazardous Area Approvals (ATEX, CSA, ...)

Advantages

- High flow rates for fast filling, in combination with high operating pressure
- Torsion oscillator design assures most stable and basically drift free measurement and increased signal to noise ratio
- Not sensitive to changes in pressure
- Longest life time and increased safety (low stress in welds and increased wall thickness against abrasion)
- No moving parts, practically no maintenance

General Dimensions RHM 80

PFO (parallel, sealless/welded construction with flange connection)



* Flange reduces the maximum allowable tube pressure by a factor of 0.73.

A2 = 1320 mm (51.97 in)
B2 = 403 mm (15.87 in)

H1 = 1505 mm (59.25 in)
H2 = 1775 mm (69.88 in)

Terminal box (without cable gland) 125 x 80 x 58 mm (4.92 x 3.15 x 2.28 in)
W = 150 mm (5.91 in)

Weight with 150# flanges: approx. 380 kg (838 lb)

Shipping in wooden crate as per ISPM 15, approx. 220 x 160 x 90 cm (87 x 63 x 36 in), gross weight with 150# flanges and RHE 08 transmitter approx. 550 kg (1213 lb)

Finish type of our ANSI flanges corresponds to SF (AARH 125 up to 250 µm, Ra 3.2 up to 6.3 µm)

For customization with regard to face to face length and special fittings, please consult your local agent

Process Connection	Face to face length (L)		Order Code	
	mm	in		
Standard	Flange DIN DN150/PN16	900	35.43	D1
	Flange DIN DN150/PN40	900	35.43	D2
	Flange ANSI 6" 150# RF/SF	900	35.43	A1
	Flange ANSI 6" 300# RF/SF	900	35.43	A2
	Flange ANSI 6" 600# RF/SF (*)	900	35.43	A3
Optional	Flange DIN DN150/PN100 (*)	900	35.43	D3
	Flange DIN DN200/PN16	900	35.43	D8
	Flange ANSI 6" 900# RF/SF (*)	900	35.43	A7
	Flange ANSI 6" 900# RTJ (*)	900	35.43	R1
	Flange ANSI 6" 1500# RF/SF (*)	900	35.43	A9
	Flange ANSI 6" 1500# RTJ (*)	900	35.43	R2
	Flange ANSI 6" 2500# RTJ (*)	900	35.43	R3
	Flange ANSI 8" 300# RF/SF	900	35.43	A6
	Flange ANSI 10" 300# RF/SF	900	35.43	A8
	Flange JIS RF 10k 150A (6")	900	35.43	J1
	Flange JIS RF 20k 150A (6")	900	35.43	J2

Pressure Rating RHM 80

The maximum pressure (pmax) of a sensor is determined by its weakest part. The weakest part can be the measuring loops (pmax indicated below) or the selected flanges / fittings (for pmax please see respective standard). For optional materials like Alloy C22, wall thickness of measuring loops may change by +/- 10%.

Pmax of P1 measuring pipes

M1 standard material - 1.4571 (316Ti)
OD x WT 88.9 x 4.05 mm (3.5 x 0.159 in)

bar	°C	psi	°F
104	50	1508	122
93	120	1349	248
80	210	1160	410
67	350	972	662

pmax of P1 measuring loops

M3 optional material - 2.4602 (Alloy C22)
OD x WT 88.9 x 4 mm (3.5 x 0.157 in)

bar	°C	psi	°F
141	50	2045	122
125	120	1813	248
106	210	1537	410
89	350	1291	662

pmax of P2 measuring loops

M1 standard material - 1.4571 (316Ti)
OD x WT 88.9 x 6.3 mm (3.5 x 0.248 in)

bar	°C	psi	°F
165	50	2393	122
148	120	2147	248
127	210	1842	410
107	350	1552	662

pmax of P1 measuring loops

62 optional material - 1.4462 (Duplex)
OD x WT 88.9 x 4.05 mm (3.5 x 0.159 in)

bar	°C	psi	°F
198	50	2872	122
174	120	2524	248
152	210	2205	410

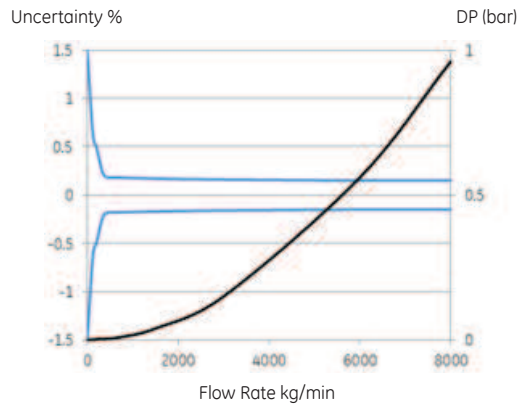
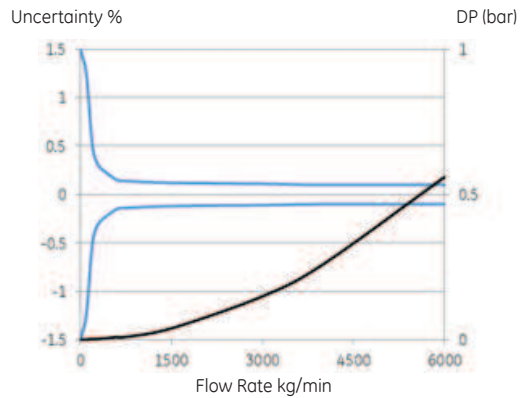
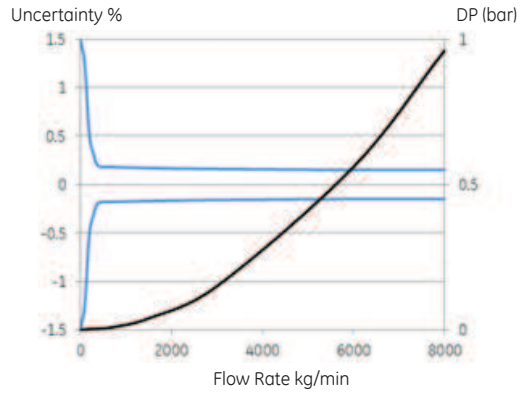
Performance RHM 80

Max Flow Rate Q_{max} = 8000 kg/min (17637 lb/min) and Q_{nom} (*) = 5000 kg/min (11023 lb/min)

Standard Models		
Flow Rate		Uncertainty
kg/min	lb/min	in % of reading
8000	17637	0.20
4000	8818	0.20
1000	2205	0.20
400	882	0.20
200	441	0.50

Goldline Models (**)- selected sensors		
Flow Rate		Uncertainty
kg/min	lb/min	in % of reading
6000	13228	0.15
4500	9921	0.15
3000	6614	0.15
1500	3307	0.15
600	1323	0.15

Low Flow Models (**)- selected sensors		
Flow Rate		Uncertainty
kg/min	lb/min	in % of reading
8000	17637	0.20
2000	4409	0.20
400	882	0.20
200	441	0.50
130	287	0.60



Repeatability

Better $\pm 0.1\%$ of rate,
Goldline 0.05%

Density

Down to 0.5% uncertainty

Temperature

Better $\pm 1^\circ\text{C}$

(*) Nominal flow Q_{nom} refers to roughly 8 - 10 m/s (26 - 33 ft/s) velocity in measuring loops for best performance.

(**) Selected sensors are only available in combination with temperature options T1, TA, standard material and pressure range.

- Uncertainty of reading (incl. zero drift) indications refer to reference conditions H_2O , 18-24°C (66 - 76°F), 1 - 3 bar (15 - 45 psi) and installation according to field manual.
- Pressure drop indications refer to H_2O , with measuring loops type P1.
- For calibration to customer range and / or with improved uncertainty, please consult your local agent.

General Specifications RHM 80

Temperature Range

- NT Models from -20 to +120°C (-4 to +248°F)
- ET Models from -45 to +120°C (-49 to +248°F)
- ET2 Models from -45 to +210°C (-49 to +410°F)
- ET1 Models from -196 to +50°C (-320 to +122°F)
- HT Models from 0 to 350°C (+32 to +662°F)

(Heating for housing optional, please consult your local agent)

Electrical Connection

- Junction box aluminum coated (standard). Junction box in SS 316Ti optional
- Cable entry M25 x 1.5. Optional cable entries M20 x 1.5, 1/2" NPT or 3/4" NPT
- Max cable length between RHM and RHE is 30 m (98 ft.). Optional 100 m (328 ft.), with special cable

Material of Wetted Parts

- 1.4571 / SS 316 Ti / UNS S31635 (standard)
- 2.4602 / Alloy C22 / UNS N06022
- 1.4462 / Duplex / UNS S31803
- Others on request

Sensor Enclosure/Housing

- Stainless Steel 1.4301 / SS 304, optional in 1.4571 / SS 316Ti. Others on request
- Protection Class IP 65. Optional IP 66 / NEMA 4x

Approvals

- ATEX Ex II 1 G, EEx ia IIC T6-T1
- CSA USA-Canada, Class I, Div. 1, Groups A, B, C, D
- PED according to directive 97/23/EC: Module B + C1
- Others on request

Basic Order Code RHM 80

Sensor Size

