

# RHM 100

## Coriolis Mass Flowmeter for High Flow Applications

The RHM 100 can measure flow rates up to 720 t/h (26,455 lb/min) with pressures up to 189 bar. This large sized model is optimal for loading and unloading applications - manufactured by GE's Rheonik mass flowmeter experts.

### Applications

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

### Features

- Suitable for pressure up to 189 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 300 to 12000 kg/min
- Minimal flows as low as 200 kg/min
- Heavy duty version available (increased wall thickness of measuring loops for additional safety)
- Customization possible



- Hazardous Area Approvals (ATEX, CSA, ...)

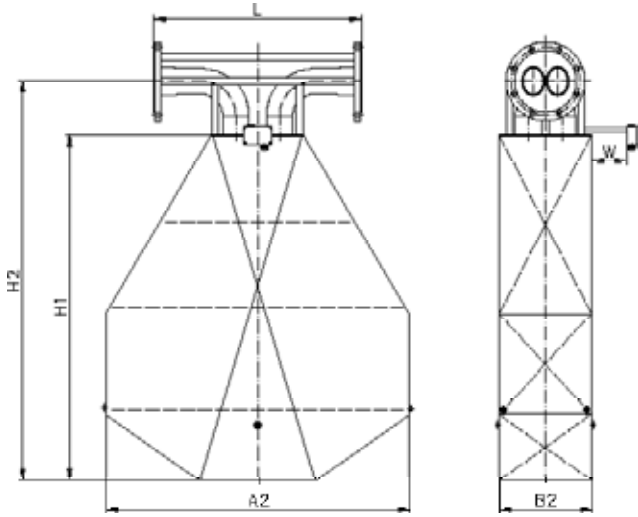
### Advantages

- 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 100

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



	Process Connection	Face to face length (L)		Order Code
		mm	in	
<b>Standard</b>	Flange DIN DN200/PN16	900	35.43	D1
	Flange DIN DN200/PN40	900	35.43	D2
	Flange ANSI 8" 150# RF/SF	900	35.43	A1
	Flange ANSI 8" 300# RF/SF	900	35.43	A2
	Flange ANSI 8" 600# RF/SF (*)	900	35.43	A3
<b>Optional</b>	Flange DIN DN200/PN100 (*)	900	35.43	D3
	Flange ANSI 8" 900# RF/SF (*)	900	35.43	A4
	Flange ANSI 8" 900# RTJ (*)	900	35.43	R3
	Flange ANSI 8" 1500# RF/SF (*)	900	35.43	A5
	Flange ANSI 8" 1500# RTJ (*)	900	35.43	R4
	Flange JIS RF 10k 200A (8")	900	35.43	J1
	Flange JIS RF 20k 200A (8")	900	35.43	J2

(\*) Flange reduces the maximum allowable pipe pressure by a factor of 0.75

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

H1 = 1505 mm (59.25 in)  
H2 = 1735 mm (68.31 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. 520 kg (1146 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. 750 kg (1654 lb)

Finish type of our ANSI flanges corresponds to SF (AARH 125 up to 250 µin, 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

## Pressure Rating RHM 100

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

**p<sub>max</sub> of P0 measuring loops, standard**  
M1 standard material - 1.4571 (316Ti)  
OD x WT 114.3 x 4.5 mm (4.5 x 0.177 in)

bar	°C	psi	°F
73	50	1059	122
66	120	957	248
57	210	827	410

**p<sub>max</sub> of P1 measuring loops**  
M3 optional material - 2.4602 (Alloy C22)  
OD x WT 114.3 x 5 mm (4.5 x 0.197 in)

bar	°C	psi	°F
113	50	1639	122
100	120	1450	248
85	210	1233	410

**p<sub>max</sub> of PA measuring loops**  
M1 standard material - 1.4571 (316Ti)  
OD x WT 114.3 x 6 mm (4.5 x 0.236 in)

bar	°C	psi	°F
99	50	1436	122
88	120	1276	248
76	210	1102	410

**p<sub>max</sub> of PA measuring loops**  
62 optional material - 1.4462 (Duplex)  
OD x WT 114.3 x 6.02 mm (4.5 x 0.237 in)

bar	°C	psi	°F
189	50	2741	122
166	120	2408	248
145	210	2103	410

# Performance RHM 100

Max Flow Rate  $Q_{max}$  = 12,000 kg/min (26,455 lb/min) and  $Q_{nom}$  (\*) = 10,000 kg/min (22,046 lb/min)

Standard Models		
Flow Rate		Uncertainty
kg/min	lb/min	in % of reading
12000	26455	0.20
6000	13228	0.20
3000	6614	0.20
800	1764	0.20
300	661	0.50

Goldline Models (**)- selected sensors		
Flow Rate		Uncertainty
kg/min	lb/min	in % of reading
9000	19842	0.15
7000	15432	0.15
5000	11023	0.15
3000	6614	0.15
1800	3968	0.15

Low Flow Models (**)- selected sensors		
Flow Rate		Uncertainty
kg/min	lb/min	in % of reading
12000	26455	0.20
6000	13228	0.20
800	1764	0.20
300	661	0.50
200	441	0.60

## Repeatability

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

## Density

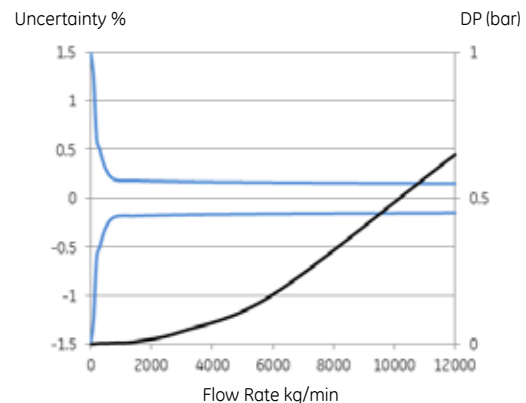
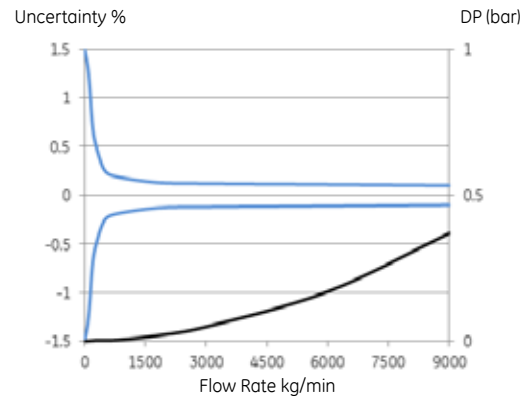
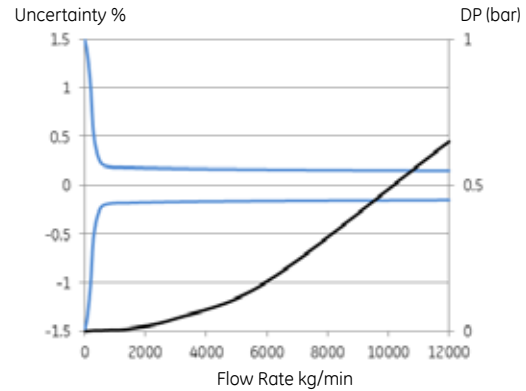
Down to 0.5% uncertainty

## 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  $\text{H}_2\text{O}$ , 18-24°C (66 - 76°F), 1 - 3 bar (15 - 45 psi) and installation according to field manual.
- Calibration at factory only up to 11,000 kg/min.
- Pressure drop indications refer to  $\text{H}_2\text{O}$ , with measuring loops type P0.
- For calibration to customer range and / or with improved uncertainty, please consult your local agent.

# General Specifications RHM 100

## 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)
- (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

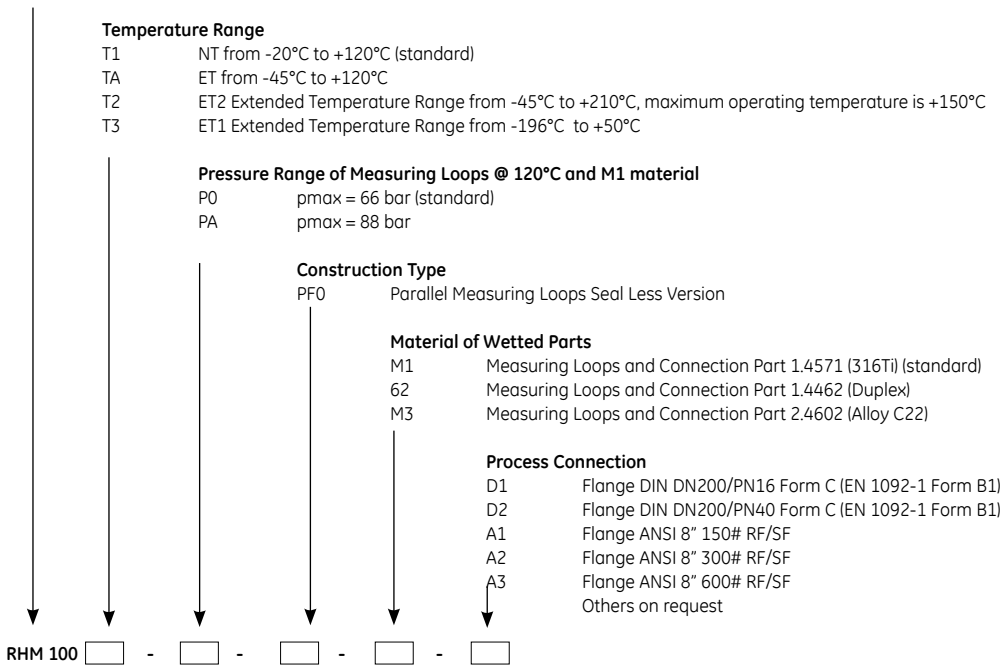
- Stainless Steel 1.4301 / SS 304, optional in 1.4571 / SS 316Ti. Others on request
- Protection Class IP 65. Optional IP 66 / NEMA 4x

## 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 100

## Sensor Size



[www.ge-mcs.com](http://www.ge-mcs.com)

920-504A