

RHM 80 - Coriolis Mass Flowmeter for medium flow applications with corrosive media at high temperature

The RHM 80 can measure flow rates up to 480 t/hr with the patented Omega shape meter technology [manufactured by rheonik](#), the mass flowmeter experts.



GENERAL

The RHM 80 has been designed for medium flow rates and tough application conditions. Optional heavy duty measuring pipes make this meter suitable for applications involving corrosive media at high temperature.

This unique design, which offers excellent performance and reliability, has created the most satisfied customers worldwide. Unlike other mass flowmeter manufacturers, Rheonik uses a patented torsion rod swinger with the Omega shape and support bars which results in high accuracy measurement, which is independent of pressure, even at very low flow velocities. The meter also has extremely good repeatability and high stability for critical applications.

APPLICATIONS

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

FEATURES

- As heavy duty version available (increased wall thickness of measuring pipes for additional safety)
- Patented torsion swinger
- Customer adaptations possible for application optimized solutions
- Typical measuring ranges from 160 to 8000 kg/min
- PTB/NMI custody transfer approved
- EEx Approvals ATEX/CENELEC and CSA

ADVANTAGES

- Accuracy better than 0.2%
- Repeatability better than 0.05%
- High flow rates for fast filling
- Patented torsion swinger design assures most stable and drift free measurement
- Increased signal to noise ration by torsion swinger
- Longest life time and increased safety (low stress in welds and increased wall thickness against abrasion)

PERFORMANCE RHM 80

Max Flow 8000 kg/min (17635 lb/min)

1) Standard Models

Rates /tundown ratio	in kg/min	in lb/min	error in % of reading
nominal rate Q _{nom} :	5000	11025	0.20
0.1 *Q _{max} (5:1)	1600	3528	0.20
0.1 *Q _{max} (10:1)	800	1764	0.20
0.05 *Q _{max} (20:1)	400	880	0.20
0.02 *Q _{max} (50:1)	160	353	0.50

Typical ΔP in bar (psi)		
1 cP	100 cP	1000 cP
0.4 (5.7)	0.8 (11.6)	2.0 (27.8)
0.1 (0.7)	0.1 (1.1)	0.6 (8.4)
~ 0 (0.1)	~ 0 (0.4)	0.2 (2.9)
~ 0 (0)	~ 0 (0.2)	0.1 (2.1)
~ 0 (0)	~ 0 (0.1)	0.1 (0.8)

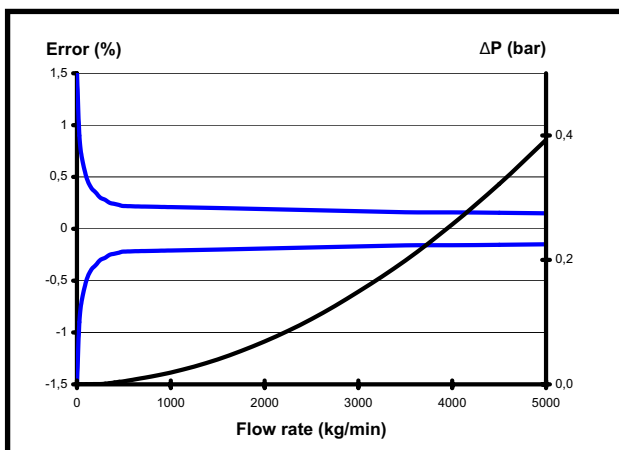
2) Optimized Low Flow Models / optimized to be operated between 0.02 x Q_{max} and 0.4 x Q_{max}

0.4 *Q _{nom} (1:1)	3200	7056	0.20
0.02 *Q _{nom} (20:1)	160	353	0.30

0.2 (2.5)	0.4 (5.3)	1.2 (17.3)
~ 0 (0)	~ 0 (0.1)	0.1 (0.8)

Repeatability better ± 0.05 % of rate
Density better than ± 0.0025 g/cc
Temperature better ± 1°C

Standard Models



*For serial (single pipe/path) sanitary design Q_{max} is 4000 kg/min (50%)
 Error of reading (including zero drift) indications refer to reference conditions H₂O, 18-24°C (66-76°F), 1-3 bar (15-45 psi)
 Pressure drop refers to Newton liquids, with parallel measuring loops and sealless construction
 Nominal flow refers to approx. 10 m/s (33 ft/sec) velocity in measuring loops for best performance
 Calibration to customer range possible*

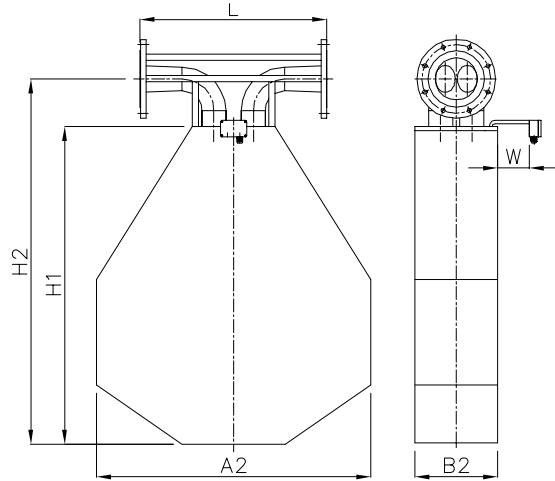
GENERAL DIMENSIONS

The RHM 80

Type II sealless welded parallel measuring loops w/o seals

A2 = 1320 mm (51.96")
B2 = 403 mm (15.86")
H1 = 1505 mm (59.25")
H2 = 1775 mm (69.88")

- Weight: approx. 430 kg (948 lb)
- Shipping box: approx. 2200 x 1590 x 990 mm (86.6 x 62.6 x 40 inch)
- W = 150 mm (5.90")



Process connections	Face to Face Length L
6" / CL 150-600 acc. ANSI B16.5	900 mm (35.43")
DN150 / PN16-40 acc. DIN 2527 - C	900 mm (35.43")

Only our standard process connections are listed. Please contact your local representative for specials.

Temperature rating

- NT Models -20 to +120°C (-4 to +248°F)
- ET1 Models -200 to +50°C (-328 to +122°F)
- ET2 Models -45 to +210°C (-49 to +410°F)
- HT Models 0 to +350°C (32 to +662°F)

Electrical connection

- Junction box /aluminium coated (standard) IP 65 (Nema 4X)
- Junction box in SS on request - IP 65 -
- Cable entry M25 x 1.5 (1/2" and 3/4" NPT optional)
- Max cable length between RHM an RHE: 100 m (330 ft) 200 m (660 ft) only with factory approval

Housing

- Stainless Steel: 1.4301 / SS 304 - other on request -
- Protection class: IP 65 (nema 4X) - higher on request -

Material of wetted parts

- 1.4571 / SS 316Ti
- Other material on request

Pressure rating

- 40 bar @ 120°C (580 psi @ 248°F)
- Optional high pressure version (heavy duty tubes) 100 bar @ 120°C (1450 psi @ 248°F)

Approvals

- ATEX (CESI 02 ATEX 053 X): Ex II 1 G, EEx ia IIC T6-T1
- CSA (220705) Class I, Div 1 and 2 Groups A, B, C and D; Type 3
- Custody Transfer Approvals (PTB 1.32-97027224 and NMI TC 3382)
- PED according to directive 97/23/EC available



For further information please contact your local representative