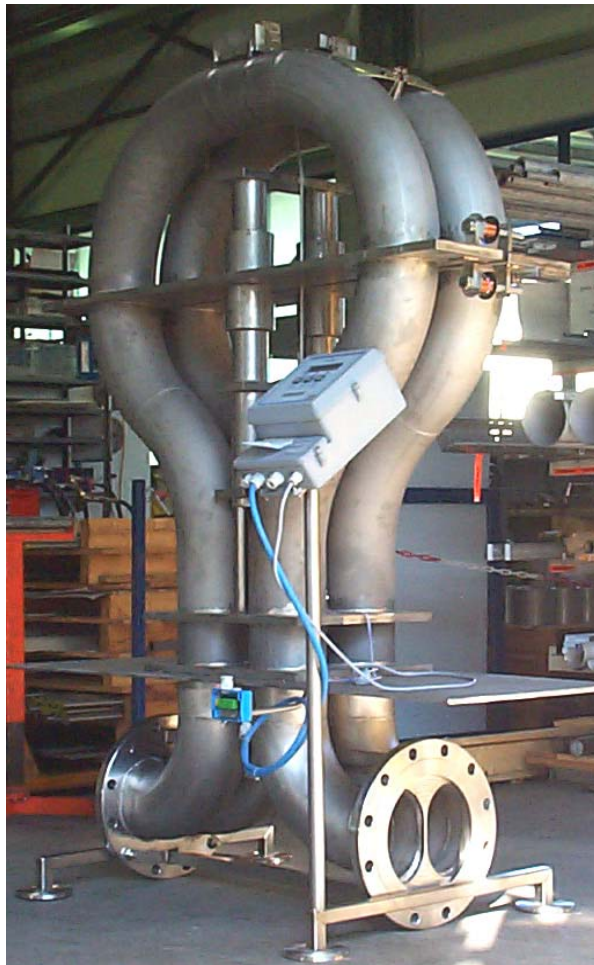


RHM 160 - The world's largest Coriolis Mass Flowmeter for flow rates up to 25000 kg/min

The RHM 160 can measure flow rates up to 1500 t/hr with the patented Omega shape meter technology [manufactured by Rheonik](#), the mass flow meter experts.



GENERAL

The RHM 160 is the world's largest Coriolis Mass Flowmeter which has been designed for very high flow rates or applications which require extremely low pressure drops. With 10" or 12" flanged process connections, this meter can easily be fitted to existing pipe work. 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
- Any other kind of custody transfer measurement
- Highly viscous media (low pressure drop and excellent performance at low flow conditions)
- Oil exploration

FEATURES

- Short face to face length
- Patented Torsion Swinger
- Customer adaptations possible for application optimized solutions
- Typical measuring ranges from 500 to 25.000 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 ratio by torsion swinger
- Longest life time and increased safety (low stress in welds and increased wall thickness against abrasion)
- No moving parts, practically no maintenance

PERFORMANCE RHM 160

Max Flow 25000 kg/min (55115 lb/min)

1) Standard Models

Rates / turndown ratio	in kg/min	in lb/min	error in % of reading
nominal rate Q _{nom} :	23000	50715	0.20
0.2 *Q _{max} (5:1)	5000	11023	0.20
0.1 *Q _{max} (10:1)	2500	5511	0.20
0.05 *Q _{max} (20:1)	1250	2755	0.20
0.02 *Q _{max} (50:1)	500	1102	0.50

Typical ΔP in bar (psi)		
1 cP	100 cP	1000 cP
0.4 (5.6)	0.6 (9.1)	0.8 (11.6)
~0 (0.3)	~0 (0.6)	0.2 (1.9)
~0 (0.1)	~0 (0.2)	~0 (0.9)
~0 (0)	~0 (0)	~0 (0.4)
~0 (0)	~0 (0)	~0 (0.2)

2) Optimized Low Flow Models / optimized to be operated between 0,02 x Q_{max} and 0,4 x Q_{max}

0.4 *Q _{max} (1:1)	10000	22050	0.20
0.02 *Q _{max} (20:1)	500	1102	0.35

0.1 (1.1)	0.2 (1.9)	0.3 (4.2)
~0 (0)	~0 (0)	~0 (0.1)

3) Gold Line Models / application fine tuned meters

1 *Q _{nom} (1:1)	23000	50715	0.10
0.1 *Q _{nom} (10:1)	2300	5072	0.15

0.4 (5.6)	0.6 (9.1)	0.8 (11.6)
~0 (0.1)	~0 (0.2)	~0 (0.8)

Repeatability

better ± 0.05 % of rate

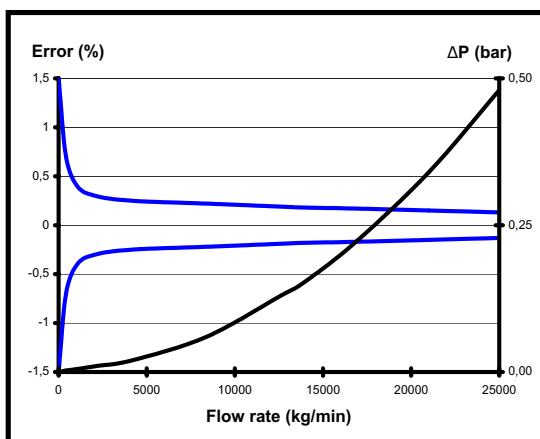
Density

better than ± 0.0025 g/cc - Gold Line: field adjustable to better ± 0.001 g/cc

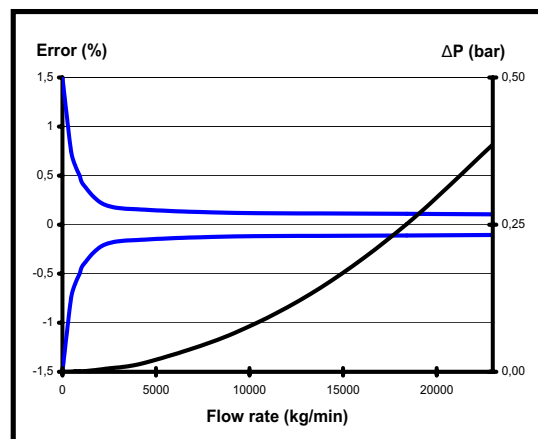
Temperature

better ± 1°C

Standard Models



Gold Line Models



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

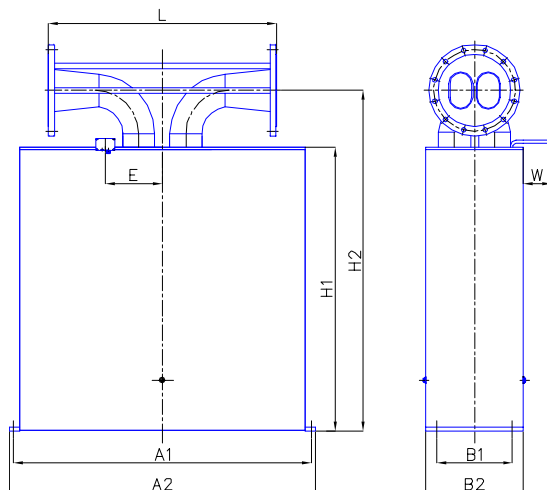
GENERAL DIMENSIONS

The RHM 160

Type II sealless welded parallel measuring loops w/o seals

A1 = 1570 mm (61.81")
A2 = 1610 mm (63.38")
B1 = 400 mm (15.74")
B2 = 520 mm (20.47")
H1 = 1500 mm (59.05")
H2 = 1820 mm (71.65")
E = 300 mm (11.82")
W = 150 mm (5.90")

- Weight:
approx. 650 kg (1435 lb)
- Shipping box:
approx. 2280 x 1940 x 990 mm
(89.7 x 76.4 x 39")



Process connections	Face to Face Length L
10" / CL 150-300 acc. ANSI B16.5	900 mm (35.43")
12" / CL 150-300 acc. ANSI B16.5	1200 mm (47.24")
DN300 / PN16-40 acc. DIN 2527 - C	1200 mm (47.24")

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

Pressure rating

- According to process connections
10" CL 300 - max. 27.5 bar (398 psi)

Temperature rating

- NT Models -20 to +120°C (-4 to +248°F)
- ET Models -45 to +120°C (-49 to +248°F)

Electrical connection

- Junction box / aluminium coated IP 65 (Nema 4X)
- Junction box in SS as an option, IP 65 (Nema 4X)
- Cable entry M25 x 1.5 (½" and ¾" NPT optional)
- Max cable length between RHM and RHE:
100 m (328 ft)
(200 m (655 ft) only with factory approval)

Material of wetted parts

- 1.4571 / SS 316Ti
- Other materials optional

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

Housing

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

