

**NEW**  
from the mass flow experts

**RHEONIK**

# RHM 100 - New Coriolis Mass Flowmeter for High Flow Applications

The RHM 100 can measure up to 720 t/hr with the superior and patented Omega shape meter technology [manufactured by rheonik](#), the mass flowmeter experts.



## **GENERAL**

The RHM 100 has been developed due to the increased demand for high throughput coriolis mass flowmeters. This model has been engineered on proven technology and is fast becoming the number one choice for loading and unloading applications.

This unique design, which offers excellent performance and reliability, has created the most satisfied customers worldwide. Unlike other massflowmeter 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)

## **FEATURES**

- Vast ranges of process connections from DIN to JIS according to customer requirements
- Short face to face length
- Patented Torsion Swinger
- Customer adaptations possible for application optimized solutions
- Typical measuring ranges from 240 to 12.000 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

[www.rheonik.de](http://www.rheonik.de) - the mass flowmeter experts

## PERFORMANCE RHM 100

Max Flow 12000 kg/min (26455 lb/min)

### 1) Standard Models

Rates / turndown ratio	in kg/min	in lb/min	error in % of reading
nominal rate Q <sub>nom</sub> :	10000	22050	0.20
0.2 *Q <sub>max</sub> (5: 1)	2400	5291	0.20
0.1 *Q <sub>max</sub> (10:1)	1200	2645	0.20
0.05 *Q <sub>max</sub> (20:1)	600	1322	0.20
0.02 *Q <sub>max</sub> (50:1)	240	530	0.50

Typical ΔP in bar (psi)		
1 cP	100 cP	1000 cP
0.5 (6.9)	0.9 (12.9)	1.5 (21.7)
~0 (0.4)	0.1 (1.0)	0.3 (4.8)
~0 (0.1)	~0 (0.3)	0.2 (2.4)
~0 (0)	~0 (0.1)	0.1 (1.2)
~0 (0)	~0 (0)	~0 (0.4)

### 2) Optimized Low Flow Models / optimized to be operated between 0,02 x Q<sub>max</sub> and 0,4 x Q<sub>max</sub>

0.4 *Q <sub>max</sub> ( 1:1)	4800	10584	0.20
0.02 *Q <sub>max</sub> (20:1)	240	529	0.25

0.1 (1.7)	0.2 (3.5)	0.7 (9.6)
~0 (0)	~0 (0)	~ 0 (0.4)

### 3) Gold Line Models / application fine tuned meters

1 *Q <sub>nom</sub> ( 1:1)	10000	22050	0.10
0.2 *Q <sub>nom</sub> ( 5:1)	2000	4410	0.12
0.1 *Q <sub>nom</sub> (10:1)	1000	2205	0.15

0.5 (6.9)	0.9 (12.9)	1.5 (21.7)
~0 (0.3)	0.1 (0.6)	0.3 (3.9)
~0 (0)	~0 (0)	0.1 (1.9)

**Repeatability**

better ± 0.05 % of actual rate

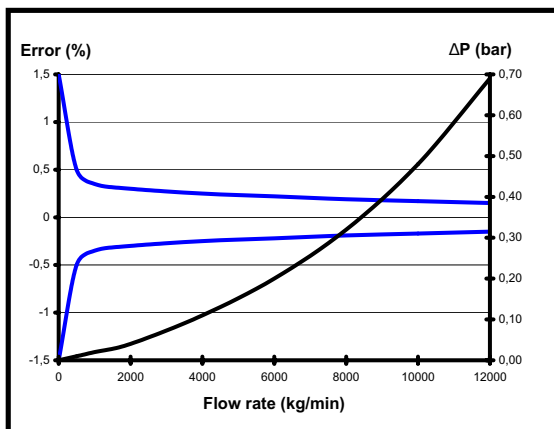
**Density**

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

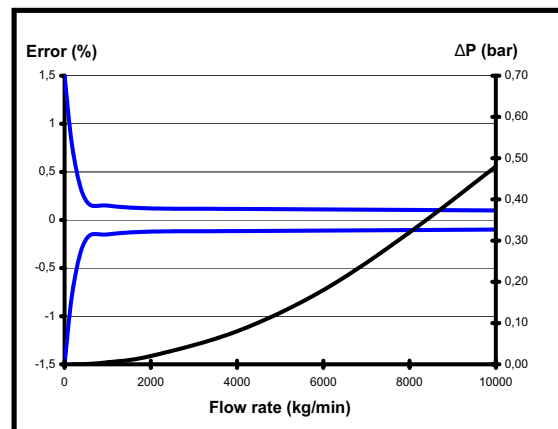
**Temperature**

better ± 1°C

#### Standard Models



#### Gold Line Models



For serial (single pipe/path) sanitary design Q<sub>max</sub> is 6000 kg/min (50%)  
 Error of reading (including zero drift) indications refer to reference conditions H<sub>2</sub>O, 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

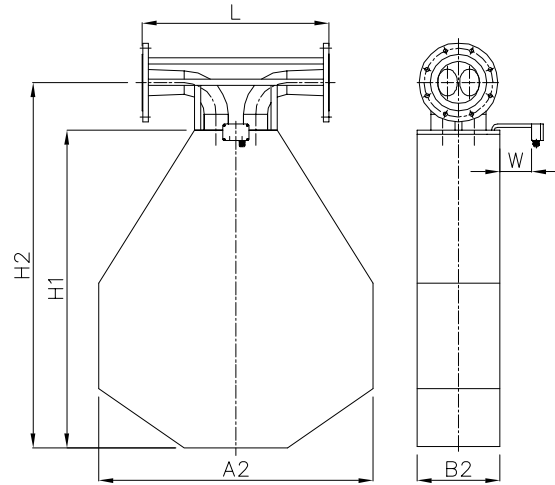
## GENERAL DIMENSIONS

### The RHM 100

Type II sealless welded parallel measuring loops w/o seals

A2 = 1320 mm (51.97")
B2 = 403 mm (15.86")
H1 = 1505 mm (59.25")
H2 = 1735 mm (68.30")
W = 150 mm (5.90")

- Weight:  
approx. 550 kg (1200 lb)
- Shipping box:  
approx. 2200 x 1590 x 990 mm  
(86,6 x 62,6 x 40 inch)



Process connections	Face to Face Length L
8" / CL 150 acc. ANSI B16.5	900 mm (35.43")
8" / CL 300 acc. ANSI B16.5	900 mm (35.43")
8" / CL 600 acc. ANSI B16.5 on request	900 mm (35.43")
DN200 / PN16 acc. DIN 2527 - C	900 mm (35.43")
DN200 / PN40 acc. DIN 2527 - C	900 mm (35.43")

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

#### Pressure rating

- According to process connections tube rating 100 bar (1450 psi)

#### Temperature rating

- NT Models -20 to +120°C (-4 to +248°F)
- ET Models -200 to +50°C (-328 to +122°F)
- ET2 Models -45 to +210°C (-49 to +302°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

