

RHM 08 - A standard Coriolis Mass Flowmeter serving thousands of worldwide applications

The RHM 08 can measure flow rates up to 50 kg/min (110 lb/min) with temperatures in excess of 400°C and pressures to 570 bar. This model has true reliability for a versatile solution, [manufactured by Rheonik](#), the mass flowmeter experts.



GENERAL

The RHM 08 is one of Rheonik's most popular meters. With flow measurement up to 50 kg/min and the large number of model variants available, this meter is suitable for many applications.

As with all other Rheonik meters, this model is based on the patented Omega design with increased signal to noise ratio.

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 has also extremely good repeatability and high stability for critical applications.

APPLICATIONS

Suitable for virtually any mass flow application such as:

- Batching
- Dosing
- General flow control
- Injections
- Filling

FEATURES

The outstanding features include:

- Suitable for pressure up to 570 bar
- Nominal measuring ranges from 0.5 kg/min to 50 kg/min
- Minimal flows as low as 0.25 kg/min
- Accuracy better than 0.1%
- Repeatability better than 0.05%
- Optimised solutions for your batching operation
- Extra compact design with minimal space requirement –ideal for CNG applications–

ADVANTAGES

- No pressure effect – no deterioration of accuracy due to pressure changes by the patented Omega Shape
- Patented torsion swinger design assures longest life time and increased safety (low stress in welds and increased wall thickness against abrasion)
- No moving parts – practically no maintenance
- Removable connection block
- EEx Approvals

PERFORMANCE RHM 08

Max Flow 50 kg/min (110 lb/min)

1) Standard Models

Rates / turndown ratio	in kg/min	in lb/min	error in % of reading
nominal rate Q _{nom} :	50.00	110.25	0.20
0.2 *Q _{nom} (5:1)	10.00	22.05	0.20
0.1 *Q _{nom} (10:1)	5.00	11.03	0.20
0.05 *Q _{nom} (20:1)	2.50	5.51	0.20
0.02 *Q _{nom} (50:1)	1.00	2.21	0.50

Typical ΔP in bar (psi)		
1 cP	100 cP	1000 cP
1.2 (16.8)	4.1 (58.8)	37.8 (550.8)
0.1 (0.9)	0.8 (11.1)	7.5 (109.5)
~0 (0.2)	0.4 (5.5)	3.8 (54.8)
~0 (0.1)	0.2 (2.7)	1.9 (27.4)
~0 (0)	0.1 (1.1)	0.8 (10.9)

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)	20.00	44.10	0.20
0.02 *Q _{max} (20:1)	1.00	2.21	0.30

0.2 (3.2)	1.6 (22.5)	15.1 (219.3)
~0 (0)	~0.1 (1.1)	0.8 (10.9)

(*) serial/single path version offers the same accuracy at half the flow - 0.2% @ 0.5 kg/min

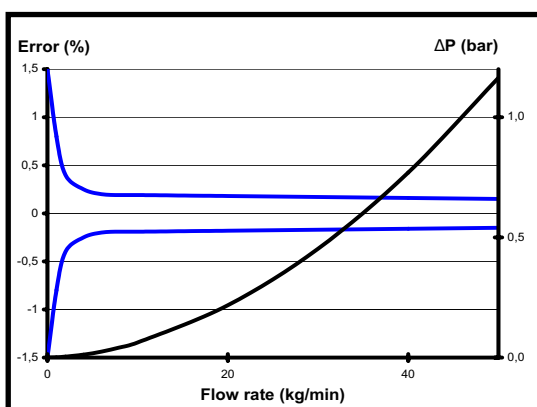
3) Gold Line Models / application fine tuned meters

1 *Q _{nom} (1:1)	50.00	110.25	0.10
0.2 *Q _{nom} (5:1)	10.00	22.05	0.12
0.1 *Q _{nom} (10:1)	5.00	11.03	0.15

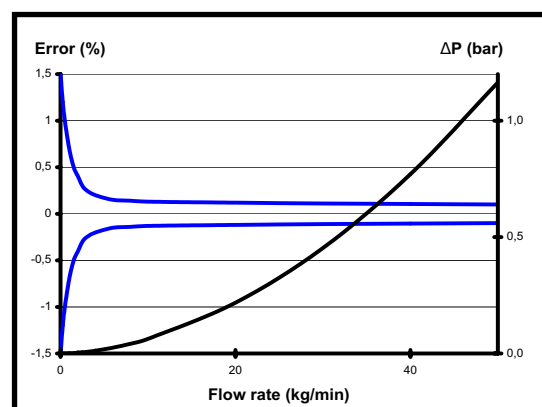
1.2 (16.8)	4.1 (58.8)	37.8 (550.8)
0.1 (0.9)	0.8 (11.1)	7.5 (109.5)
~0 (0.2)	0.4 (5.5)	3.8 (54.8)

Repeatability better ± 0.05 % of rate
Density better than ± 0.005 g/cc
Temperature better ± 1°C

Standard Models



Gold Line Models

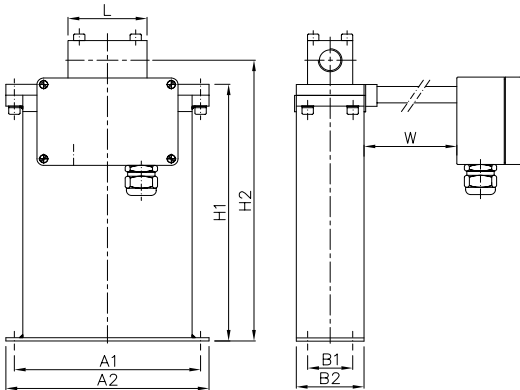


For serial (single pipe/path) sanitary design Q_{max} is 25 kg/min (50%)
 Error of reading (including zero drift) indications refer to reference conditions H₂O, 18-24°C (66-76°F), 1-3 bar (15-45 psi)
 Pressure drop refers to Newton liquids, with parallel measuring loops and block/manifold connection (low pressure drop version)
 Nominal flow refers to approx. 10 m/s (33 ft/sec) velocity in measuring loops for best performance
 Calibration to customer range possible

GENERAL OUTLINE DIMENSIONS RHM 08

Type I (w/ removable manifold block - serial/parallel / PTFE seals)

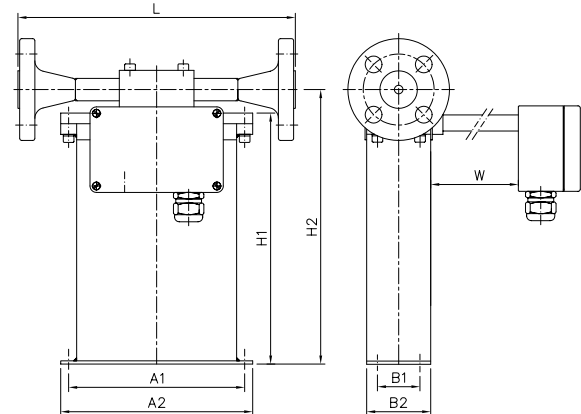
thread type:



Weight approx. 5kg (11 lb)

A1=165 mm (6.50")
A2=180 mm (7.09")

flange type:



Weight approx. 8kg (18 lb)

B1=40 mm (1.58")
B2=60 mm (2.36")

H1=234 mm (9.21")
H2=255 mm (10.04")

W= 0 mm for standard temperature models -20 to + 120°C (-4 to + 248°F)
= 150 mm (5.90") for extended and high temperature models

Process Connection for thread type		Face to face length (L)
Standard	G ½" female	70 mm (2.76")
	NPT ½" female	70 mm (2.76")
Optional	Autoclave (MP)	120 mm (4.73")

Process Connection for flange type		Face to face length (L)
Standard	1" / CL 150 acc. ANSI B16.5	260 mm (10.24")
	1" / CL 300 acc. ANSI B16.5	260 mm (10.24")
	1" / CL 600 acc. ANSI B16.5	300 mm (11.82")
	DN25 / PN40 acc. DIN 2635 - C	260 mm (10.24")
	DN25 / PN100 acc. DIN 2637 - E	300 mm (11.82")
Optional	1" / CL 900 acc. ANSI B16.5	350 mm (13.78")
	1" / CL 1500 acc. ANSI B16.5	350 mm (13.78")
	1" / CL 2500 acc. ANSI B16.5	350 mm (13.78")
	DN25 / PN160 acc. DIN 2638 - E	300 mm (11.82")
Specials	Different sized flanges	please consult factory
	1" Graylock or equivalent hubbs	please consult factory
	Swagelok	customized
	Novaswiss	customized

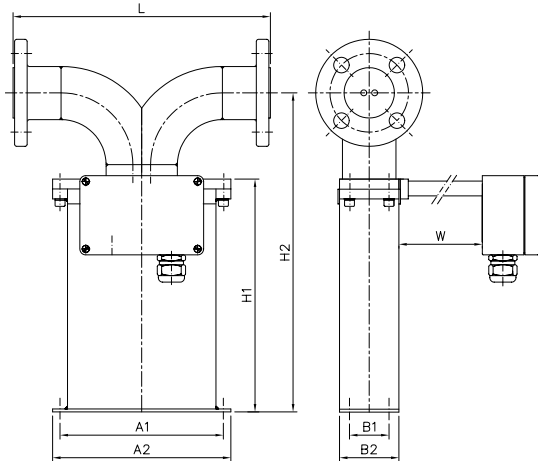
Our standard seals are PTFE - Manifold block on request available without seals but with brazed connection
Above table only shows our general process fittings
For further customization with regard to special fittings and face to face length please contact your local agent
For high pressure applications (above 400 bar) connection block face to face dimension will be 120 mm (4.73")

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GENERAL OUTLINE DIMENSIONS RHM 08

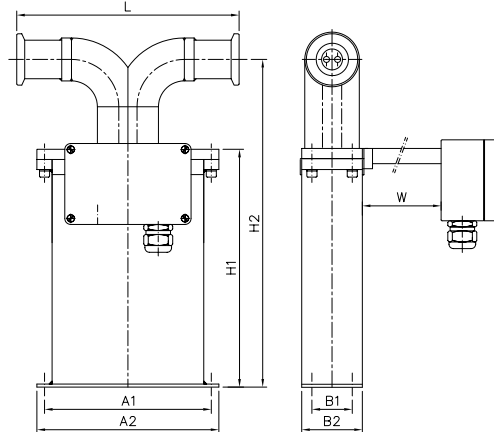
Type II (sealless welded, parallel measuring loops w/o seals)

flange type:



Weight approx. 8kg (18 lb)

special fittings:



Weight approx. 8kg (18 lb)

A1=165 mm (6.50")
A2=180 mm (7.09")

B1=40 mm (1.58")
B2=60 mm (2.36")

H1=234 mm (9.21")
H2=322 mm (12.68")

W= 0 mm for standard temperature models -20 to + 120°C (-4 to + 248°F)
= 150 mm (5.90") for extended and high temperature models

Process Connection		Face to face length (L)
Standard	1" / CL 150 acc. ANSI B16.5	260 mm (10.24")
	1" / CL 300 acc. ANSI B16.5	260 mm (10.24")
	1" / CL 600 acc. ANSI B16.5	300 mm (11.82")
	DN25 / PN40 acc. DIN 2527 - C	260 mm (10.24")
	DN25 / PN100 acc. DIN 2527 - E	300 mm (11.82")
Optional	1" / CL 900 acc. ANSI B16.5	300 mm (11.82")
	1" / CL 1500 acc. ANSI B16.5	300 mm (11.82")
	1" / CL 2500 acc. ANSI B16.5	300 mm (11.82")
	DN25 / PN160 acc. DIN 2527 - E	300 mm (11.82")
Specials	DN25 / PN250 acc. DIN 2527 - E	300 mm (11.82")
	DN25 / PN325 acc. DIN 2527 - E	300 mm (11.82")
	Different sized threads	please consult factory
	Different sized flanges	please consult factory
	1" Graylock or equivalent hubbs	please consult factory

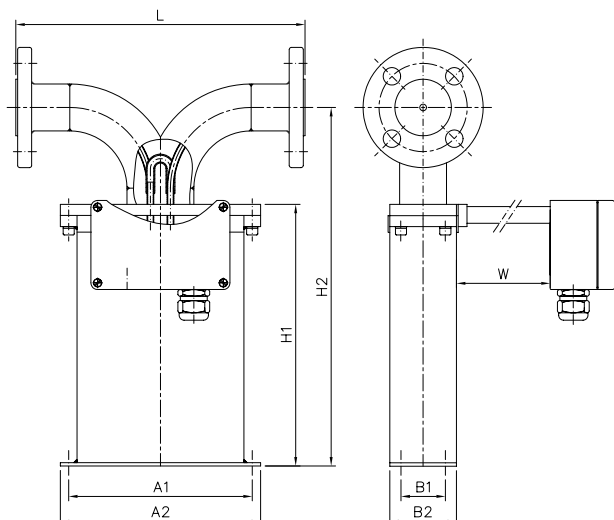
Above table only shows our general process fittings
For further customization with regard to special fittings and face to face length please contact your local agent

GENERAL OUTLINE DIMENSIONS RHM 08

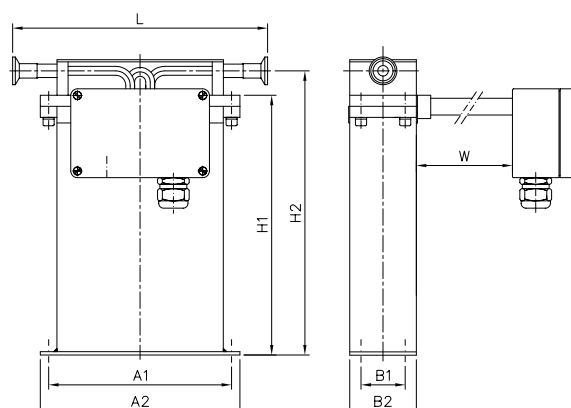
Type III (sealless welded, serial measuring loops w/o seals)

flange type:

special/sanitary fittings:



Weight approx. 8kg (18 lb)



Weight approx. 6kg (13 lb)

A1=165 mm (6.50")
A2=180 mm (7.09")

B1=40 mm (1.58")
B2=60 mm (2.36")

H1=234 mm (9.21")
H2=255 mm (10.04") for flange type
H2=322 mm (12.68") for other types

W= 0 mm if standard temperature class -20 to + 120°C (-4 to + 248°F)
= 150 mm (5.90") for extended temperature models

	Process Connection	Face to face length (L)
Sanitary fittings	½" / Sanitary Tri Clamp acc. DIN 32676	230 mm (9.06")
	DN10 / Sanitary acc. DIN 11851	230 mm (9.06")
	Neumo DN15 / PN60	250 mm (9.84")
Flange	½" / CL 150 acc. ANSI B16.5	260 mm (10.24")
	½" / CL 300 acc. ANSI B16.5	260 mm (10.24")
	DN15 / PN40 acc. DIN 2527 - C	260 mm (10.24")
Optional	¾" / CL 150 acc. ANSI B16.5	260 mm (10.24")
	1" / CL 150 acc. ANSI B16.5	260 mm (10.24")
	1" / CL 300 acc. ANSI B16.5	260 mm (10.24")
	DN25 / PN40 acc. DIN 2527 - C	260 mm (10.24")
Specials	Swagelok ½" VCR male	233 mm (9.18")
	Swagelok ¾" VCR male	233 mm (9.18")

Above table only shows our general process fittings
For further customization with regard to special fittings and face to face length please contact your local agent

GENERAL SPECIFICATIONS RHM 08

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)
- VHT Models 0 to +400°C (+32 to +752°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
(½" and ¾" NPT optional)
- Max cable length between RHM and RHE:
100 m (330 ft)
200 m (660 ft) only with factory approval

Housing

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

Material of wetted parts

- 1.4571 / SS 316Ti (standard)
- 1.4539 / SS 904L on request
- Hastelloy C22 on request
- Tantalum on request
- Other materials optional as a special design

Pressure rating

- 290 bar @ 120°C (4205 psi @ 248°F)
- higher pressure on request -
- Optional low ΔP version with
140 bar @ 120°C (2030 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