RHEONIK

Part of GE's Sensing &
Inspection Technologies business

RHM CNG

The Specialized Coriolis Mass Flowmeter for Compressed Natural Gas

The RHM CNG is proven technology, which has been used in 1000's of CNG dispensers. This model provides a true solution to car and truck fueling applications, by Rheonik, the mass flowmeter experts.

Applications

- Meter for CNG Dispensers
- Any other kind of CNG measurement

Features

- Suitable for pressure up to 650 bar
- Nominal measuring ranges from 0.5 kg/min to 100 kg/min
- Minimal flows as low as 0.25 kg/min
- Optimised solutions for truck and passenger car fillings
- Accuracy better than 0.5%
- Optimised versions with accuracy better than 0.35%
- Repeatability better than 0.1%
- High flow rates for fast filling
- Extra compact design with minimal space requirement for better dispenser layout

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
- Better spare part concept/modularity
- PTB custody transfer approved
- EEx Approvals
- Double Impulse output available for high end dispenser

General

The RHM CNG has been in production for over 10 years and is the first choice for many CNG dispenser manufacturers. The vast number of successful installations make this meter a true proven technology.

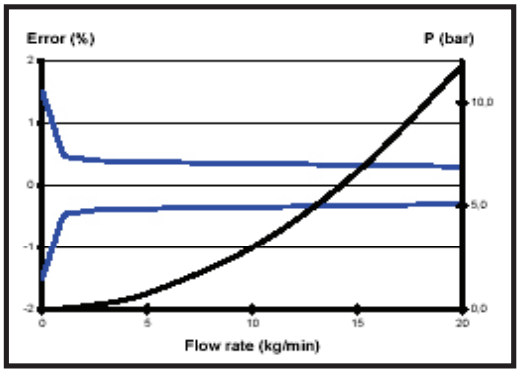
This unique design, which offers excellent performance and reliability, has created the most satisfied customers worldwide. Unlike other mass flowmeter manufacturers, Rheonik uses a patented torsion rod swinger with the Omega shape and support bars which results in high accuracy measurement, which is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

Rheonik also offers special partnership packages for CNG dispenser manufacturers. These packages cover customized designs through to partial manufacturing of components by the dispenser manufacturers. This close co-operation enables the dispenser manufacturer to optimise dispenser efficiency and performance, economically.

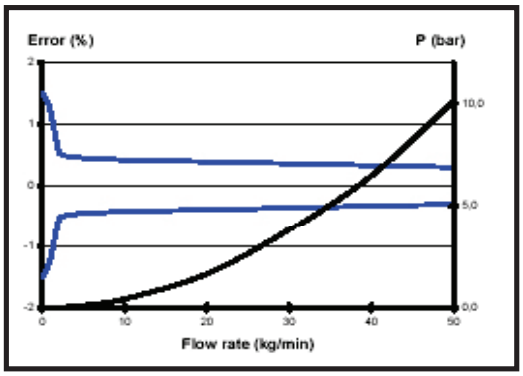
CNG Specifications

Performance Rheonik Mass Flowmeters CNG

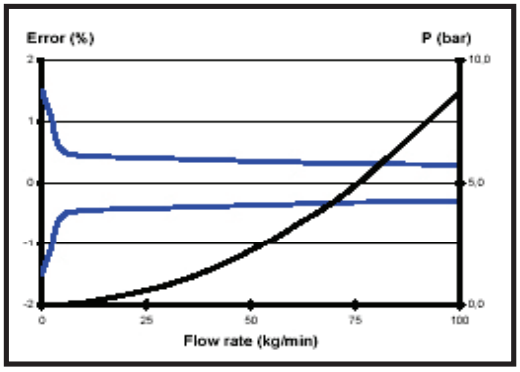
RHM 06 - Max Flow 25 kg/min (55 lb/min)			
Rates/turndown ratio	in (kg/min)	in (lb/min)	error in % of reading
nominal rate Q_{nom}	20.00	44.10	0.50
0.2 * Q_{nom} (5:1)	4.00	8.82	0.50
0.1 * Q_{nom} (10:1)	2.00	4.41	0.50
0.05 *Q_{nom} (25:1)	0.80	1.76	0.50
0.02 *Q_{nom} (50:1)	0.40	0.88	0.75
0.01 *Q_{nom} (100:1)	0.20	0.44	1.50



RHM 12 - Max Flow 100 kg/min (220 lb/min)			
Rates/turndown ratio	in (kg/min)	in (lb/min)	error in % of reading
nominal rate Q_{nom}	75.00	110.25	0.50
0.2 * Q_{nom} (5:1)	10.00	22.05	0.50
0.1 * Q_{nom} (10:1)	5.00	11.03	0.50
0.05 *Q_{nom} (25:1)	2.00	4.41	0.50
0.02 *Q_{nom} (50:1)	1.00	2.21	1.00
0.01 *Q_{nom} (100:1)	0.50	1.10	1.50



RHM 12 - Max Flow 100 kg/min (220 lb/min)			
Rates/turndown ratio	in (kg/min)	in (lb/min)	error in % of reading
nominal rate Q_{nom}	75.00	165.38	0.50
0.2 * Q_{nom} (5:1)	15.00	33.08	0.50
0.1 * Q_{nom} (10:1)	7.50	16.54	0.50
0.05 *Q_{nom} (25:1)	3.00	6.62	0.50
0.02 *Q_{nom} (50:1)	1.50	3.31	1.00
0.01 *Q_{nom} (100:1)	0.75	1.65	1.50



Repeatability better ± 0.2 % of rate
Temperature better ± 1°C (33.8°F)

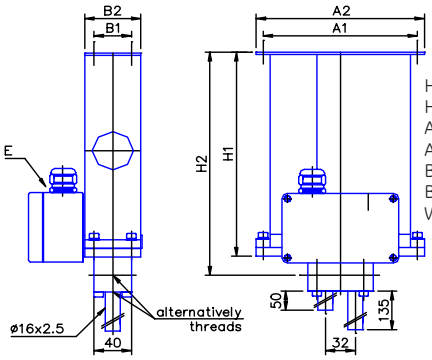
Error of reading (including zero drift) indications refer to reference conditions CNG, 15°C (59°F), 280 bar to 300 bar (4060 psi to 4350 psi) and batch filling.

Nominal flow refers to approx. 60 m/s to 70 m/s (195 ft/s to 230 ft/s) velocity in measuring loops for best performance.

Calibration to customer range and increased accuracy of 0.35% possible.

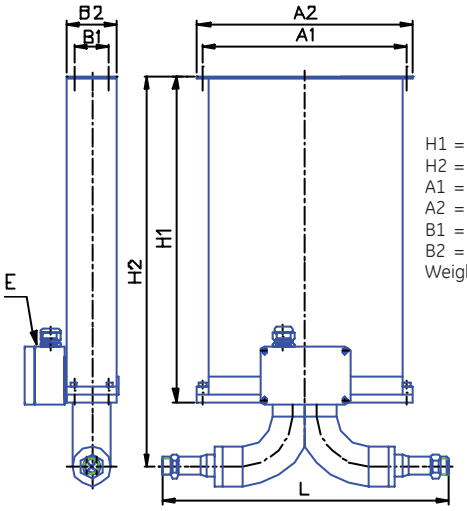
General Dimensions

RHM 06/08 CNG



H1 = 235 mm (9.25 in)
H2 = 255 mm (10.04 in)
A1 = 165 mm (6.50 in)
A2 = 180 mm (7.09 in)
B1 = 40 mm (1.57 in)
B2 = 60 mm (2.37 in)
Weight approx.8 kg (18 lb)

RHM 12 CNG



H1 = 454 mm (17.88 in)
H2 = 540 mm (21.16 in)
A1 = 285 mm (11.22 in)
A2 = 300 mm (11.81 in)
B1 = 50 mm (1.97 in)
B2 = 70 mm (2.76 in)
Weight approx.18 kg (39 lb)

Process Connection		Face to Face Length L
RHM 06/08	Open pipe ends 16 x 2.5 mm (see drawing)	70 mm (2.76 in)
	Female thread G ½ in (horizontal)	70 mm (2.76 in)
	Female thread NPT ½ in (horizontal)	70 mm (2.76 in)
	Female thread NPT ½ in (vertical)	70 mm (2.76 in)
	VCR/Swagelock	260 mm (10.24 in)
RHM 12	¾ in NPTmale	400 mm (15.75 in)
	VCR/Swagelock	400 mm (15.75 in)

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

General Specifications

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

Electrical Connection
- Junction box/aluminium coated IP 65 (Nema 4X)
- Cable entry M25 x 1.5 (½ in and ¾ in NPT optional)
- Max cable length between RHM and RHE: 100 m (330 ft) 200 m (655 ft) only with factory approval

Material of Wetted Parts
1.4571/SS 316Ti

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

Pressure Rating
- 300 bar @ 120°C (4350 psi @ 248°F)
  - higher pressure on request -
  Tube rating generally 400 bar (5800 psi)

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

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