



RHM 06

Coriolis Mass Flow Meter for Batching Filling and Accurate Measurement

General Flow Control • Additive Dosing • Mixing and Batching
Chemical Injection • Package and Container Filling

Datasheet

V02.00

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Features



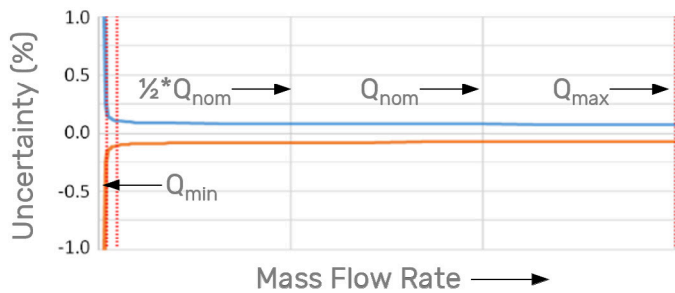
- Typical measuring range up to 36 kg/min (79.37 lb/min)
- Pressure ratings up to 1722 bar (24975 psi)
- Temperature ratings from -196 °C (-320 °F) to +350 °C (+662°F). Extended temperature ranges on request.
- Mass flow uncertainty down to 0.05%
- Repeatability down to 0.05%
- 4 kHz measurement updates when used with RHE40 series transmitters
- Accurately measure flow rates down to 100 g/min
- The Rheonik **AnyPipeFit Commitment** provides custom process connection type and size flexibility on any meter to suit your existing plant, saving time and expense on installation costs
- Compact design with minimal pipeline footprint
- Approved for use in hazardous areas
- SS 304 Stainless steel enclosure, SS 316L optional
- Integral and remote transmitter versions available

General specification overview

Nominal Flow (Q _{nom})*	25 kg/min (55.1 lb/min)
Maximum Flow (Q _{max})*	36 kg/min (79.4 lb/min)
Typical Minimum Flow (Q _{min})*	0.1 kg/min (0.22 lb/min)
Serial Tube / Single Path	Flow rates Q _{max} , Q _{nom} and Q _{min} for "serial" sensors will be 50% of the above listed parallel/dual path version.
Operating Temperature	Fluid temperature range options cover from -196 °C (-320 °F) to +350 °C (+662°F). Extended temperature ranges on request. For integral transmitter versions please refer to transmitter datasheet
Ambient Temperature	Standard -50 °C (-60 °F) to +80 °C (+180 °F). High temperature versions available for oven installation up to +350 °C (+622 °F). Vacuum Chamber versions available for temperatures down to -260 °C (-430 °F).
Pressure Ratings	Up to 1722 bar (24975 psi) – depending on the material
Electrical Connection Sensor w/o Integral Transmitter	M20 x 1.5 standard cable entry for JM, SM terminal box versions Optional entry available : ½" NPT Max. cable length to remote RHE transmitter 100 m/330 ft.
Sensor Housing Materials	SS 304 (standard), SS 316L (optional) Coated aluminum terminal box, SS 316L terminal box (optional)
Housing Type	IECEX tested protection class IP66 (IP66 is mostly equivalent to NEMA 4X) Optional IP66-IP67 (IP67 declared by manufacturer, IP67 is mostly equivalent to NEMA 6)
Wetted Materials	Flow tubes SS 316L, Super Duplex, Alloy C22 Connection blocks SS 316L, seals FKM, FFKM, FVMQ, EPDM, HNBR Standard flanges SS 316Ti, other connections SS 316L Additional/customer specific materials available upon request
Process Connections	Nearly any - The Rheonik AnyPipeFit Commitment covers a wide range of process connections types and sizes. Consult factory for types/sizes not listed in this data sheet on the Mechanical Construction pages
Pressure Rating Compliance	Pressure Equipment Directive (PED). Others (e.g. CRN) on request.
Certifications and Approvals	ATEX / IECEx Approvals Zone 0, 1, 2, refer to Hazardous area certifications, p. 22 North American Approvals Cl. I, Div. 1, 2, Gr. A, B, C, D, Zone 0, 1, 2 Canadian Registration Number (CRN) OIML, MID custody transfer certification DNV, CCS approval for marine applications
Testing and Inspection	All sensors are hydro tested, calibrated and supplied with a traceable calibration certificate. Customized calibration and testing services are available
Project Documentation and QA, Services	Rheonik offers a full set of services for large and complex engineering projects. Typical services offered are, but not limited to: • Certificates of origin and conformity, mill certificates • Data books including WPS-WPQR, WPQ, NDT, test & quality plans, functional testing, calibration procedures, customized packing, factory acceptance etc. • Painting to project specification • Start up and commissioning services on/offshore
Options	Customization services for machine integration available upon request.

* At Q_{nom} pressure drop across a parallel tube sensor will be approximately 1.5 bar (21 psi) for H₂O. Sensors can be operated at higher flow rates up to Q_{max} but pressure drop will be higher. Typical Minimum Flow Q_{min} is the recommended lowest flow rate for an accurate measurement. Sensors will measure flow rates lower than Q_{min} but uncertainty will increase beyond 1% of rate.
The flow rate specifications above relate to standard pressure, parallel tube, connection block sensor versions. Models with higher pressure ratings have increased wall thickness and will have higher pressure drops.

Calibration options, performance data



Order Code	Standard Accuracy Calibration
A	Standard - 0.20% Uncertainty
B	Enhanced - 0.15% Uncertainty

Order Code	Premium Accuracy Calibration
G	Premium - 0.10% Uncertainty
U	Ultimate - 0.05% Uncertainty Requires RHE 40 Series transmitter

Order Code	Focused Calibration
1	0.10% Low Flow Calibration Requires RHE 40 Series transmitter*
X	Customized Calibration ** Consult factory

* Low flow calibration focuses on the range from $\frac{1}{2} * Q_{nom}$ downwards to lower flow rates than on other calibrations. Often used for low pressure gas or very viscous liquids

** customized calibration uses specific calibration points according to customer requirements

Order Code	Density Calibration / Performance (Liquid)
N	No Density Calibration
S	Standard ± 0.001 kg/l Uncertainty
D	Premium ± 0.0005 kg/l Uncertainty Requires High Accuracy or Focused Calibration Option

Reference conditions:

18-24°C Water @ 1-3 bar

Flow Measurement Repeatability

Standard Sensors $\pm 0.1\%$ of rate

Premium Sensors $\pm 0.05\%$ of rate

Uncertainties and flow measurement turn-down

The turn down capability from Q_{nom} of the flow sensor is driven mainly by its zero point stability. At the very low end of the measuring range the uncertainty (u) is dominated by zero point stability.

- Zero point stability of a standard sensor with general accuracy calibration: 0.00086 kg/min (0.0019 lbs/min).
- Zero point stability of a premium sensor with high accuracy or focused calibration: 0.00058 kg/min (0.00128 lbs/min).
- uncertainty = calibration uncertainty, if: flow $\geq$ (zero point stability / (base uncertainty/100))
- uncertainty = (zero point stability/Q)*100, if: flow < (zero point stability / (base uncertainty/100))

Uncertainties from environmental and process conditions

If sensors are not zeroed at operating conditions, minor additional uncertainties can arise from elevated temperatures and pressures:

- ± 0.001074 % of maximum flow per °C
- ± 0.000857 % of maximum flow per bar.

Process temperature effect on density:

- Additional uncertainty of ± 0.000064 g/cm³ per °C difference from calibration temperature with standard density calibration.
- Additional uncertainty of ± 0.000054 g/cm³ per °C difference from calibration temperature with enhanced density calibration.
- This effect can be mitigated by a simple field density adjustment at operating conditions.

Process pressure effect on mass flow:

- The effect of pressure on flow measurement is 0.0001 % of rate per bar. Compensation is possible by pressure sensor input (analog input or digital write) or manual value entry into the transmitter.

Process pressure effect on density:

- The effect of pressure on density measurement is 0.00007 g/cm³ per bar. Compensation is possible by pressure sensor input (analog input or digital write) or manual value entry into the transmitter.

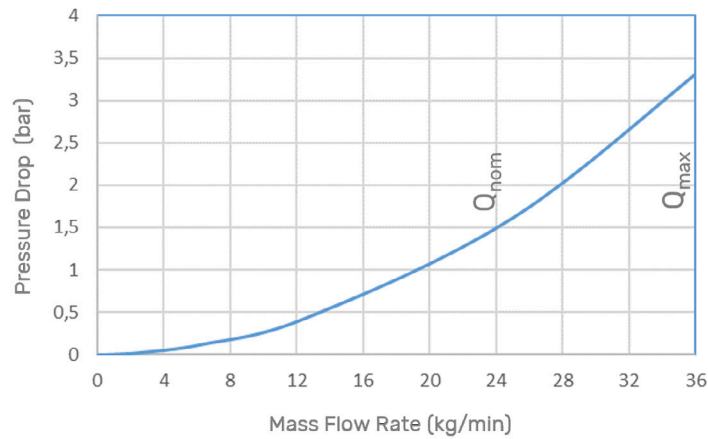
Applying Premium calibration to higher pressure, special materials and/or non-standard temperature models may show higher zero uncertainties (up to 3 times higher than standard sensor).

Temperature Measurement

Better than $\pm 1^\circ\text{C}$

Pressure drop

Every Coriolis flow sensor generates pressure drop across its inlet and outlet when in use. The amount of pressure drop generated is mainly a function of the flow velocity within its tubes and the flowing viscosity of the stream.



Pressure drop vs flow rate for water, sensor with P1 pressure rating. Higher viscosities create higher pressure drop.

Measurement tube materials, pressure ratings

Rheonik Flow sensors are available in various materials. Refer to the table below for details.

The maximum pressure ($p_{\max}$) of a sensor is determined by the part with the lowest pressure rating.

The lowest rated part can be one of the following:

- Measurement tube (for $p_{\max}$ refer to table below)
- Connection block (for $p_{\max}$ refer to [Connection block design with threaded process connections, parallel tube, p. 9](#) and [Connection block design with threaded process connections, serial tube, p. 10.](#))
- Process connection (for $p_{\max}$ refer to corresponding standards or manufacturer information)

If applicable, the material of a connection block is always SS 316L. For sensors in sealless versions, the material of the process connection is usually the same as the material of the measurement tubes. In special cases, the material may differ.

Order Code	Material	$p_{\max}^{**}$	50°C / 122°F	120°C / 248°F	210°C / 410°F	350°C / 662°F
P1	SS 316L (standard)	bar	213	189	160	136
		psi	3089	2741	2321	1972
H1	Alloy C22	bar	300	267	227	189
		psi	4351	3872	3292	2741
P2	SS 316L (standard)	bar	580	516	435	370
		psi	8412	7484	6309	5366
D2	Super Duplex [*]	bar	580	516	435	N/A
		psi	8412	7484	6309	N/A
D3	Super Duplex [*]	bar	910	847	760	N/A
		psi	13198	12285	11023	N/A
D4	Super Duplex [*]	bar	1234	1149	1030	N/A
		psi	17898	16665	14939	N/A
D5	Super Duplex [*]	bar	1722	1603	1438	N/A
		psi	24975	23249	20856	N/A
T1	Tantalum	bar	118	91	74	N/A
		psi	1711	1320	1073	N/A

* Minimum operating temperature for Super Duplex stainless steel is -40 °C

** Maximum pressure may be lower depending on the design type.

Other materials

Other wetted materials are possible for chemical compatibility, lower pressure drop, abrasion allowance, or other application specific requirements. Rheonik can provide nearly any material for the wetted parts.

Contact factory for availability of other exotic materials.

Mechanical construction

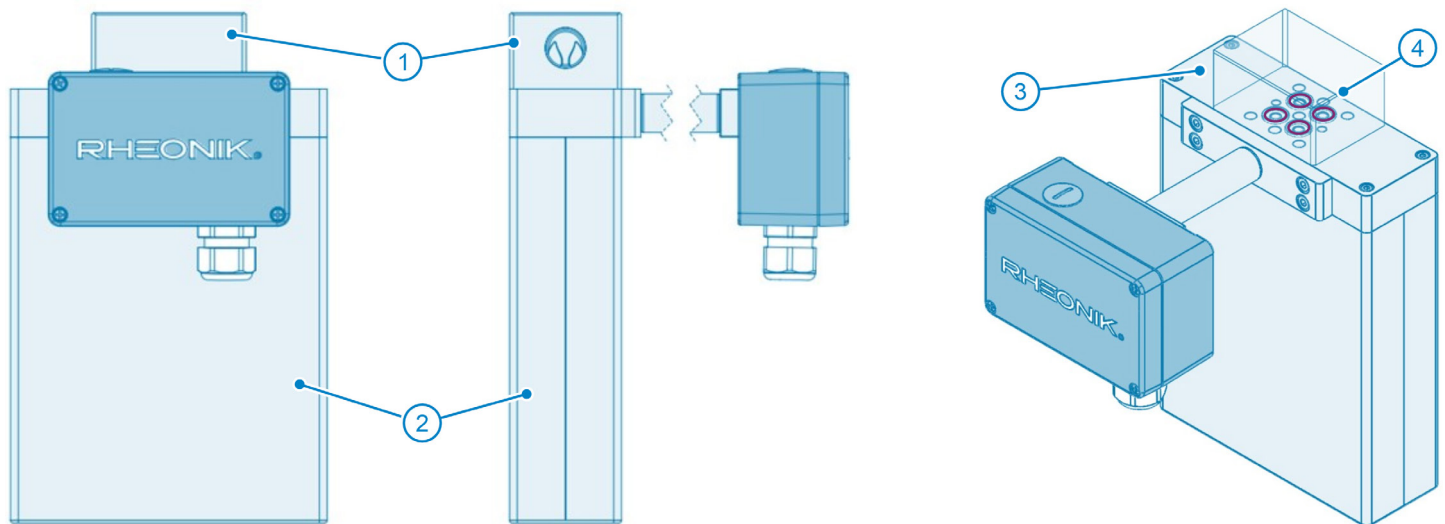
Every sensor contains two internal measurement tubes, which are arranged side by side.

Measurement paths – parallel and serial

- In sensors with a parallel/dual measurement path, the measurement tubes are connected in parallel. The flowing fluid is split equally between both tubes. (Order code Px)
- In sensors with a serial/single measurement path, the measurement tubes are connected end to end via a cross-over. The fluid flows through a single measurement path. (Order code Sx)

Design variants – sealless and Connection block

- In sealless designs, the measurement tubes consist of a single piece between the inlet and the outlet. There are no seals between inlet and outlet.
- Connection block designs have a removable inlet/outlet connection block. There are seals between connection block and sensor body. Connection block designs typically offer shorter delivery lead times. These designs can have a lower pressure drop than sealless designs at the same flow rate.



- 1 Process connection block
- 2 Stainless steel sensor housing
- 3 Sensor body
- 4 Seals (depicted purple, with transparent process connection block)

Note

All dimensions on the following pages apply to products in the standard design. Contact the factory for the following modifications:

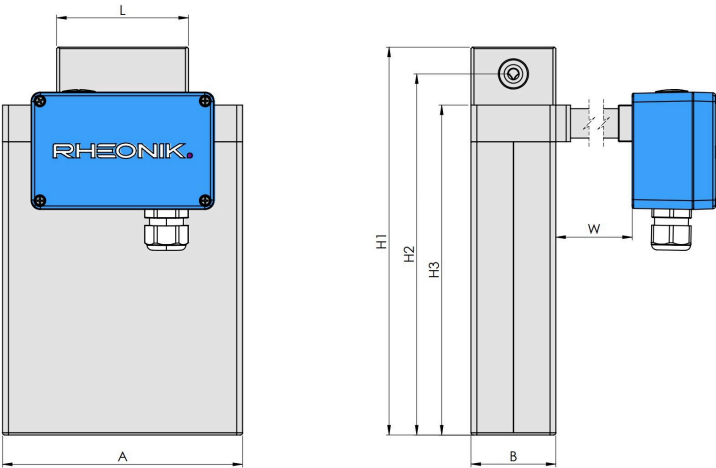
- Customization of the face-to-face length.
- Process connection types not listed on the following pages.

Flange process connections with larger diameters are always possible. The tolerance for the face to face length "L" between the process connections is ± 2 mm.

Connection block design with threaded process connections, parallel tube

Parallel tube / dual measurement path. Standard solution, short delivery time.

Order Codes: PM or PH (for pressures above 700 bar).



Process Connection	Dim. L mm / in	Order Code
Female Thread G 1/2" (order code PM)	80 / 3.15	G03
Female Thread 1/2" NPT (order code PM)	80 / 3.15	N03
Autoclave 9/16" MP – 13/16" – 16 UN Female Thread (order code PH)	90 / 3.54	M02

Dimensions	mm	in
A	164	6.46
B	58	2.28
H1 (order codes PM, PH)	265	10.43
H2	246	9.69
H3	225	8.86
W	Refer to Electrical connection to transmitter compatibility, p. 17	

Connection block pressure ratings @ 120 °C / 248 °F

PM – 700 bar / 10150 psi
PH – 1220 bar / 17695 psi (20000 psi @ 50 °C / 122 °F)

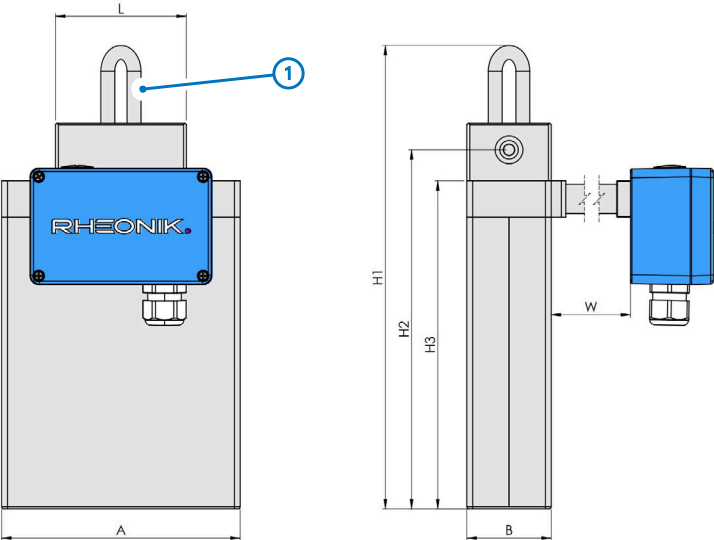
Weights and Shipping Dimensions

- Weight sensor with threads ~6 kg/13.2 lb
- Gross weight with RHE 28 transmitter and packaging: ~12 kg/26.5 lb
- Shipping carton size: ~50 x 50 x 50 cm (20 x 20 x 20 in)

Connection block design with threaded process connections, serial tube

Serial tube / single measurement path. For lowest flow rates and fluids that tend to clog.

Order Codes: SM



Cross-over (1), material: SS 316Ti (SM) / Super Duplex (SH)

Process Connection	Dim. L mm / in	Order Code
Female Thread G 1/2" (order code SM)	90 / 3.54	G03
Female Thread 1/2" NPT (order code SM)	90 / 3.54	N03

Connection block pressure ratings @ 120 °C / 248 °F
SM – 700 bar / 10150 psi

Dimensions	mm	in
A	164	6.64
B	58	2.28
H1 (order codes SM/SH)	318	12.52
H2	246	9.69
H3	225	8.86
W	Refer to Electrical connection to transmitter compatibility, p. 17	

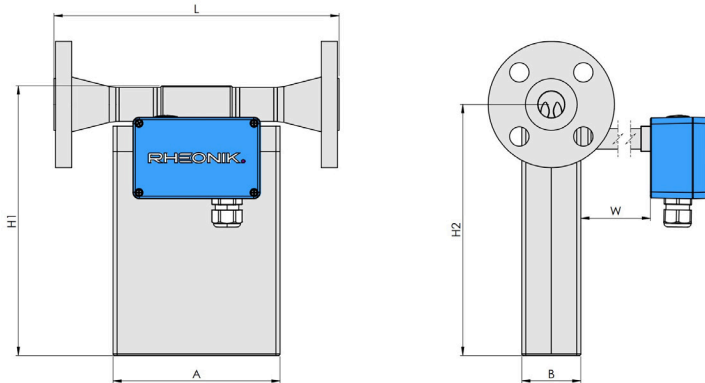
Weights and Shipping Dimensions

- Weight sensor with threads ~6 kg/13.2 lb
- Gross weight with RHE 28 transmitter and packaging: ~12 kg/26.5 lb
- Shipping carton size: ~50 x 50 x 50 cm (20 x 20 x 20 in)

Connection block design with flange process connections, parallel tube

Parallel tube / dual measurement path. Standard solution for flange connections, short delivery time.

Order Code: PM



Process Connection	Dim. L mm / in	Order Code
Standard		
Flange ANSI 1" 150# RF/SF	280 / 11.02	A06
Flange ANSI 1" 300# RF/SF	280 / 11.02	A07
Flange ANSI 1" 600# RF/SF	300 / 11.81	A08
Flange ANSI 1" 1500# RF/SF	340 / 13.39	A09
Flange ANSI 1" 1500# RTJ	340 / 13.39	R05
Flange DIN DN25/PN40 Form B1	280 / 11.02	D04
Flange DIN DN25/PN100 Form B2	300 / 11.81	D06
Flange JIS B 2220 RF 10k 25A (1")	280 / 11.02	J03
Flange JIS B 2220 RF 20k 25A (1")	280 / 11.02	J04

Dimensions	mm	in
A	164	6.46
B	58	2.28
H1 (PM)	265	10.43
H2	246	9.69
W	Refer to Electrical connection to transmitter compatibility, p. 17	

Process Connection	Dim. L mm / in	Order Code
Non-Standard (longer lead times, extra price)		
Flange ANSI ½" 150# RF/SF	260 / 10.24	A01
Flange ANSI ½" 300# RF/SF	260 / 10.24	A02
Flange ANSI ½" 600# RF/SF	280 / 11.02	A03
Flange ANSI ½" 1500# RTJ	320 / 12.60	R02
Flange DIN DN15/PN40 Form B1	280 / 11.02	D01
Flange DIN DN15/PN100 Form B2	280 / 11.02	D02
Flange JIS B 2220 RF 10k 15A (1/2")	260 / 10.24	J01
Flange JIS B 2220 RF 20k 15A (1/2")	260 / 10.24	J02

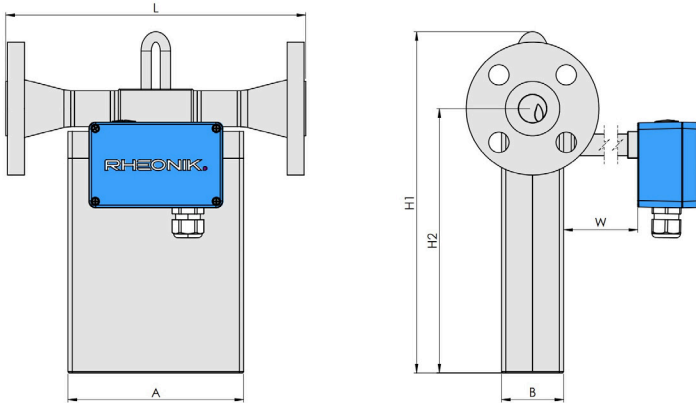
Weights and Shipping Dimensions

- Weight sensor with 1" 150# flanges ~ 8 kg/17.6 lb
- Gross weight with RHE 28 transmitter and packaging: ~14 kg/30.9 lb
- Shipping carton size: ~ 50 x 50 x 50 cm (20 x 20 x 20 in)

Connection block design with flange process connections, serial tube

Serial tube / single measurement path. For lowest flow rates and fluids that tend to clog.

Order Code: SM



Process Connection	Dim. L mm / in	Order Code
Standard		
Flange ANSI 1" 150# RF/SF	280 / 11.02	A06
Flange ANSI 1" 300# RF/SF	280 / 11.02	A07
Flange ANSI 1" 600# RF/SF	300 / 11.81	A08
Flange ANSI 1" 1500# RF/SF	340 / 13.39	A09
Flange ANSI 1" 1500# RTJ	340 / 13.39	R05
Flange DIN DN25/PN40 Form B1	280 / 11.02	D04
Flange DIN DN25/PN100 Form B2	300 / 11.81	D06
Flange JIS B 2220 RF 10k 25A (1")	280 / 11.02	J03
Flange JIS B 2220 RF 20k 25A (1")	280 / 11.02	J04

Dimensions	mm	in
A	164	6.46
B	58	2.28
H1 (SM)	318	12.52
H2	246	9.69
W	Refer to Electrical connection to transmitter compatibility, p. 17	

Process Connection	Dim. L mm / in	Order Code
Non-Standard (longer lead times, extra price)		
Flange ANSI ½" 150# RF/SF	260 / 10.24	A01
Flange ANSI ½" 300# RF/SF	260 / 10.24	A02
Flange ANSI ½" 600# RF/SF	280 / 11.02	A03
Flange ANSI ½" 1500# RTJ	320 / 12.60	R02
Flange DIN DN15/PN40 Form B1	280 / 11.02	D01
Flange DIN DN15/PN100 Form B2	280 / 11.02	D02
Flange JIS B 2220 RF 10k 15A (1/2")	260 / 10.24	J01
Flange JIS B 2220 RF 20k 15A (1/2")	260 / 10.24	J02

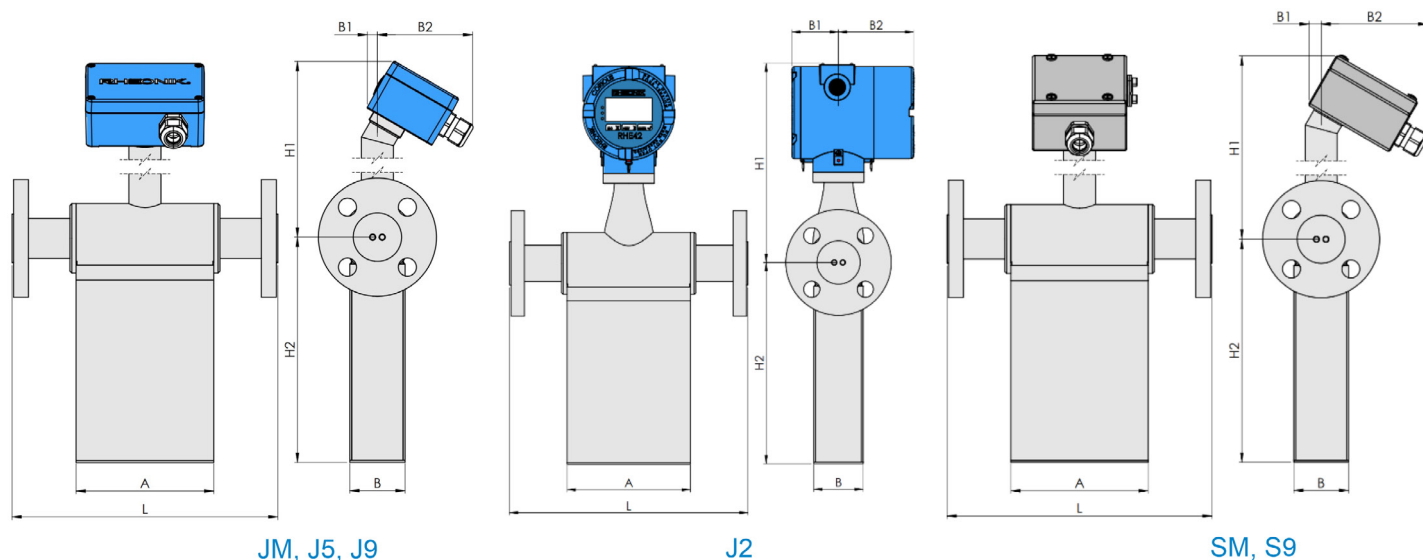
Weights and Shipping Dimensions

- Weight sensor with 1" 150# flanges ~ 8 kg/17.6 lb
- Gross weight with RHE 28 transmitter and packaging: ~14 kg/30.9 lb
- Shipping carton size: ~ 50 x 50 x 50 cm (20 x 20 x 20 in)

Sealless design flange/hub, temperature ranges N1, NA, EM, E2

Parallel tube / dual measurement path. Order Code: PF.

For processes that do not tolerate connection blocks or seals.



Process Connection	Dim. L mm / in	Order Code
Flange ANSI 1" 150# RF/SF	280 / 11.02	A06
Flange ANSI 1" 300# RF/SF	280 / 11.02	A07
Flange ANSI 1" 600# RF/SF	280 / 11.02	A08
Flange ANSI 1" 1500# RF/SF	320 / 12.60	A09
Flange ANSI 1" 2500# RF/SF	320 / 12.60	A10
Flange ANSI 1" 1500# RTJ	320 / 12.60	R05
Flange ANSI 1" 2500# RTJ	320 / 12.60	R06
Flange DIN DN25/PN40 Form B1	280 / 11.02	D04
Flange DIN DN25/PN100 Form B2	300 / 11.81	D06
Flange JIS B 2220 RF 10k 25A (1")	280 / 11.02	J03
Flange JIS B 2220 RF 20k 25A (1")	280 / 11.02	J04
G-LOK® Hub 1"	300 / 11.81	H10

Dimensions	mm	in
A	145.00	5.71
B	58.00	2.28
H2	236.00	9.29
B1 (JM, J5, J9)	11.00	0.43
B2 (JM, J5, J9)	100.00	3.94
H1 (JM, J5, J9)	197.00	7.76
B1 (J2)	55.00	2.17
B2 (J2)	88.00	3.46
H1 (J2)	234.00	9.21
B1 (SM, S9)	13.00	0.51
B2 (SM, S9)	113.00	4.45
H1 (SM, S9)	192.00	7.56

Weights and Shipping Dimensions

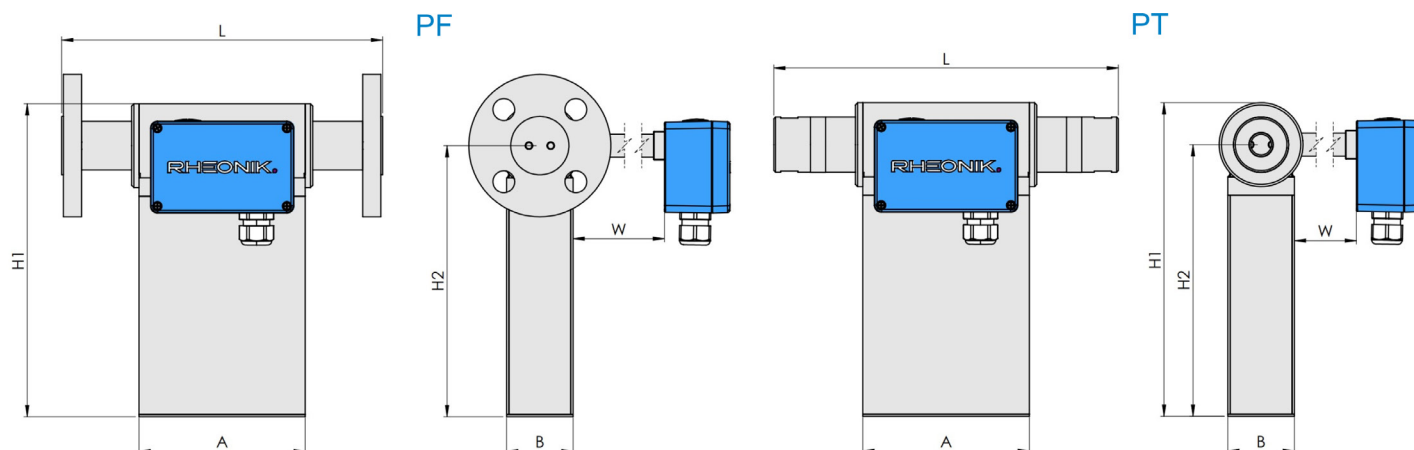
- Weight sensor with 1" 150# flanges ~ 7 kg/15.4 lb
- Gross weight with RHE 28 transmitter and packaging: ~13 kg/28.7 lb
- Shipping in wooden crate as per ISPM 15: ~ 50 x 50 x 50 cm (20 x 20 x 20 in)

Sealless design flange/hub, threaded, temperature range E3/H4

Sealless design with flange/hub and threaded process connections for E3/H4 temperature range

For cryogenic (E3) or high temperature (H4) applications.

Parallel tube / dual measurement path. Order Code: PF/PT



PF Process Connection	Dim. L mm / in	Order Code
Flange ANSI 1" 150# RF/SF	280 / 11.02	A06
Flange ANSI 1" 300# RF/SF	280 / 11.02	A07
Flange ANSI 1" 600# RF/SF	280 / 11.02	A08
Flange ANSI 1" 1500# RF/SF	320 / 12.60	A09
Flange ANSI 1" 1500# RTJ	320 / 12.60	R05
Flange ANSI 1" 2500# RTJ	320 / 12.60	R06
Flange DIN DN25/PN40 Form B1	280 / 11.02	D04
Flange DIN DN25/PN100 Form B2	300 / 11.81	D06
Flange JIS B 2220 RF 10k 25A (1")	280 / 11.02	J03
Flange JIS B 2220 RF 20k 25A (1")	280 / 11.02	J04
G-LOK® Hub 1"	300 / 11.81	H10

PT Process Connection	Dim. L mm / in	Order Code
Female Thread G 1/2"	300 / 11.81	G03
Female Thread 1/2" NPT	300 / 11.81	N03
Autoclave 9/16" MP - 13/16" - 16 UN Female Thread	300 / 11.81	M02

Dimensions	mm	in
A	145	5.71
B	58	2.28
H1	273	10.75
H2	236	9.29
W	Refer to Electrical connection to transmitter compatibility, p. 17	

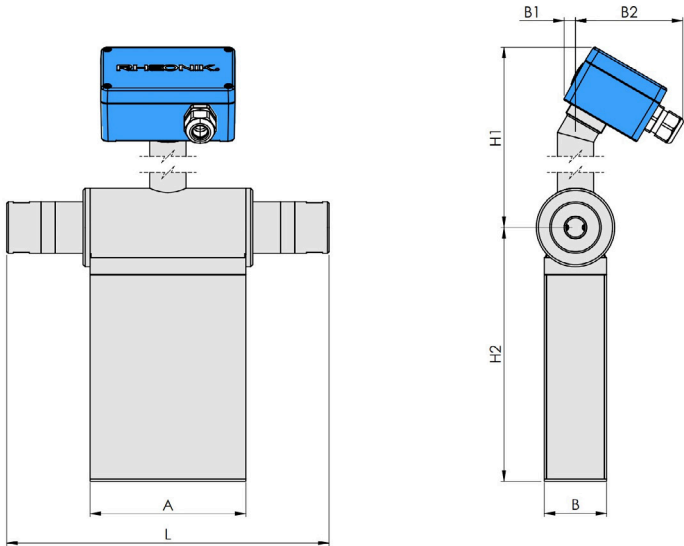
Weights and Shipping Dimensions

- Weight sensor with 1" 150# flanges ~ 7 kg/15.4 lb
- Gross weight with RHE 28 transmitter and packaging: ~13 kg/28.7 lb
- Shipping carton size: ~ 50 x 50 x 50 cm (20 x 20 x 20 in)

Sealless design with threaded process connections

For processes that do not tolerate connection blocks or seals.

Parallel tube / dual measurement path. Order Code: PT



Note: the same RHM/RHE combinations are available like with.

Process Connection	Dim. L mm / in	Order Code
Female Thread G 1/2" (order code PM)	300 / 11.81	G03
Female Thread 1/2" NPT (order code PM)	300 / 11.81	N03
Autoclave 9/16" MP – 13/16" – 16 UN female Thread	300 / 11.81	M02

Dimensions	mm	in
A	145	5.71
B	58	2.28
H2	236	9.29
B1 (JM, J5)	11	0.43
B2 (JM, J5)	100	3.94
H1 (JM, J5)	197	7.76
B1 (J2)	55	2.17
B2 (J2)	88	3.46
H1 (J2)	234	9.21
B1 (SM)	13	0.51
B2 (SM)	113	4.45
H1 (SM)	192	7.56

Material and pressure rating of process connections

The material of the process connection is generally identical to the selected measurement tube material. There are exceptions, e.g. Swagelok connections always consist of SS 316.

- For G threads, the pressure rating is 540 bar @ 120 °C.
- For NPT threads, the pressure rating is 700 bar @ 120 °C.
- For Autoclave threads, the pressure rating is 1220 bar @ 120 °C.

Weights and Shipping Dimensions

- Weight sensor with threads ~6.5 kg/14.3 lb
- Gross weight with RHE 28 transmitter and packaging: ~12.5 kg/27.6 lb
- Shipping carton size: ~50 x 50 x 50 cm (20 x 20 x 20 in)

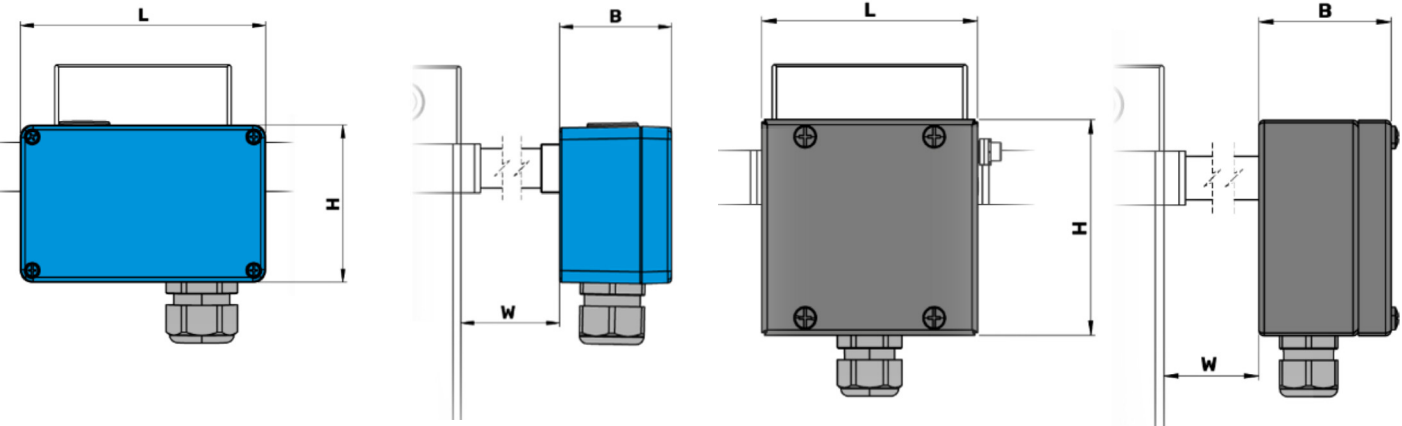
Electrical connection options to transmitters

Any Rheonik transmitter can be combined with any Rheonik sensor into a coriolis mass flow meter. This flexibility helps to provide a measurement solution for any requirement. Rheonik transmitters are available in integral or remote mounting options, offering various connection options to meet specific application requirements.

Connection of sensor and remote transmitter via Rheonik cable.

Standard coated aluminum terminal box. Order Code: JM

Terminal box in SS 316. Order Code: SM

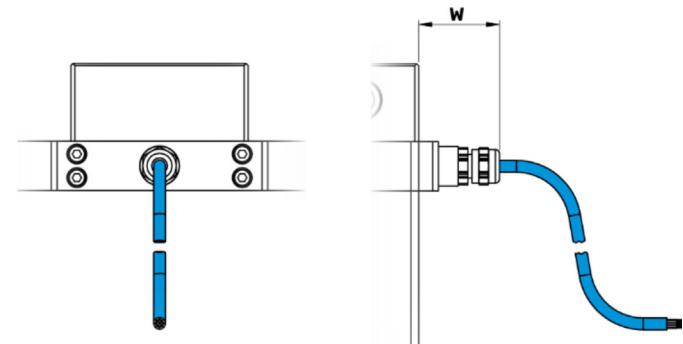


Connection Option ¹	Dimension	mm	in
JM Terminal Box	L x H x B	125 x 80 x 57	4.92 x 3.15 x 2.24
SM SS 316 Terminal Box	L x H x B	100 x 100 x 61	3.94 x 3.94 x 2.40
JM, SM with Temperature Range N1, NA	W	2	0.08
JM, SM with Temperature Range E2, E3	W	100	3.94

¹ JM and SM Terminal boxes are supplied with an M20 x 1.5 cable entry. Other optional entries are available, refer to [RHM 06 Order code, p. 19](#).

Special option for placement of sensor in vacuum chamber or oven (-257 °C to +210 °C)

Integral PTFE cable (No terminal box). Order Code: TM
Standard length 2 m, can be extended up to max. 10 m.

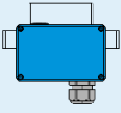
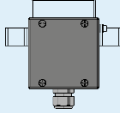
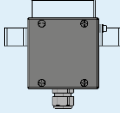
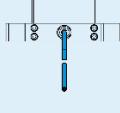
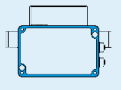
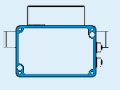


Connection Option	Dimension	mm	in
TM Integral PTFE Cable	W	41	1.61

For details on the integral transmitter used with options J2, J5, J9 and S9, refer to the RHE 42, RHE 45 or RHE 49 datasheet.

Electrical connection to transmitter compatibility

Electrical connection option selections are compatible with the transmitter range according to the following table. Note that economical blind front versions of some transmitters are available where displays and keypads are not required. The wide range of Rheonik sensors and transmitters provide tremendous options for system designers and end users alike.

Sensor Connection Options								
Order Code		JM	SM	S9	TM	J2 ¹	J5	J9
	RHE 21	✓	✓	–	✓	–	–	–
	RHE 26	✓	✓	–	✓	–	–	–
	RHE 27	✓	✓	–	✓	–	–	–
	RHE 28	✓	✓	–	✓	–	–	–
	RHE 42	✓	✓	–	✓	✓	–	–
	RHE 45	–	–	–	–	–	✓	–
	RHE 46	✓	✓	–	✓	–	–	–
	RHE 49	–	–	✓	–	–	–	✓

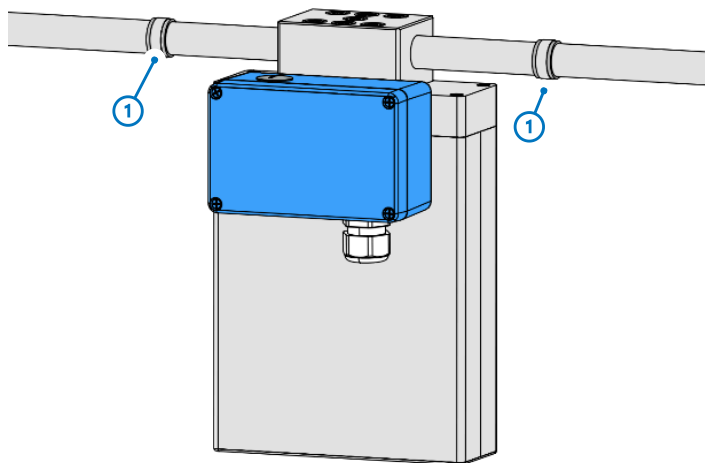
¹ Only with design types PF, PT. Refer to [RHM 06 Order code](#), p. 19.

Installation / mounting schemes

Recommended for sensitive, low flow installations. For order codes refer to [RHM 06 Order code, p. 19](#).

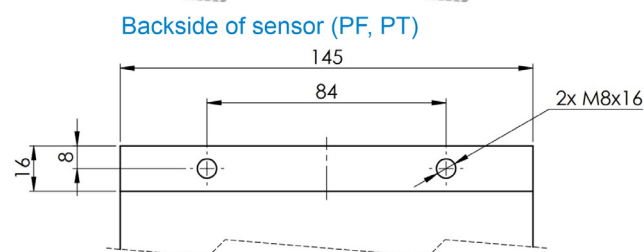
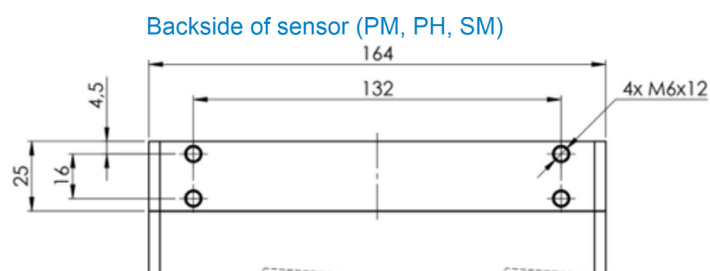
Pipe Support Brackets (1)

Secure sensor to inlet and outlet pipes.
Pipe support brackets provided by customer.



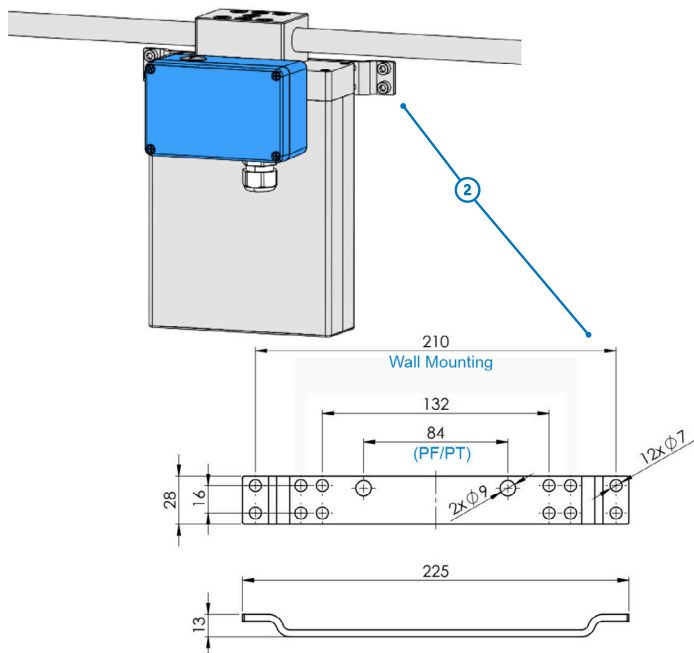
Sensor Mounting Holes

4 x M6 threaded holes at the back of the sensor, for direct mounting to frames and panels.
For use with customer-supplied screws or mounting solutions (2) and (3).



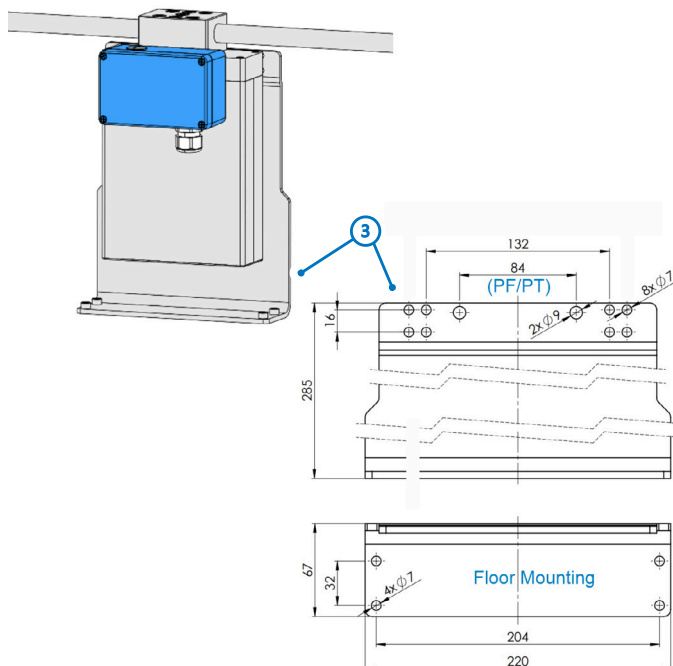
Wall Mounting Bracket Accessory (2)

Secure sensor to a wall or solid structure.



Floor Mounting "Foot" Bracket Accessory (3)

Secure sensor to a table or solid structure.



RHM 06 Order code

M#06	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
------	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----

Example part number code

M#06	S	N1	P1	PM	N	NN	D01	JM	A1	B1	P	NN	A	S	NN
------	---	----	----	----	---	----	-----	----	----	----	---	----	---	---	----

1	Performance class
S	Classic multi purpose high accuracy coriolis mass flowmeter
P	Premium highest accuracy coriolis mass flowmeter

2	Temperature range	
N1	Standard temperature range	-20 to +120 °C / -4 to +248 °F
NA	Standard temperature range	-50 to +120 °C / -58 to +248 °F
EM	Extended temperature range	-20 to +160 °C / -76 to +320 °F
E2	Extended temperature range	-50 to +210 °C / -58 to +410 °F
E3	Extended temperature range	-196 to +50 °C / -320 to +122 °F
H4	Extended temperature range	-20 to +350 °C / -4 to +662 °F

3	Material wetted parts / maximum pressure of measurement tubes at 120 °C/248 F
P1	SS 316L/Ti Tubes pmax = 189 bar / 2741 psi
P2	SS 316L Tubes pmax = 516 bar / 7483 psi
H1	Alloy C22 Tubes pmax = 267 bar / 3872 psi
D2	Super Duplex Tubes pmax = 516 bar / 7483 psi
D3	Super Duplex Tubes pmax = 847 bar / 12284 psi
D4	Super Duplex Tubes pmax = 1149 bar / 16664 psi
D5	Super Duplex Tubes pmax = 1603 bar / 23249 psi
T1	Tantalum

4	Design type
PM	Parallel connection block in SS 316L with seals
SM	Serial connection block in SS 316L with seals
PH	Parallel high-pressure connection block in SS 316L with seals
PF	Parallel tube, sealless only with flange and hub connections
PT	Parallel tube, sealless only with thread connections

5	Seals wetted parts
0	Sealless
N	FKM
F	FFKM
M	FVMQ
E	EPDM
H	HNBR

6	Sensor housing
NN	Standard stainless steel housing
SN	Special SS 316 housing
NR	Standard stainless steel housing with rupture disc
SR	Special SS 316 housing with rupture disc

6	Sensor housing
NS	Standard stainless steel housing with rupture disc, G 3/4" male drain connection
SS	Special SS 316 housing with rupture disc, G 3/4" male drain connection
7	Process connection
D01	Flange DIN DN15/PN40 Form B1 acc. to EN 1092-1
D02	Flange DIN DN15/PN100 Form B2 acc. to EN 1092-1
D04	Flange DIN DN25/PN40 Form B1 acc. to EN 1092-1
D06	Flange DIN DN25/PN100 Form B2 acc. to EN 1092-1
A01	Flange ANSI ½" 150# RF/SF
A02	Flange ANSI ½" 300# RF/SF
A03	Flange ANSI ½" 600# RF/SF
A06	Flange ANSI 1" 150# RF/SF
A07	Flange ANSI 1" 300# RF/SF
A08	Flange ANSI 1" 600# RF/SF
A09	Flange ANSI 1" 1500# RF/SF
A10	Flange ANSI 1" 2500# RF/SF
R02	Flange ANSI ½" 1500# RTJ
R05	Flange ANSI 1" 1500# RTJ
R06	Flange ANSI 1" 2500# RTJ
J01	Flange JIS B 2200 RF 10k 15A (½")
J02	Flange JIS B 2200 RF 20k 15A (½")
J03	Flange JIS B 2220 RF 10k 25A (1")
J04	Flange JIS B 2220 RF 20k 25A (1")
H10	G-Lok® hub 1 GR5
G03	Female thread G ½"
N03	Female thread ½" NPT
M02	Autoclave 9/16" MP - 13/16" - 16 UN female thread
8	Electrical connection to transmitter
JM	Terminal box coated aluminium not with hazardous area A0
SM	Terminal Box in SS 316
J2	Integral transmitter RHE42 (aluminum housing)
J5	Integral transmitter RHE45 (aluminum housing)
J9	Integral transmitter RHE49 (aluminum housing)
S9	Integral transmitter RHE49 (SS 316 housing)
TM	Integral 2m cable to RHE option IM required for use with RHE42
9	Hazardous area approvals sensor¹
NN	Without approval
A2	ATEX/IECEX Zone 2
A1	ATEX/IECEX Zone 1, 2
A0	ATEX/IECEX Zone 0, 1, 2
C2	cCSAus Class I, Zone 2
C0	cCSAus Class I, Div. 1, 2, Zone 0, 1, 2

¹ For labeling refer to [Hazardous area certifications](#), p. 22

10	Cable entry / cable gland
NN	Standard with integrated transmitter according to transmitter data sheet
B1	M20 x 1.5 cable gland
E1	½" NPT cable entry, no gland
E5	M20 x 1.5 cable gland in SS 316
E6	½" NPT cable entry in SS 316, no gland
1B	M20 x 1.5 cable gland upwards/gas installation
1E	½" NPT cable entry upwards/gas installation, no gland
5E	M20 x 1.5 cable gland in SS 316 upwards/gas installation
6E	½" NPT cable entry in SS 316 upwards/gas installation, no gland

11	Design compliance
N	Rheonik standard design in accordance with EN standards (no PED compliance, not for sale in the EU)
P	Compliance with the Pressure Equipment Directive (PED)

12	Performance/conformity certification
NN	Without certification

13	Flow calibration
A	Standard – uncertainty $\leq 0.20\%$ / 3 points
B	Enhanced – uncertainty $\leq 0.15\%$ / 3 points
G	Premium – uncertainty $\leq 0.10\%$ / 4 points
U	Ultimate – uncertainty $\leq 0.05\%$ / 4 points
1	Low Flow – uncertainty $\leq 0.10\%$ / 4 points
X	Customized calibration

14	Density calibration
N	No density measured
S	Standard uncertainty, refer to calibration options
D	Premium uncertainty, refer to calibration options

15	Factory Services
NN	None
D1	Material certificate for wetted parts acc. EN 10204 3.1
D2	Pressure test cert. & mat. cert. for wetted parts acc. EN 10204 3.1
FS	Combined factory services, possible options:
D1	Material certificate for wetted parts acc. EN 10204 3.1
D2	Pressure test cert. & mat. cert. for wetted parts acc. EN 10204 3.1
TP	Separate stainless steel tag (tag information only)
TC	Stainless steel nameplate
F	Removal of residual calibration water with compressed air
O	Special cleaning, water- and grease-free
7	Upgrade to dual rating IP66/67

Sensor accessories		
M	Wall mount bracket	Refer to Installation / mounting schemes, p. 18
MF	Floor mount bracket	Refer to Installation / mounting schemes, p. 18

Hazardous area certifications

Order code	Zone / Division	Approval	Labeling
NN	safe area	-	no hazardous area certification
A2	Zone 2	ATEX	II 3G Ex ec IIC T6...T1 Gc
		IECEX	 Ex ec IIC T6...T1 Gc
A1	Zone 1	ATEX	II 2G Ex ib IIC T6...T1 Gb
		IECEX	 Ex ib IIC T6...T1 Gb
A0	Zone 0	ATEX	II 1G Ex ia IIC T6...T1 Ga
		IECEX	 Ex ia IIC T6...T1 Ga
C2	Zone 2	USA/Canada	Class I, Zone 2, AEx nA IIC T6...T1 Gc
C0	Div 1, Zone 0	USA/Canada	Class I, Div 1, Groups A, B, C and D T6...T1 Class I, Zone 0, AEx ia IIC T6...T1 Ga



About Rheonik

Rheonik has but one single purpose: to design and manufacture the very best Coriolis meters available.

Our research and engineering resources are dedicated to finding new and better ways to provide cost effective accurate mass flow solutions that provide value to our customers. Our manufacturing group care for each and every meter we produce from raw materials all the way to shipping, and our service and support group are available to help you specify, integrate, start-up and maintain every Rheonik meter you have in service. Whether you own just one meter or have hundreds, you will never be just another customer to us. You are our valued business partner.

Need a specific configuration for your plant? Don't compromise with a "standard" product from elsewhere that will add extra cost to your installation. If we can't configure it from our extensive and versatile product range, our exclusive **AnyPipeFit Commitment** can have your flow sensor customized with any size/type of process connection and face to face dimension you need.

No matter what control system you use as the backbone in your enterprise, with our **AnyInterface Commitment**, you can be sure that connection and communication will not be a problem. Alongside a wide variety of discrete analog and digital signal connections, we can also provide just about any network/bus interface available (for example: HART, ProfibusDP, ProfiNet, EtherCAT, PowerLink, EtherNet/IP, CAN, ...) with our RHE 40 Series family of transmitters. Rheonik RHE 40 Series transmitters can connect to your system – no headache and no conversion needed.

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