



RHM12L

Standard 1 inch Coriolis Mass Flow Meter

Features

- Standard pressure ratings up to 790 bar (11458 psi)
- Temperature ratings from -196 to 350°C (-320 to 662°F)
- Mass flow uncertainty down to 0.12%
- Density uncertainty down to 0.5%
- Repeatability better than 0.05%
- Typical measuring ranges between 1 and 100 kg/min
- Accurately measure low flow rates down to 750 g/min
- Unique robust torsion driven oscillation system
- Rheonik AnyPipeFit Commitment brings you the possibility to get any custom process connection type and size for savings on installation costs. Compact design with minimal footprint
- Minimum pipe footprint versions available
- Approved for use in hazardous areas
- Stainless steel case
- Removable connection manifold version available for easy and efficient maintenance

Applications

- General Flow Control
- Additive Dosing
- Mixing
- Batching
- Package and Container Filling

Rheonik Sensor Benefits

- Torsion oscillator design assures a stable and drift free measurement with excellent signal to noise ratios
- Resilient to external noise and vibration
- Insensitive to pipe pressure changes
- Robust tube wall thickness provides increased operational safety in abrasive applications
- Corrosion resistant
- Long sensor life guaranteed due to low mechanical stresses in the meter mechanism
- No moving parts to wear or fail



General Specification Overview

Nominal Flow (Q _{nom})*	100 kg/min (220.5 lb/min)
Minimum Flow (Q _{min})*	2 kg/min (4.4 lb/min)
Serial Tube/ Single Path	Flow rates Q_{nom} and Q_{min} will be 50% of the above listed parallel/dual tube version
Operating Temperature	Temperature range options cover applications from -196°C to 350°C (-320°F to 662°F)
Pressure Ratings	Up to 790 bar / 11458 psi - dependent upon material
Electrical Connection	Cable entry M25 x 1.5 (standard), M20 x 1.5, ½" NPT, ¾" NPT (optional) Max. cable length to remote RHE transmitter 100m / 330ft
Sensor Enclosure Materials	Stainless steel (standard), 316 stainless steel (optional) Epoxy coated aluminum terminal box (standard), 316 stainless steel terminal box (optional)
Enclosure Type	Protection class IP65 (standard); IP 66 / NEMA 4X (optional)
Wetted Materials	1.4571 (316Ti), 2.4602 (Alloy C22), Tantalum, 1.4410 (SuperDuplex) Seal material (manifold construction): PTFE Additional/customer specific materials available upon request
Process Connections	Nearly any - the RHEONIK AnyPipeFit Commitment . Consult factory for types/sizes not listed in this data sheet
Pressure Rating Compliance	Europe – PED: Sound Engineering Practice (SEP), Module A2, Module B3.2+C2
Certifications and Approvals	ATEX / IECEx Approvals for zone 0, 1, 2 (suitably rated RHE transmitter required) North American Approvals for Class I, Div. 1, Groups ABCD (suitably rated RHE transmitter required) American Bureau of Shipping (ABS) Product Type Approval for use on marine vessels
Documentation, Testing and Inspection	All sensors are hydro tested, calibrated and supplied with a traceable calibration certificate. Customized calibration and testing services 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 WPAR, WQS, NDT, test & quality plans, functional testing, calibration procedures, customized packing, factory acceptance etc. Start up and commissioning services on/offshore
Options	Enclosure heating for high temperature applications Cleaning for oxygen service Full service painting to project specifications – consult factory

* At Q_{nom} pressure drop across a parallel tube sensor will be approximately 2 bar (29 psi) for H₂0. Sensors can be operated at higher flow rates but pressure drop will be higher. Maximum recommended velocity (liquid) through the sensor is 15 m/s. Beyond this point, cavitation may occur. Q_{min} is the recommended lowest flow rate. Sensors will measure flow rates lower than Q_{min} , but uncertainty will increase beyond 0.5% of rate.

The flow rate specifications above relate to standard pressure parallel tube sensor versions. Models with higher pressure ratings have increased wall thickness and will have higher pressure drops/lower Q_{nom} values.



Measurement Performance

	dard Calibration	4 5	
A	0.5% Uncertainty $\pm 0.5\%$ uncertainty between Q_{nom} and Q_{min}	1.5 1.0	Q _{nom} Q _{nom}
В	0.2% Uncertainty \pm 0.2% uncertainty between Q_{nom} and $Q_{0.2}$	0.0 2.0-certainty (%)	Mass Flow Rate
ligher	pressure units may have lower Q _{nom} values due to reduced tube	ID -0.5 -1.0 -1.5 -2.0	• Q _{0.2}
oldl	line Calibration	2.0	
G	0.15% Uncertainty $\pm 0.15\%$ uncertainty between Q_{G} and $(Q_{G}/20)$	1.5 1.0 (%) 4	← Q _G /10 Q _G →
Ρ	0.12% Uncertainty $\pm 0.12\%$ uncertainty between $Q_{\rm G}$ and $(Q_{\rm G}/10)$	0.5 0.0 Uncertainty (%) -1.0	Mass Flow Rate
	r sensors with standard temperature and pressure range ized calibration services are available – consult factory	-1.5 -2.0	Q _G /20
ow I	Flow Calibration	2.0	
С	1:20 Turn Up Calibration ±0.2% uncertainty between Q _{min} and (Q _{min} *20)	1.5 1.0 %) Atr	Q _{iow} Q _{min} *20
1	Low Flow Optimized Calibration ±0.2% uncertainty between Q _{min} and (Q _{min} *20) and ±0.6% uncertainty between Q _{min} and Q _{low}	0.5 0.0 uccertainty (%) -1.0 -1.5	Mass Flow Rate

Q _{nom}	100 kg/min (220.5 lb/min)
Q _{min}	2 kg/min (4.4 lb/min)
∽ min	2 (6) (111 (111 (6) (111))
Q _G	75 kg/min (220.4 lb/min)
Q _{0.2} 5 kg/min (11.0 lb/min)	
Q _{low}	1.5 kg/min (3.3 lb/min)

Select the calibration option (A,B,G,P,C,1) and include in the overall part number. For Serial Tube versions, the Q values above are halved.

Flow Measurement Repeatability Standard \pm 0.1% of rate Goldline \pm 0.05% of rate

Temperature Performance Better than ±1°C

Density Calibration

N*	No Live Density Calibration
S	Standard +/- 0.01 kg/liter uncertainty between 500 and 1400 kg/m3
D	Enhanced +/- 0.005 kg/liter uncertainty between 500 and 1400 kg/m3

For live volumetric flow, S or D calibration must be included in the part number and the sensor must be operated by an RHE with live density capability.

* Even with No Live Density Calibration, volumetric flow can still be calculated with an inferred density value based upon a manually entered norm density value and its temperature gradient.

Calibration Reference Conditions

Performance statements relate to the following conditions:

- Water (for mass flow accuracy)
- Temperature: 18 to 24°C (66 to 76°F)
- Pressure at 1 to 3 barg (15 to 45 psig)
- RHM with standard temperature, material and pressure range

THE CORIOLIS EXPERTS

Contact us: www.rheonik.com



Measurement Tube Pressure Ratings

The maximum pressure (P_{max}) of a sensor is determined by its lowest rated part. The lowest rated part can be either the measurement tube (P_{max} indicated below), the construction type (P_{max} indicated in the Part Number Code section) or the process connection (for P_{max} see published standards or manufacturer information).

P1 (std.) P1	Pressure Code	Material Code	Matarial			Pmax		
$M1$ (sd.) 1.4571 ($316T1$) UNS 331635 190 2756 00 120 440 164 2379 00 300 662 138 2002 00 300 662 138 2002 100 2002 200 310 00 210 140 2002 310 00 210 2100 210 141 269 00 310 00 210 210 144 269 00 300 562 00 100 100 100 100 100 100 100 100 10^{**} 1410 ($300peDuplex$) UNS 32750 353 00 100 210 10^{**} 1.4410 ($300peR$) UNS 321803 507 733 00 100 210 10^{**} 1.4410 ($30peR$) UNS 321803 507 353 00 100 210 10^{**} 1.4410 ($30peR$) UNS 321803 354 00 100 210 240 10^{**} 1.4410 ($30peR$) UNS 321803 368 00 100 210 10^{**} 1.4410 ($30peR$) UNS 321803 1005 00 100 100 10^{**} 1.4410 ($30peR$) UNS 321803 1005 00 100 100 10^{**} 1.4410 ($30peR$ 1005 100 100 100 100 10^{**} 1.4410 ($30peR$ 1005 100 100 100 100 10^{**	Pressure Code	Material Code	waterial	bar	psi		°C	°F
M1 (std.) List (gram, UNS S31635 164 2379 0 210 410 138 2002 0 350 662 138 2002 0 350 662 138 2002 0 350 662 138 202 4235 0 50 122 283 3742 0 100 248 280 319 0 200 428 280 319 0 50 102 10** Tantalum UNS R05200 39 565 0 120 30 565 0 120 248 10** 1.4410 (Super Duplex) UNS S32750 7353 0 50 122 62** 1.4462 (Duplex) UNS S31635 340 60 120 248 310 4496 0 210 248 401 534 5134 0 120 248 10* 1.4571 (3167) 354				212	3075	@	50	122
P1 (std.)IndexIndexIndexIndexIndexIndexIndexIndexM32.4602 (Alloy C22) UNS N0602228231910204232.4602 (Alloy C22) UNS N060223191020423M4*Index26690350662M4*Index266901224230122M4*Index2660122122123122IndexIndexIndex14410 (Super Duplex) UNS S3275060122248122248IndexIndexIndexIndex14420 (Duplex) UNS S3180366122248120121IndexIndexIndexIndexIndex120248120248120121IndexIndexIndexIndexIndex120248120248120248IndexIndexIndexIndexIndex120248120248IndexIndexIndexIndexIndex120248120248IndexIndexIndexIndexIndexIndex120248IndexInd		M1 (std.)	std.) UNS S31635 164 2379 @ 210 138 2002 @ 350 3 2.4602 (Alloy C22) UNS N06022 258 3742 @ 120 220 3191 @ 210 184 2669 @ 350 1* Tantalum UNS R05200 444 638 @ 50 36 522 @ 210 210 210 210 1* Tantalum UNS R05200 444 638 @ 50 ** 1.4410 (Super Duplex) UNS S32750 507 7353 @ 50 444 6440 @ 120 210 210 210 ** 1.4410 (Super Duplex) UNS S32750 444 6440 @ 120 402 5831 @ 210	120	248			
M3 2.4602 (Alloy C2) UNS N06022 228 3742 00 120 2480 P1 (std.) M4 0 3191 00 210 410 M4* 1084 2669 0 500 122 M4* 638 00 50 122 390 565 00 120 248 M4* 1.4410 (Super Duplex) 30 565 00 122 10** 1.4462 (Duplex) 507 7353 00 502 122 444 6440 00 120 248 248 249		IVII (Std.)	UNS S31635	164	2379	@	210	 122 248 410 662 122 248 410 662 122 248 410 662 122 248 410 662 122 248 410
M3 2.4602 (Alloy C22) UNS N06022 258 3742 @ 120 2481 P1 (std.) @ 3191 @ 350 662 M4* 638 @ 350 622 M4* 638 502 120 248 M4* 638 502 120 248 M4* 638 522 @ 210 410 M4* 644 644 @ 210 410 M1 .4410 (Super Duplex) UNS S31803 @ 507 5834 @ 210 410 M1 .4462 (Duplex) UNS S31803 M3 @ 300 4405 210 410 M1 .4571 (316T) UNS S31803 @ 420 210 410 M3<			MaterialbarpsiCC1.4571 (316Ti) UNS S316351902756@5011902756@21011642379@21011642379@35011882002@350122.4602 (Alloy C22) UNS N060222583742@12022.4602 (Alloy C22) UNS N060221842669@350122.4602 (Alloy C22) UNS N0502039565@120124368950512011184266901201111955577353@5051201366522@12011114410 (Super Duplex) UNS S318035577353@50513104496@12011114452 (Duplex) UNS S318333541201114452 (Duplex) UNS S31635354120112453698@1201114571 (316Ti) UNS S316352553698@12012553698@1201111457145714556614@3501145724602 (Alloy C22) UNS N060223545@1201246024930120111145<	662				
M3 UNS N06022 220 3191 @ 210 410 P1 (std.) M4* Tantalum UNS R05200 184 2669 @ 350 662 P1 (std.) M4* Tantalum UNS R05200 39 565 @ 120 248 M4* 1.4410 (Super Duplex) UNS S32750 36 522 @ 210 410 62** 1.4410 (Super Duplex) UNS S31803 W1 644 6440 62 210 410 62** 1.4462 (Duplex) UNS S31803 W1 5874 @ 50 122 62** 1.4462 (Duplex) UNS S31803 310 4496 @ 210 410 9 62** 1.4571 (316Ti) UNS S31803 331 4801 @ 200 248 9 1.4571 (316Ti) UNS S31803 216 410 210 248 9 1.4462 (MIOP C22) UNS N06022 3118 @ 350 662 91 1.4440 (Super Duplex) UNS S32805 1285 360 12				292	4235	@	50	122
P1 (std.) 0 210 410 184 266 0 350 662 M4* 638 0 50 122 248 366 522 0 120 248 M4* 10** 1.4410 (Super Duplex) 565 0 122 248 10** 1.4410 (Super Duplex) 507 7353 0 522 248 200 284 260 522 0 120 248 10** 1.4410 (Super Duplex) 440 640 0 120 248 200 587 0 120 248 100 120 248 201 201 14452 100 120 120 120 120 120 201 201 14452 100 131 0 120 248 201 14452 100 1455 1314 0 120 248 201 14551 1415 140		M3		258	3742	@	120	248
P1 (std.)M4*Tantalum UNS R05200444638@50012239565@12024836522@21041010**1.4410 (super Dupley UNS S327506077353@5001224446440@1202484025831@10041062**1.4462 (Duplex) UNS S318036055134@5001223545134@1202483104496@2104101.4571 (316Ti) UNS S316356623698@12024872M32.4602 (Alloy C22) UNS N0602236456614@50012274745041636614@3506627474514602 (Calloy C22) UNS N060223444989@120248747441636614@500122747440 (Super Duplex) UNS S3275066244989@1202487474410 (Super Duplex) UNS S3275066310051@120248746349499@5001222487474410 (Super Duplex) UNS S327506629079@1202487474451463664@5001221407474410 (Super Duplex) UNS S31803662907920021024874 <td></td> <td>1415</td> <td>UNS N06022</td> <td></td> <td></td> <td></td> <td></td> <td></td>		1415	UNS N06022					
P1 (std.) M4* Tantalum UNS R05200 39 565 0 120 248 36 522 0 210 410 10** 1.4410 (Super Duplex) UNS S32750 507 7353 0 502 248 400 0 0 120 248 10** 1.4410 (Super Duplex) UNS S32750 444 6440 0 120 248 62** 1.4462 (Duplex) UNS S31803 605 5874 0 500 122 62** 1.4462 (Duplex) UNS S31803 5134 0 500 120 248 7 755 60 120 248 120 248 62** 1.4462 (Duplex) UNS S31803 5134 0 50 122 62** 14571 (316Ti) UNS S31803 255 3698 0 210 248 7 449 0 50 122 248 7 444 498 0 50 122 10**				184	2669	@		662
M4* UNS R05200 33 565 @ 120 248 10** 1.4410 (Super Duplex) UNS S32750 507 7353 @ 500 122 10** 1.4410 (Super Duplex) UNS S32750 444 6440 @ 120 248 62** 1.4462 (Duplex) UNS S31803 4005 5874 @ 500 122 62** 1.4462 (Duplex) UNS S31803 310 4406 @ 500 122 62** 1.4452 (Duplex) UNS S31803 331 4801 @ 500 122 78 M1 1.45571 (316Ti) UNS S31635 398 @ 120 248 792 M3 2.4602 (Alloy C22) UNS N06022 318 @ 500 122 M3 2.4602 (Alloy C22) UNS N06022 403 5845 @ 120 248 M3 1.4410 (Super Duplex) UNS S32750 1455 6614 @ 500 122 M3 1.4420 (Duplex) UNS S32750 1463 @ 500 122	P1 (std.)		Tantalum	44	638	@	50	122
10**3652@21041010**1.4410 (Super Duplex) UNS S327505077353@5001224446440@1202484025831@21041062**1.4462 (Duplex) UNS S318033545874@5001223104496@1202483104496@1202483104496@2104102862493@120248286289601202483114801@500122286293@1202482866614@500122287344989@2104102866614@5001223844989@1202483844989@1202483844989@1202483844989@1202483844989@1202483844989@1202483844989@1202483844989@12024838410844989@12038410851202483841085120248384108512024838410851202483841085120 <t< td=""><td></td><td>M4*</td><td></td><td>39</td><td>565</td><td>@</td><td>120</td><td>248</td></t<>		M4*		39	565	@	120	248
10**1.4410 (Super Duplex) UNS S327504446440@1202484005831@21041062**1.4462 (Duplex) UNS S318033545134@501223104496@21041091.4452 (Duplex) UNS S318033104801@21041091.4571 (316Ti) UNS S316352553698@12024891.4571 (316Ti) UNS S316352553698@12024891.4571 (316Ti) UNS S316352553698@12024891.4571 (316Ti) UNS S316352553698@12024891.4571 (316Ti) UNS S316352553698@12024891.4571 (316Ti) UNS S316352553698@12024891.4571 (316Ti) UNS S316352553698@12024891.4572.4602 (Alloy C22) UNS N0602241035845@12024810**1.4410 (Super Duplex) UNS S327503444989@35062262**1.4462 (Duplex) UNS S318039152@50122639079@210410639152@5012262**1.4462 (Duplex) UNS S31803651915260120248				36	522	@	210	410
P2 ID** UNS \$32750 444 6440 66 120 248 00 5831 60 210 410 62** 1.4462 (Duplex) UNS \$31803 405 5874 60 50 122 62** 1.4462 (Duplex) UNS \$31803 310 4496 60 210 410 62** 1.4452 (Duplex) UNS \$31803 310 4801 60 50 122 62** 1.4571 (316Ti) UNS \$31635 255 3698 60 210 410 92 428 66 614 60 50 122 92 3118 60 50 122 410 92 456 6614 60 50 122 92 10* 248 410 410 410 410 92 403 5845 60 120 248 93 104 4989 62 120 248 10** 10** 1410			1 4410 (Super Dupley)	507	7353	@	50	122
P2IndexInd		10**		444	6440	@	120	248
62**1.4462 (Duplex) UNS \$318033545134@1202483104496@2104103314801@501222964293@1002482053698@2102482053698@2104102153118@3506622053698@3104102153118@35066220621602 (Alloy C22) UNS N060224035845@1204035845@1202482062102483444989@1202102102102483444989@12021110**14410 (Super Duplex) UNS \$3275011458@50012262**1.4462 (Duplex) UNS \$318039152@51012062**1.4462 (Duplex) UNS \$318035538021@120			UNS \$32750 402 5831 @	@	210	410		
B2** UNS \$31803 334 5134 00 120 248 310 4496 00 210 410 310 4496 00 210 410 310 4801 00 50 122 331 4801 00 50 122 296 4293 00 120 248 00 255 3698 00 210 410 215 3118 00 350 662 10* 24602 (Alloy C22) 403 5845 0 120 456 6614 00 50 122 10* 2480 44989 00 120 248 10* 100* 00 344 4989 00 120 248 10* 10* 1400 287 4163 00 350 662 10** 10** 14410 (Super Duplex) 790 11458 00 120			405 5874 @ 50 1.4462 (Duplex) 354 5134 @ 120	405	5874	@	50	122
Image: constant of the image:		62**		120	248			
M11.4571 (316Ti) UNS S316352964293@1202482553698@2104102153118@350662M32.4602 (Alloy C22) UNS N060224035845@1204035845@120248M32.4602 (Alloy C22) UNS N060224035845@1202874163@35066210**1.4410 (Super Dupler) UNS S3275079011458@50062**1.4462 (Dupler) UNS S318039152@5001226319152@50012262**1.4462 (Dupler) UNS S318035538021@120		0105 551805	310	4496	@	210	410	
M1 UNS S31635 255 3698 @ 210 410 215 3118 @ 350 662 M3 2.4602 (Alloy C22) UNS N06022 403 5845 @ 120 248 M3 2.4602 (Alloy C22) UNS N06022 403 5845 @ 120 248 M4 4989 @ 210 410 287 4163 @ 350 662 10** 1.4410 (Super Duplex) UNS S32750 790 11458 @ 500 122 62** 1.4462 (Duplex) UNS S31803 631 9152 @ 500 122 62** 1.4462 (Duplex) UNS S31803 553 8021 @ 120 248					50	122		
P2 3698 @ 210 410 215 3118 @ 350 662 M3 2.4602 (Alloy C22) UNS N06022 403 5845 @ 120 248 M3 2.4602 (Alloy C22) UNS N06022 403 5845 @ 120 248 10** 1.4410 (Super Duplex) UNS S32750 790 11458 @ 500 122 62** 1.4462 (Duplex) UNS S31803 10051 @ 120 248 62** 1.4462 (Duplex) UNS S31803 553 8021 @ 500 122		N 4 4	1.4571 (316Ti)	296	4293	@	120	248
P24566614@50122M32.4602 (Alloy C22) UNS N060224035845@1202483444989@2104102874163@35066210**1.4410 (Super Duplex) UNS S3275079011458@50012262**1.4462 (Duplex) UNS S318036319152@50012262**1.4462 (Duplex) UNS S318035538021@120248		IVIT	UNS S31635	255	3698	@	210	410
P2 A03 5845 @ 120 248 M3 UNS N06022 344 4989 @ 210 410 287 4163 @ 350 662 10** 1.4410 (Super Duplex) UNS S32750 790 11458 @ 500 122 662* 1.4462 (Duplex) UNS S31803 6631 9079 @ 2100 410 62** 1.4462 (Duplex) UNS S31803 6531 8021 @ 120 248				215	3118	@	350	662
M3 M4 M3 M4 M3 M4 M3 M4 M3 M3 M62 M4 M3 M3 M4 M3 M4 M3 M4 M3 M4 M3 M4 M3 M4 <t< td=""><td></td><td></td><td></td><td>456</td><td>6614</td><td>@</td><td>50</td><td>122</td></t<>				456	6614	@	50	122
P2 UNS N06022 344 4989 @ 210 410 287 4163 @ 350 662 10** 1.4410 (Super Duplex) UNS S32750 693 10051 @ 120 248 626 9079 @ 210 410 626 9079 @ 210 410 627 410 628 9079 @ 210 410 628 90 90 90 90 90 90 90 90 90 90 90 90 90		142	2.4602 (Alloy C22)	403	5845	@	120	248
10** 1.4410 (Super Duplex) UNS S32750 287 4163 @ 350 662 10** 1.4410 (Super Duplex) UNS S32750 790 11458 @ 500 122 693 10051 @ 120 248 626 9079 @ 210 410 62** 1.4462 (Duplex) UNS S31803 6631 9152 @ 500 122 62** 1.4462 (Duplex) UNS S31803 553 8021 @ 120 248	52	M3	· · · ·	344	4989	@	210	410
10** 1.4410 (Super Duplex) UNS S32750 693 10051 @ 120 248 626 9079 @ 210 410 62** 1.4462 (Duplex) UNS S31803 631 9152 @ 503 120 248	P2			287	4163	@	350	662
IO** UNS S32750 693 IO051 @ I20 248 626 9079 @ 210 410 62** 1.4462 (Duplex) UNS S31803 9152 @ 500 122 553 8021 @ 120 248				790	11458	@	50	122
62** 000000000000000000000000000000000000		10**		693	10051	@	120	248
62**6319152@5001220005538021000120248			UNS 532750	626	9079	@	210	410
62** 1.4462 (Duplex) UNS \$31803 553 8021 @ 120 248							50	122
UNS \$31803		62**		553	8021		120	248
484 7020 @ 210 410			UNS S31803	484				

* Only with N1, NA, E2 temperature range (note max. operating temp. is 130°C) and PF0 construction type (max. ANSI 300/PN40) **Only with N1, NA, E2 temperature range (note min. temp. is -40°C) and seal-less construction type

Other Materials and Pressure Ratings

Higher pressure rated measurement tubes in the materials above may be possible. Other wetted materials (e.g. Inconel, Monel, 304 stainless steel, others) are also possible for chemical compatibility, lower pressure drop, abrasion allowance and other application specific requirements. *Contact factory with specification for assessment and availability.*

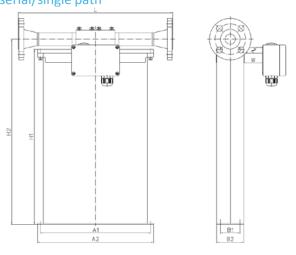


Mechanical Construction

Sensors are manufactured with two internal measurement tubes arranged side by side. In parallel or dual path sensors (order code Pxx), these tubes are connected in parallel and the flowing fluid is split equally between them. In serial or single path sensors (order code Sxx), the internal tubes are connected end to end, creating a single path through which all fluid flows. Manifold designs have a removable inlet/outlet manifold block and utilize PTFE seals between the manifold and sensor body. In seal-less designs, the measurement tubes are continuous between the process connections and do not have seals. Manifold designs offer shorter delivery lead times and may have a lower pressure drop than seal-less designs for the same flow rate.

Manifold design with seals - flange connections

PM0: parallel/dual path SM0: serial/single path

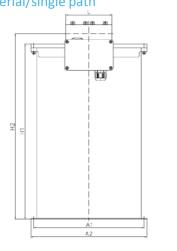


Process Connection	Dim. L	Dim. H2	Order
Process connection	mm / in	mm / in	Code
ANSI 1in 150# RF	400 / 15.75	481/18.94	A1
ANSI 1in 300# RF	400 / 15.75	481/18.94	A2
ANSI 1in 600# RF	400 / 15.75	481/18.94	A3
ANSI ½in 150# RF	400 / 15.75	481/18.94	A4
ANSI ½in 300# RF	400 / 15.75	481/18.94	A5
ANSI 1in 1500# RF	450 / 17.72	481/18.94	A6
ANSI 1in 1500# RTJ	450 / 17.72	481/18.94	R1
DIN DN25/PN40 Form C	400 / 15.75	481/18.94	D1
DIN DN25/PN100 Form E	400/15.75	481/18.94	D2
JIS B 2220 RF 10k 15A (½in)	400/15.75	481/18.94	J4
JIS B 2220 RF 20k 15A (½in)	400/15.75	481/18.94	J5

1. Manifold blocks are manufactured from 316Ti (1.4571) stainless steel

Manifold design with seals - threaded connections

PM0: parallel/dual path SM0: serial/single path



Dimensions	mm	in
A1	285	11.22
A2	300	11.81
B1	50	1.97
B2	70	2.76
H1	454	17.87
V	26	1.02



Process Connection	Dim. L mm / in	Dim. H2 mm / in	Order Code
Female Thread G ¾"	120/4.72	481/18.94	G1
Female Thread ¾" NPT	120/4.72	481/18.94	N1

1. Manifold blocks are manufactured from 316Ti (1.4571) stainless steel

Standard blue terminal box in Aluminum, size = 125 x 80 x 57 mm (4.92 x 3.15 x 2.24 in) - optionally available with integral RHE45 transmitter

Optional SS 316 box, size = $100 \times 100 \times 61 \text{ mm} (3.94 \times 3.94 \times 2.40 \text{ in})$ - only for remote transmitter

W = 0 mm (0 in) for Aluminum box and Temperature Range N1 and NA W = 30 mm (1.2 in) for SS 316 box and Temperature Range N1 and NA W = 150 mm (5.91 in) for all other Temperature Ranges

NOTE: Junction boxes are supplied with M25 x 1.5 cable entries as standard. M20 x 1.5, $\frac{1}{2}$ " NPT, $\frac{3}{2}$ " NPT cable entries are optionally available and must be ordered separately.

All dimensions are for standard products. For customization of face to face length and/or process connection types other than the ones listed on this page, please consult factory. Note that larger diameter flange process connections are always possible.

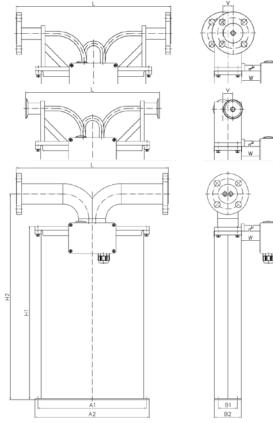


Mechanical Construction (continued)

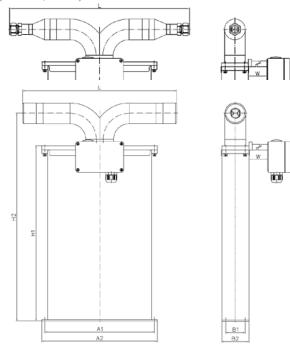
Seal-less design with flange connections

SFO: serial/single path

PF0: parallel/dual path



Seal-less design with threaded or tube connections PFT: parallel/dual path



Process Connection	Dim. L mm / in	Dim. H2 mm / in	Order Code
ANSI 1in 150# RF	400 / 15.75	540/21.26	A1
ANSI 1in 300# RF	400 / 15.75	540/21.26	A2
ANSI 1in 600# RF	400 / 15.75	540/21.26	A3
ANSI 1in 1500# RF	400 / 15.75	540/21.26	A6
ANSI 1in 1500# RTJ	400 / 15.75	540/21.26	R1
ANSI 1in 2500# RTJ	400 / 15.75	540/21.26	R2
DIN DN25/PN40 Form C	400 / 15.75	540/21.26	D1
DIN DN25/PN100 Form E	400 / 15.75	540/21.26	D2
DIN DN25/PN160 Form E	400 / 15.75	540/21.26	D4
JIS RF 10k 25A (1")	400 / 15.75	540/21.26	J1
JIS RF 20k 25A (1")	400/15.75	540/21.26	J2
Grayloc 1½" GR11 Hub	400 / 15.75	540/21.26	H3
Sanitary 1" Triclamp, DIN 32676 (only with SF0)	350 / 13.78	540/21.26	SO
Sanitary NW20, DIN 11851 (only with SF0)	350/13.78	540/21.26	S4

1. For hub connectors (e.g. Destec, Galperti, Grayloc, Techlok) or JIS flanges please consult factory 2. SF0 meters are constructed with offset inlet/outlet ports. Consideration should be given to the offset (dimension V) when planning installation

3.

Pmax for sanitary fitting S0 is 17.2 bar (250 psi) @120°C (248°F) Pmax for sanitary fitting S4 is 40 bar (580 psi) @ 120°C (248°F) 4.

5. Meter will be supplied with a 1.4571 (316Ti) stainless steel backing flange and wetted material facing disc for some material selections (e.g. Tantalum)

6. Other dimensions on previous page

Process Connection	Dim. L	Dim. H2	Order
Process connection	mm / in	mm / in	Code
Female Thread G ¾"	400 / 15.75	540/21.26	G1
Female Thread ¾" NPT	400 / 15.75	540/21.26	N1
Swagelok ¾" tube compression fitting (SS-1210- 1-12W)	470 / 18.50	540/21.26	W1

1. Other dimensions on previous page

All dimensions are for standard products. For customization of face to face length and/or process connection types other than the ones listed on this page, please consult factory. Note that larger diameter flange process connections are always possible.

THE CORIOLIS EXPERTS Contact us: www.rheonik.com



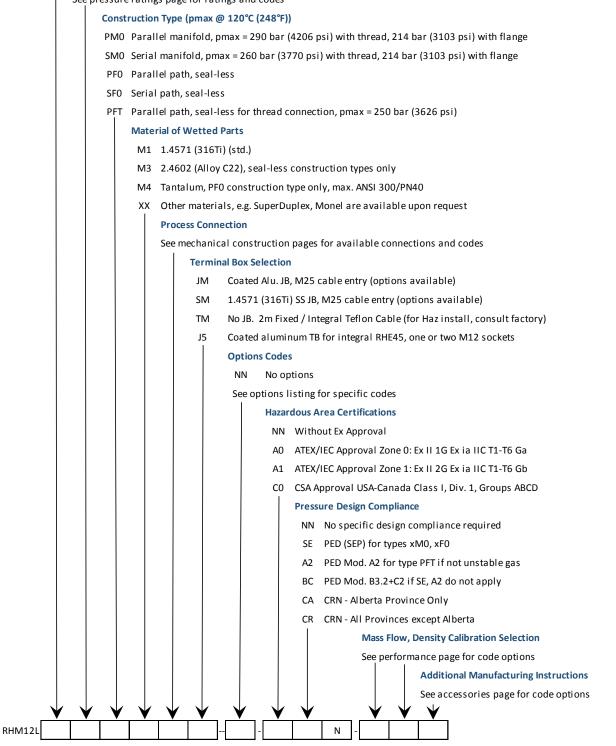
RHM12L Part Number Code

Temperature Range

- N1 -20 to +120°C (-4 to +248°F) (std.)
- NA -50 to +120°C (-58 to +248°F)
- E2 -50 to +210°C (-58 to +410°F) (For Tantalum sensors max. operating temp. 130°C/max design temp. +210°C)
- E3 -196 to +50°C (-320 to +122°F)
- H4 0 to +350°C (+32 to +662°F)

Pressure Code for Pmax of Measuring Loops

See pressure ratings page for ratings and codes





Options and Accessories

	RHM12L Part Number Option Codes
H1	Hot oil/steam heating matrix for housing, DN15 PN40
H2	Hot oil/steam heating matrix for housing, ½" ANSI 150 RF
H3	Hot oil/steam heating matrix for housing, ½" ANSI 300 RF
P2	Housing purge connections - ½" NPT (2 pcs)
SB	Housing in 316 stainless steel
WH	Fully welded/sealed housing
DY	Dye penetrant inspection
XR	X-ray test – PFT, PM0 (flange), SM0 (flange) types only
OTE: when specify	ing a sensor with multiple part code options (i.e. SB and WH), separate each code with a comma in the part string (i.eSB,WH)

	Additional Manufacturing Instructions		
0	Oil/grease free cleaning		
S	Marine packing		

Cable Entry Options (order separately)	
ORHM-E1 1/2" NPT Terminal Box Cable Entry	
ORHM-E2 M20 x 1.5 Terminal Box Cable Entry	
ORHM-E3 ¾" NPT Terminal Box Cable Entry	

Standard cable entry on terminal box is M25 x 1.5





Any Rheonik Mass Flow Transmitter model can be combined with any Rheonik Mass Flow Sensor to provide an overall mass flow measurement system to suit any requirement. Rheonik Coriolis transmitters are available in versions specifically designed for process, industrial and OEM applications. Together they offer a tremendous range of options for system designers and end users alike. *See separate data sheet for the features of each transmitter style*

About Rheonik

Rheonik has a 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. 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 each and 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 product range, our exclusive *AnyPipeFit Commitment* can have your flow sensor customized with any size or type process connection 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 or 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 RHE4x family of transmitters. Rheonik RHE4X transmitters can connect to your system – no headache and no conversion needed.