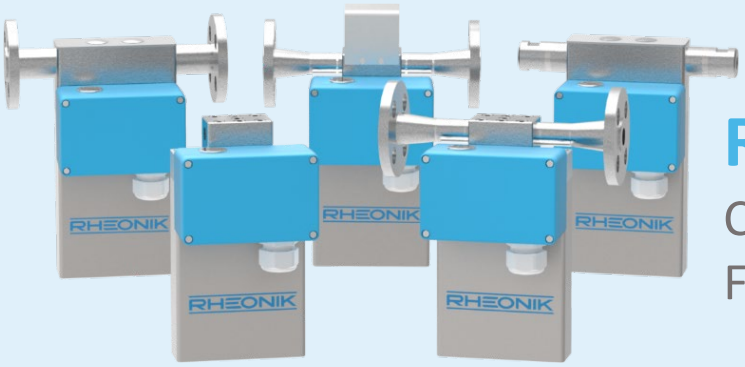



# RHM 02, 03 & 04

## Compact Low Flow Coriolis Flow Sensors

## Features

- Pressure ratings up to 20000 psi/1379 bar
- Temperature ratings from -196 to 350°C (-320 to 662°F)
- Mass flow uncertainty down to 0.10 %
- Density uncertainty down to 0.005 kg/liter
- Repeatability better than 0.05 %
- Ranges between 25 g/min to 10 kg/min
- Dual path (parallel) and single path (serial) internal pipe configurations available
- **Omega Coriolis Design**: unique 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
- Extremely compact design with minimal footprint
- Approved for use in hazardous areas
- Entire enclosure / external parts in stainless steel 316Ti available
- Removable connection manifold version available for easy maintenance
- Remote and integral transmitter versions available

## Applications

- General Flow Control
- High Pressure Gas Dispensing
- Additive Dosing
- Mixing and Batching
- Chemical Injection
- Package and Container Filling
- Polyurethane, Paint, Adhesives

## 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
- Long sensor life guaranteed due to low mechanical stresses of torsional movement
- No moving parts to wear or fail
- Selected sensors for enhanced performance (Goldline)

# General Specification Overview

| | RHM 02 | RHM 03 | RHM 04 |
|---|---|---|---|
| **Nominal Flow ($Q_{nom}$)*** | 2 kg/min<br>(4.4 lb/min) | 5 kg/min<br>(13.2 lb/min) | 10 kg/min<br>(33 lb/min) |
| **Minimum Flow ($Q_{min}$)*** | 0.050 kg/min<br>(0.11 lb/min) | 0.1 kg/min<br>(0.22 lb/min) | 0.2 kg/min<br>(0.44 lb/min) |
| **Serial Tube/ Single Path Versions** | Flow rates $Q_{nom}$, $Q_{min}$ will be 50 % of the above listed parallel/dual tube version of the same size | | |
| **Operating Temperature** | Fluid from -196 °C to 350 °C (-320 °F to 662 °F), see options in Part Number Code<br>Ambient from -50 °C to 80 °C (-58 °F to 176 °F), optional up to 210 °C (410 °F) | | |
| **Pressure Ratings** | Up to 1379 bar/20000 psi - dependent upon material | | |
| **Electrical Connection** | Cable entry M20 x 1.5 (standard), M25 x 1.5, ½" NPT, ¾" NPT (optional)<br>Max. cable length to remote RHE transmitter 100 m / 330 ft | | |
| **Sensor Enclosure Materials** | Stainless steel (standard), 316 stainless steel (optional)<br>Coated aluminum terminal box (standard), 316 stainless steel terminal box (optional) | | |
| **Enclosure Type** | Protection class IP 66, NEMA 4 (standard), NEMA 4X, IP68/69K (optional) | | |
| **Wetted Materials** | 1.4435(316L) / 1.4539 (904L) / 1.4571 (316Ti) / 2.4602 (Alloy C22)<br>Sandvik HP160 (ideal for very high pressure hydrogen), 1.4410 (SuperDuplex)<br>Standard seal types (manifold construction): FKM, FFKM, FVMQ<br>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 according to Sound Engineering Practice (SEP) | | |
| **Certifications and Approvals** | ATEX / IECEx Approvals for zone 0, 1 and 2<br>North American Approvals for Class I, Div. 1 and zone 2<br>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 of full set of services for large and complex engineering projects.<br>Typical services offered are, but not limited to:<br>▪ Certificates of origin and conformity, mill certificates<br>▪ Data books including WPAR, WQS, NDT, test & quality plans, functional testing, calibration procedures, customized packing, factory acceptance etc.<br>▪ Start up and commissioning services on/offshore | | |
| **Options** | Enclosure heating for high temperature applications<br>Mounting brackets: wall and floor mounting versions available<br>Cleaning for oxygen service<br>Full service painting to project specifications – consult factory | | |

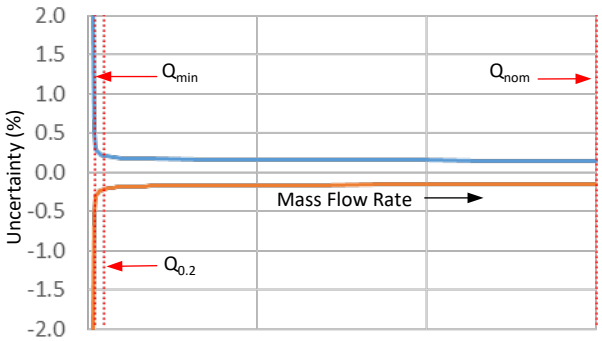
* At $Q_{nom}$, pressure drop across a parallel tube sensor will be approximately 1 – 3 bar (15 – 44 psi) for $H_20$. Sensors can be operated at higher flow rates but pressure drop will be higher. $Q_{min}$ is the recommended lowest flow rate. Sensors will measure flow rates lower than $Q_{min}$, but uncertainty will increase beyond 0.5 % of rate.

The flow specifications above relate to standard pressure, parallel tube, manifold sensor versions. Models with higher pressure ratings have increased wall thickness and will have higher pressure drops.

# Measurement Performance

## Standard Calibration A or B

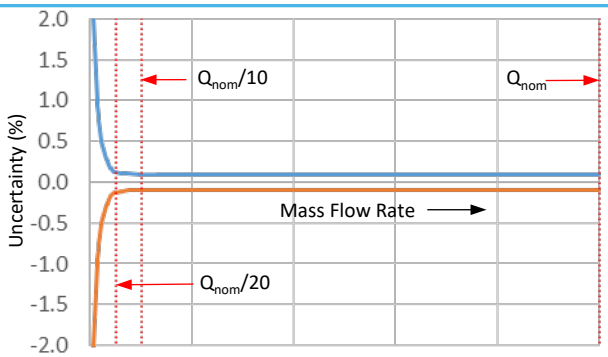
| | |
|---|---|
| A | **0.5 % Uncertainty**<br>±0.5 % uncertainty between $Q_{nom}$ and $Q_{min}$ |
| B | **0.2 % Uncertainty**<br>±0.2 % uncertainty between $Q_{nom}$ and $Q_{0.2}$ |




## Goldline (Selected Sensor) Calibration G or P

| | |
|---|---|
| G | **0.12 % Uncertainty**<br>±0.12 % uncertainty between $Q_{nom}$ and ($Q_{nom}$/20) |
| P | **0.1 % Uncertainty**<br>±0.1 % uncertainty between $Q_{nom}$ and ($Q_{nom}$/10) |

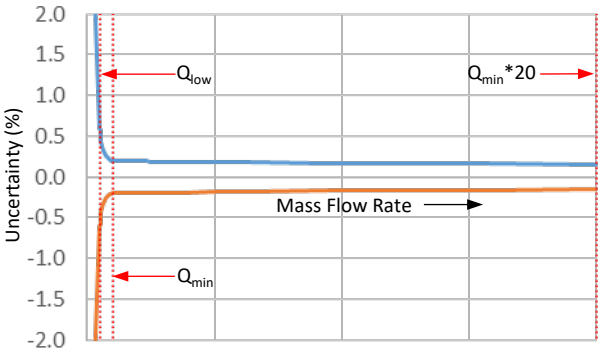
*Only for sensors with standard temperature and pressure range*
*Customized calibration services are available – consult factory*




## Low Flow (Selected Sensor) Calibration C or 1

| | |
|---|---|
| C | **1:20 Turn Up Calibration**<br>±0.2 % uncertainty between $Q_{min}$ and ($Q_{min}$*20) |
| 1 | **Low Flow Optimized Calibration***<br>±0.2 % uncertainty between $Q_{min}$ and ($Q_{min}$*20)<br>and ±0.6 % uncertainty between $Q_{min}$ and $Q_{low}$ |

*Only for sensors with standard temperature and pressure range*
** Low flow calibration is not available with RHM02L*




| | M02L | M03L | M04L |
|---|---|---|---|
| $Q_{nom}$ | 2 kg/min (4.4 lb/min) | 5 kg/min (13.2 lb/min) | 10 kg/min (33 lb/min) |
| $Q_{min}$ | 0.04 kg/min (0.11 lb/min) | 0.10 kg/min (0.22 lb/min) | 0.2 kg/min (0.44 lb/min) |
| $Q_{0.2}$ | 0.10 kg/min (0.22 lb/min) | 0.25 kg/min (0.55 lb/min) | 0.5 kg/min (1.10 lb/min) |
| $Q_{low}$ | N/A | 0.075 kg/min (0.17 lb/min) | 0.1 kg/min (0.22 lb/min) |

## 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

## Flow Measurement Repeatability

Standard ± 0.1 % of rate
Goldline ± 0.05 % of rate

## Temperature Performance

Better than ±1 °C

## Density Calibration (M02L, M03L, M04L)

| | |
|---|---|
| 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 with S or D, the sensor must be operated by an RHE with live density capability. Even with No Calibration, volumetric flow can still be calculated with an inferred density value based upon a manually entered norm density value and its temperature gradient.*

# 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, last page) or the process connection (for $P_{max}$ see published standards or manufacturer information).

| | RHM 02 | | RHM 03 | | RHM 04 | |
|---|---|---|---|---|---|---|
| **P1** | **316 L** | | **316 Ti** | | **316 L** | |
| | bar | psi | bar | psi | bar | psi |
| 50 °C / 122 °F | 300 | 4350 | 270 | 3916 | 170 | 2465 |
| 120 °C / 248 °F | 250 | 3625 | 240 | 3481 | 150 | 2175 |
| 210 °C / 410 °F | 230 | 3335 | 200 | 2900 | 120 | 1740 |
| 350 °C / 662 °F | 195 | 2828 | 170 | 2466 | 100 | 1450 |
| **P2** | **Super Duplex** | | **904 L** | | | |
| | bar | psi | bar | psi | | |
| 50 °C / 122 °F | 630 | 9135 | 372 | 5395 | | |
| 120 °C / 248 °F | 540 | 7830 | 300 | 4351 | | |
| 210 °C / 410 °F | 410 | 5945 | 250 | 3626 | | |
| 350 °C / 662 °F | | | 200 | 2901 | | |
| **P2 - Sandvik HP160** | | | bar | psi | bar | psi |
| 50 °C / 122 °F | | | 630 | 9135 | 630 | 9135 |
| 120 °C / 248 °F | | | 540 | 7830 | 540 | 7830 |
| 210 °C / 410 °F | | | 410 | 5945 | 410 | 5945 |
| **PH / P3 - Sandvik HP160** | | | bar | psi | bar | psi |
| 50 °C / 122 °F | | | 1070 | 15520 | 1070 | 15520 |
| 120 °C / 248 °F | | | 900 | 13050 | 900 | 13050 |
| 210 °C / 410 °F | | | 723 | 10485 | 723 | 10485 |
| **P3 - Super Duplex** | bar | psi | | | | |
| 50 °C / 122 °F | 1070 | 15520 | | | | |
| 120 °C / 248 °F | 900 | 13055 | | | | |
| 210 °C / 410 °F | 720 | 10445 | | | | |
| **P4 - Super Duplex** | bar | psi | bar | psi | bar | psi |
| 50 °C / 122 °F | 1379 | 20000 | 1379 | 20000 | 1379 | 20000 |
| 120 °C / 248 °F | 1220 | 17695 | 1220 | 17695 | 1220 | 17695 |
| 210 °C / 410 °F | 1150 | 16675 | 1150 | 16675 | 1150 | 16675 |

# Other Materials

Other wetted materials (e.g. Alloy C22, Inconel, Monel, 304 stainless steel, others) may be possible for chemical compatibility, lower pressure drop, abrasion allowance, other application specific requirements.

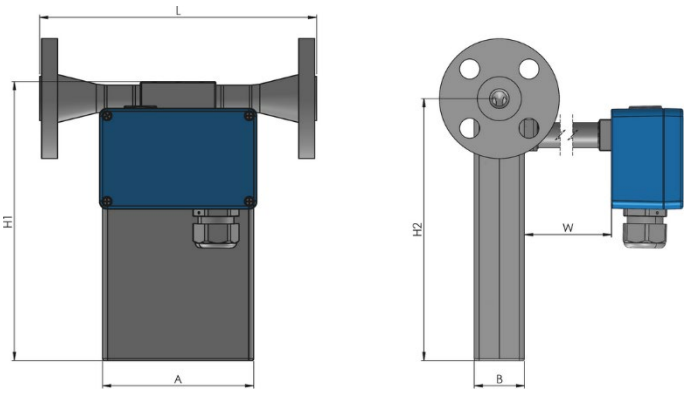
*Contact factory with specification for assessment and availability.*

# Mechanical Construction

Sensors are manufactured with two internal measurement tubes arranged side by side. In parallel or dual path sensors (order code P*xx*), these tubes are connected in parallel and the flowing fluid is split equally between them. In serial or single path sensors (order code S*xx*), the 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 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 and flange connections

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

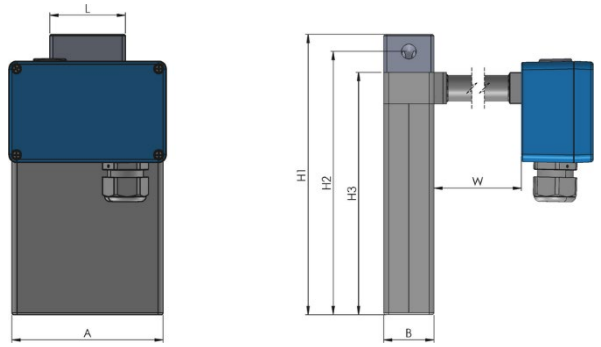



*Dimensions on next page*

| Process Connection | Face to Face (L) | | Order Code |
|---|---|---|---|
| | mm | in | |
| ANSI ½" 150#RF | 220 | 8.66 | A1 |
| ANSI ½" 300#RF | 220 | 8.66 | A2 |
| ANSI ½" 600#RF | 220 | 8.66 | A3 |
| ANSI ½" 1500#RF | 300 | 11.81 | A6 |
| ANSI ½" 1500#RTJ | 300 | 11.81 | R1 |
| DIN DN15/PN40 | 220 | 8.66 | D1 |
| DIN DN15/PN100 | 220 | 8.66 | D2 |
| DIN DN15/PN160 | 220 | 8.66 | D3 |
| JIS RF10K 15A (½") | 220 | 8.66 | J1 |
| JIS RF20K 15A (½") | 220 | 8.66 | J2 |

## Manifold design with seals and threaded connections

PM0/PH0/PV0: parallel/dual path
SM0/SH0/SV0*: serial/single path




*Dimensions on next page*

| Process Connection | Face to Face (L) | | Order Code |
|---|---|---|---|
| | mm | in | |
| Female Thread G ¼" | 60 | 2.36 | G1 |
| Female Thread ¼" NPT | 60 | 2.36 | N1 |
| Autoclave ⅜" MP (⁹⁄₁₆"-18 UNF female thread) only with _H0, _V0 | 70 | 2.76 | P2 |

### Material of Manifold Seals (Wetted Part)

Depending upon sensor temperature range, sensors are supplied with the following seal types as standard:

| Temperature Range | PM0 | SM0 | PH0 | SH0 | PV0 | SV0 |
|---|---|---|---|---|---|---|
| N1 | FKM | FKM | FKM | FKM | FKM | FKM |
| NA | FVMQ | FVMQ | FVMQ | FVMQ | FVMQ | FVMQ |
| E2* | FFKM | FFKM | | | | |

For non-standard sealing (e.g. FVMQ seals for N1) and seals for higher temperature ranges, please see Options / contact factory

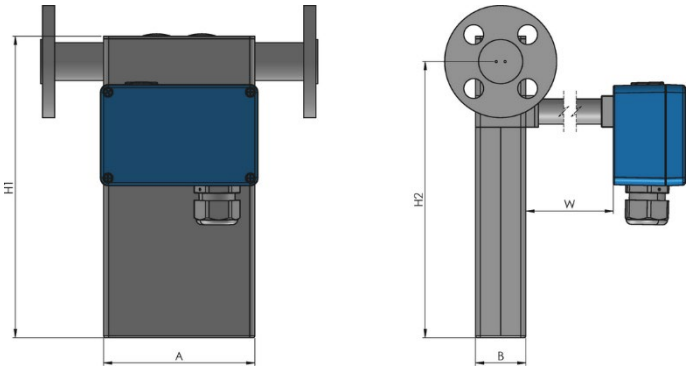
**PH0, PV0, SH0, SV0 manifolds are not recommended with E2 temperature range*

*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/hub connections

PF0: parallel/dual path, SF0: serial/single path



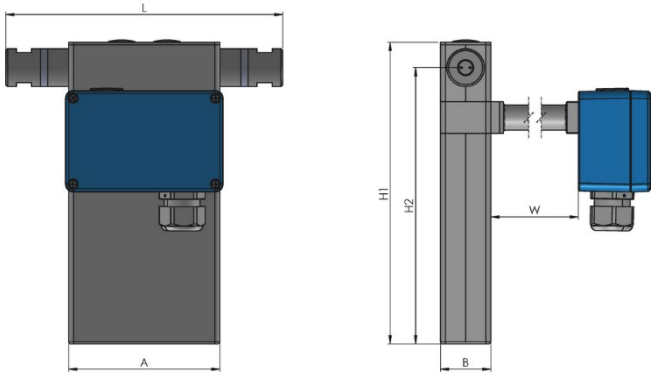

*Meter will be supplied with a wetted material facing disc and 1.4571 (316Ti) stainless steel backing flange for some material selections (e.g. Tantalum)*

| Process Connection | Face to Face (L) | | Order Code |
|---|---|---|---|
| | mm | in | |
| ANSI ½" 150#RF | 220 | 8.66 | A1 |
| ANSI ½" 300#RF | 220 | 8.66 | A2 |
| ANSI ½" 600#RF | 220 | 8.66 | A3 |
| ANSI ½" 1500#RF | 300 | 11.81 | A6 |
| ANSI ½" 1500#RTJ | 300 | 11.81 | R1 |
| ANSI ½" 2500#RF | 300 | 11.81 | A8 |
| DIN DN15/PN40 | 220 | 8.66 | D1 |
| DIN DN15/PN100 | 220 | 8.66 | D2 |
| DIN DN15/PN160 | 220 | 8.66 | D3 |
| Grayloc® Hub 1" GR4 *- only with PF0* | 300 | 11.81 | H3 |
| JIS RF10K 15A (½") | 220 | 8.66 | J1 |
| JIS RF20K 15A (½") | 220 | 8.66 | J2 |
| Sanitary ½" Triclamp DIN 32676 *- only with SF0* | 220 | 8.66 | S1 |

1. For other hub connections (e.g. Destec, Galperti, Techlok) please consult factory

## Seal-less design with threaded connections

PFT: parallel/dual path, SFT: serial/single path




| Process Connection | Face to Face (L) | | Order Code |
|---|---|---|---|
| | mm | in | |
| Female Thread G ¼" | 220 | 8.66 | G1 |
| Female Thread ¼" NPT | 220 | 8.66 | N1 |
| Swagelok® ¼" Tube Fitting (SS-400-14W) | 220 | 8.66 | W1 |
| Autoclave ⅜" MP (⁹⁄₁₆"-18 UNF female thread) | 220 | 8.66 | P2 |

| Dimensions | mm | in |
|---|---|---|
| A | 120 | 4.72 |
| B | 40 | 1.57 |
| H1 (PM0, PH0, PV0) | 222 | 8.74 |
| H1 (SM0, SH0, SV0) | 267 | 10.51 |
| H1 (PF0, SF0, PFT, SFT) | 239 | 9.41 |
| H2 | 208 | 8.19 |
| H3 | 192 | 7.56 |

*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.*

**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 x 100 x 61 mm (3.94 x 3.94 x 2.40 in)
- only for remote transmitter

W = 2 mm (0.08 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 = 100 mm (3.94 in) for all other configurations

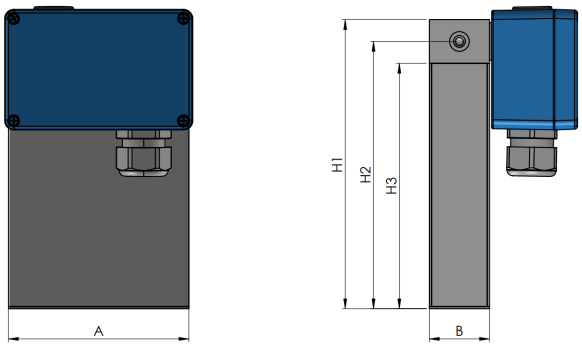
*NOTE: Junction boxes are supplied with M20 x 1.5 cable entries as standard. M25 x 1.5, ½" NPT, ¾" NPT cable entries are optionally available and must be ordered separately.*

Weight in standard manifold construction with female threads approx. 3.2 kg (7.1 lbs)
Weight in standard sealless construction and 150# flanges approx. 4.1 kg (9 lbs)
Shipping in carton box approx. 60 x 41 x 32 cm (24 x 16 x 13 in), gross weight with sealless construction, 150# standard flanges and RHE28 approx. 11 kg (24 lbs)

# RHM 04 Version For Hydrogen Dispensers (M04S)
# Mechanical Construction

## Sealless design with Autoclave thread connections

PMT: parallel/dual path




**Standard blue terminal box in Aluminum, size = 125 x 80 x 57 mm (4.92 x 3.15 x 2.24 in)**

Optional SS 316 box, size = 100 x 100 x 61 mm (3.94 x 3.94 x 2.40 in)
Terminal boxes are supplied with M20 x 1.5 cable entries as standard

| Process Connection | Face to Face (L) | | Order Code |
|---|---|---|---|
| | mm | in | |
| Autoclave ⅜" MP (⁹⁄₁₆"-18 UNF female thread) | 120 | 4.72 | P1 |

| Dimensions | mm | in |
|---|---|---|
| A | 120 | 4.72 |
| B | 40 | 1.57 |
| H1 (PMT) | 192 | 7.56 |
| H2 (PMT) | 178 | 7.01 |
| H3 (PMT) | 163 | 6.42 |

| | Flow Tube Pressure Rating | |
|---|---|---|
| **P2 - Sandvik HP160** | bar | psi |
| 50°C / 122°F | 630 | 9135 |
| 120°C / 248°F | 540 | 7830 |
| 210°C / 410°F | 410 | 5945 |
| **P3 - Sandvik HP160** | bar | psi |
| 50°C / 122°F | 1070 | 15520 |
| 120°C / 248°F | 900 | 13050 |
| 210°C / 410°F | 723 | 10485 |

## Options and Accessories

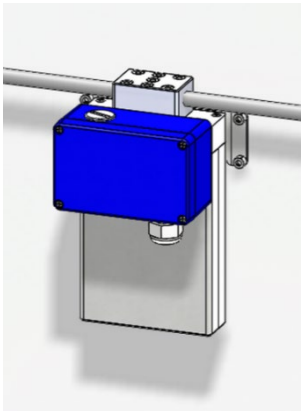
| Options Codes | |
|---|---|
| SM | Terminal Box and entire enclosure in SS 316 |
| P2 | Housing Purge ¼" NPT (2 pcs) |
| PD | Housing Purge ¼" NPT, with Integrated Rupture Disk |
| RD | Rupture Disk on Housing |
| FK | FFKM Manifold O-Ring Seals instead of Standard |
| FO | FVMQ Manifold O-Ring Seals instead of Standard |

| Options (order separately) | |
|---|---|
| ORHM-E1 | ½" NPT Terminal Box Cable Entry |
| ORHM-E2 | M25 x 1.5 Terminal Box Cable Entry (only with SM Electrical Connection) |
| ORHM-E3 | ¾" NPT Terminal Box Cable Entry |

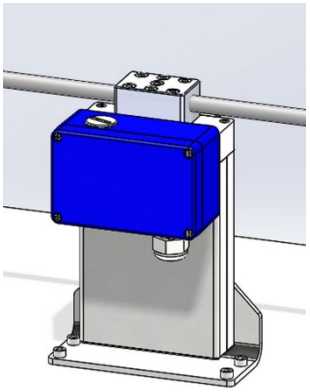
| Accessories | |
|---|---|
| ORHMS-M | Wall mounting bracket (highly recommended for low flow installations) |
| ORHMS-MF | Floor mounting bracket standard |
| ORHMS-MG | Floor mounting bracket upside down installation (not for serial manifold versions) |

## Options and Accessories (continued)

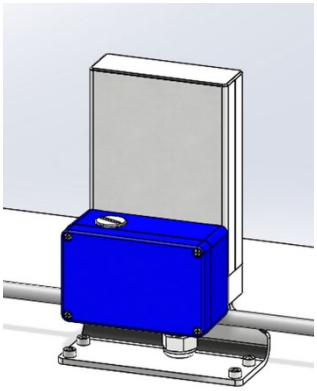
### Mounting Brackets for special Installation requirements



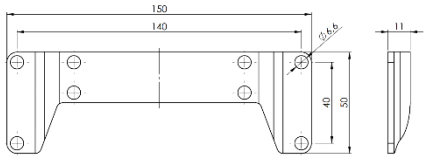
M
Wall Mount,
all Types except PMT

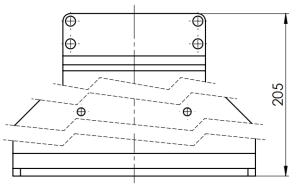


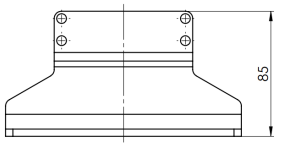
MF
Floor Mount



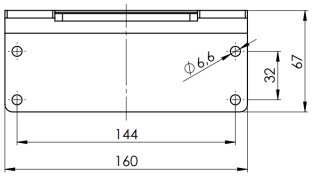
MG
Floor Mount

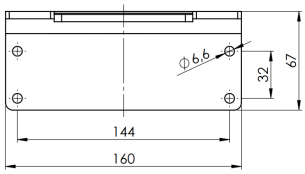


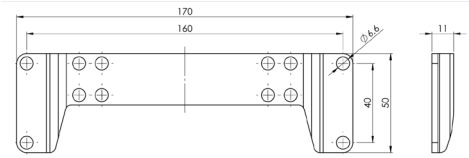




M
Wall Mount,
Type M04S_PMT

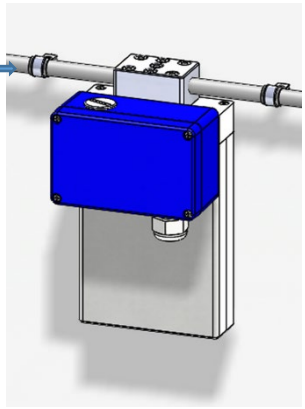



### Standard / Usual Installation Without Mounting Brackets

Pipe supports →



# RHM 02, 03 & 04 Part Number Code (M02L, M03L, M04L)

**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) |
| E3 | -196 to +50°C (-320 to +122°F) |
| H4 | -20 to +350°C (-4 to +662°F) |

**Pressure Code for pmax of Measuring Loops**

See pressure ratings page for ratings and codes

**Construction Type (pmax @ 120°C / 248°F) - manifold material is always 316 Ti**

| | |
|---|---|
| PM0 | Parallel manifold, pmax = 540 bar (7830 psi) |
| PH0 | Parallel manifold, pmax = 900 bar (13055 psi) |
| PV0 | Parallel manifold, pmax = 1220 bar (17695 psi, 20000 psi @ 50°C) |
| SM0 | Serial manif., pmax = 540 bar (7830 psi) (RHM03L,04L have a wetted SuperDuplex crossover link) |
| SH0 | Serial manif., pmax = 900 bar (13055 psi) (RHM03L,04L have a wetted SuperDuplex crossover link) |
| SV0 | Serial manif., pmax = 1220 bar (20000 psi @ 50°C) - only RHM015L,02L (wetted SuperDuplex crossover link) |
| PF0 | Parallel path, seal-less for flange and hub connections |
| PFT | Parallel path, seal-less for thread connections |
| SF0 | Serial path, seal-less for flange, hub and clamp connections |
| SFT | Serial path, seal-less for thread connections |

**Material of Measuring Loops**

| | |
|---|---|
| M1 | 1.4571 (316 Ti stainless steel) - standard for RHM03L |
| 35 | 1.4435 (316 L stainless steel) - standard for RHM02L, 04L |
| M0 | 1.4539 (904L stainless steel) |
| M3 | 2.4602 (Alloy C22) - PF0, SF0 only |
| 10 | 1.4410 (SuperDuplex) |
| HP | HP160 - RHM03L, 04L only |

**Process Connection**

See mechanical construction pages for available connections and codes

**Terminal Box Selection**

| | |
|---|---|
| JM | Coated aluminum TB, M25 cable entry for operation with RHE20/40 |
| JO | Coated aluminum TB, M25 cable entry for operation with RHE16 |
| SM | SS 316 TB, M25 cable entry (options available) |
| TM | No TB. 2m fixed / integral PTFE cable to RHE |
| J5 | Coated aluminum TB for integral RHE45, one or two M12 sockets |

**Options Codes**

See options listing for specific codes

**Hazardous Area Certifications**

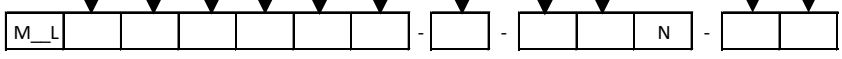
| | |
|---|---|
| NN | Without Ex Approval |
| A0 | ATEX/IEC Approvals Zone 0: Ex II 1G Ex ia IIC T1...T6 Ga |
| A1 | ATEX/IEC Approvals Zone 1: Ex II 2G Ex ib IIC T1...T6 Gb |
| A2 | ATEX/IEC Approvals Zone 2: Ex II 3G Ex nA IIC T1...T6 Gc |
| C0 | CSA Approvals USA-Canada Class I, Div. 1, Groups A, B, C, D |

**Pressure Design Compliance**

| | |
|---|---|
| NN | No specific design compliance required |
| SE | PED (SEP) [Europe] |

**Mass Flow, Density Calibration Selection**

See performance page for code options



# RHM 04 Version For Hydrogen Dispensers (M04S) Part Number Code

**Temperature Range**

NA -50 to +120°C (-58 to +248°F)

**Pressure Code for pmax of Measuring Loops (pmax @ 120°C / 248°F)**

P2 Pmax = 540 bar

P3 Pmax = 900 bar

**Construction Type (pmax @ 120°C / 248°F) - manifold material is always 316 Ti**

PMT Parallel, sealless, pmax = 900 bar. Connection part material SS316

**Material of Measuring Loops**

HP Sandvik HP160®

**Process Connection**

P1 Autoclave 3/8" MP (9/16-18 UNF female thread)

**Terminal Box Selection**

JM Coated aluminum TB, M25 cable entry for operation with RHE20/40

SM SS 316 TB, M25 cable entry (options available)

**Options Codes**

See options listing for specific codes

**Hazardous Area Certifications**

NN Without Ex Approval

A2 ATEX/IEC Zone 2: Ex II 3G Ex nA IIC T1...T6 Gc

A1 ATEX/IEC Zone 1: Ex II 2G Ex ib IIC T1...T6 Gb

A0 ATEX/IEC Zone 0: Ex II 1G Ex ia IIC T1...T6 Ga - only with Term. Box SM

C2 CSA Approvals US-Canada Class I, Zone 2, Gas IIC

C0 CSA Approvals US-Canada Class I, Div. 1, Groups A,B,C,D / Zone 1, Gas IIC

**Pressure Design Compliance**

NN No specific design compliance required

SE PED (SEP) [Europe]

**Performance Certification**

NN No Performance Certification

R9 OIML R139 approval for gas dispensers

MH MID MI002 approval for gas metering

**Mass Flow Calibration**

A Better 0.20% uncertainty

**Density Calibration**

N No direct density

| M04S | NA | | PMT | HP | P1 | | - | | - | | | | - | A | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

# Transmitter Range


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. Economical blind front versions of some transmitters are available where displays and keypads are not required. The wide range of sensors and transmitters provide tremendous options for system designers and end users alike.

## 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 40 Series family of transmitters. Rheonik 40 Series transmitters can connect to your system – no headache and no conversion needed.