OpreX™ Field Instruments

YOKOGAWA
Co-innovating tomorrow™

ROTA*MASS* Prime

Coriolis Mass Flow and Density Meter



ROTA*MASS* Total Insight

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The Rotamass Prime is a dual bent tube, Coriolis meter providing versatility with superior turndown and low-pressure loss. Applications include batching, blending, chemical recovery, continuous reaction, in-line concentration and density measurement, catalyst feed, filling and dosing, net oil computing, palm oil, and process control.

Performance

- Precise flow rate measurement over wide flow range of liquids or gases. Also handling multi-phase fluids and liquid with gas content
- Contribution to energy-saving operation by low pressure loss design with short tube paths and large tube diameter
- Cost effective short face-to-face length or customized installation length options
- Optimal decoupling of the core measuring element against external stresses and vibrations
- Universal power supply to be effortlessly installed all over the world

Features on Demand

- Predictive maintenance with Total Health Check
- Tube Health for in-line verification that can be individually adapted to your process conditions
- Benefit from Viscosity function and capability to handle high viscous process fluids
- Advanced concentration measurement function for complex applications
- Net Oil Computing function provides real-time measurements of net oil and water cut based on API standards
- Gas content handling and slug detection
- Batching function
- Dynamic Pressure Compensation
- NTEP for custody transfer applications

Technical Data

Measuring Range Full Scale (for liquids)

Size	Full range (lb/min)
Prime 25	0 to 85
Prime 40	0 to 260
Prime 50	0 to 1100
Prime 80	0 to 2800
Prime 1H	0 to 9400

Zero Point Stability

Model	Zero Point Stability (lb/min)
Prime 25	0.0012
Prime 40	0.0035
Prime 50	0.015
Prime 80	0.093
Prime 1H	0.32

Materials of Wetted Parts

Sensor
Stainless steel 1.4404/316L

Accuracy

Liquids:
±0.1% of measured value (Ultimate transmitter)
±0.2% of measured value (Essential transmitter)

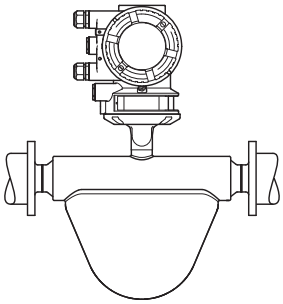
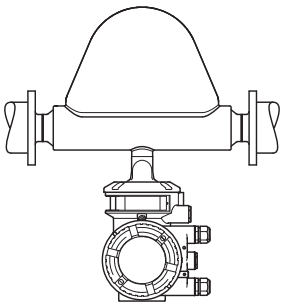
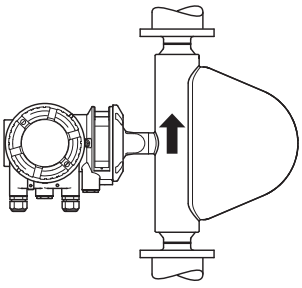
Gases:
±0.35% of measured value (Ultimate transmitter)
±0.75% of measured value (Essential transmitter)

Density:
0.0005 g/cm³ (Ultimate transmitter)
0.004 g/cm³ (Essential transmitter)

Process Conditions

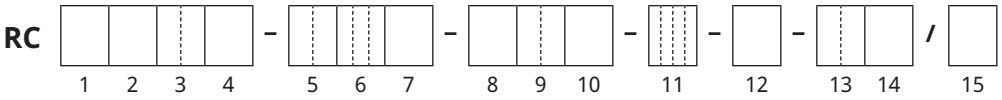
Temperature	-94 to 392°F (-70 to 200°C)
Pressure	1,450 psi (100 bar)
Ambient	-40 to 140°F (-40 to 60°C)

Installation

Fluid	Installation Position
Liquid	Horizontal, measuring tubes at bottom 
Gas	Horizontal, measuring tubes at top 
Liquid/Gas	Vertical, direction of flow towards the top (recommended) 

Catalog Code

All available properties of the Rotamass Coriolis flow meter are specified by means of a model code. One model code position may include several characters depicted by means of dashed lines. Additional options available / please consult factory for all certificate and testing options. Access our free online configurator tool at: www.flowconfigurator.com.



Position 1	Transmitter
E	Essential (basic function)
U	Ultimate (high function)
N	Spare sensor without transmitter, combinable with Rotamass TI transmitter

Position 2	Sensor
P	Prime

Position 3	Meter size
25	(1”) Maximum mass flow: 85 lb/min
40	(1.5”) Maximum mass flow: 260 lb/min
50	(2”) Maximum mass flow: 1100 lb/min
80	(3”) Maximum mass flow: 2800 lb/min
1H	(4”) Maximum mass flow: 9400 lb/min

Position 4	Material wetted parts
S	Stainless steel 1.4404/316L

Position 5	Process connection size
15	DN15, ½ inch
25	DN25, 1 inch
40	DN40, 1½ inch
50	DN50, 2 inch
80	DN80, 3 inch
1H	DN100, 4 inch

Position 6	Process connection type
BA1	CL150 ASME B16.5, raised face (RF)
BA2	CL300 ASME B16.5, raised face (RF)
BA4	CL600 ASME B16.5, raised face (RF)
CA4	CL600 ASME B16.5, ring joint (RJ)

Position 7	Sensor housing material
0	Stainless steel 1.4301/304, 1.4404/316L

Position 8	Process temperature range
0	Standard temperature range

Position 9	Mass flow & density accuracy
C7	Liquid: 0.1% mass flow + 0.004 g/cm3
D7	Liquid: 0.15% mass flow + 0.004 g/cm3
E7	Liquid: 0.2% mass flow + 0.004 g/cm3
30	Gas: 0.35% mass flow

Position 10	Design and housing
0	Integral type; Aluminum coated
A	Remote type; Aluminum coated
J	Remote type; Stainless steel

Position 11	Ex Approvals
NN00	Non Ex proof
FF11	FM XP + IS; Gr. A-G (USA & CAN)
FF12	FM XP + IS; Gr. C-G (USA & CAN)

Position 12	Cable entries
2	ANSI ½ in NPT

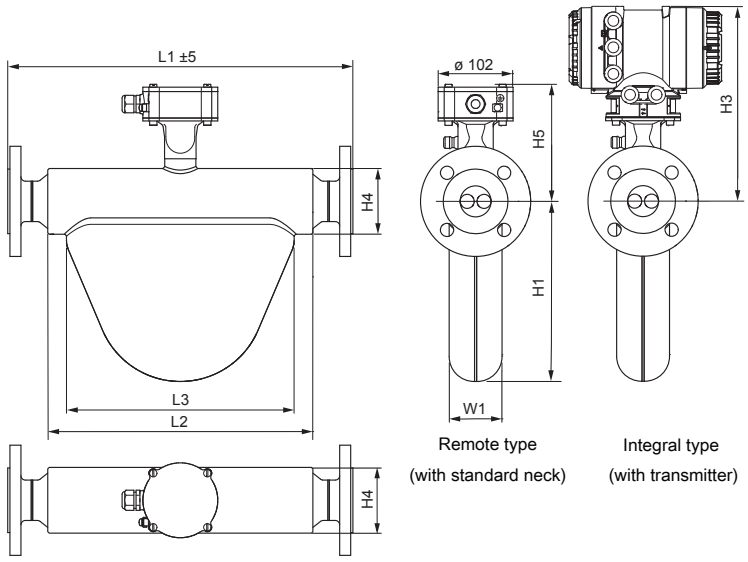
Position 13	Communication type and I/O
JA	1 active current output HART, 1 passive pulse or status output
JB	2 active current outputs one with HART, 2 passive pulse or status outputs
M6	Modbus output, 1 passive pulse or status output, 1 active current output
T3	PROFINET over APL, intrinsically safe, 1 passive pulse output

Position 14	Display
1	with display

Position 15	Additional options
BG	Tag number on nameplate
CL	Customer-specific installation length
CS	CRN Canadian Registration Number
C52	Net Oil Computing per API standard
CST	Concentration
TC	Tube health check
VM	Viscosity function liquids
Q20	NTEP approval
L005	5m/16.4ft standard remote sensor cable
L010	10m/32.8ft standard remote sensor cable

Dimensions Inches (millimeters)

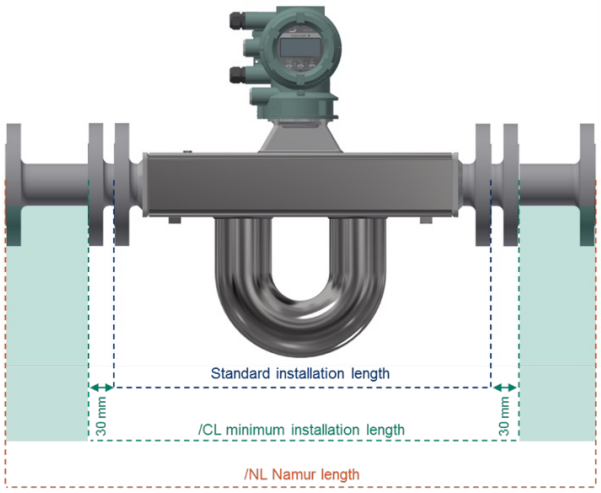
Note: Dimensions—Inches to the nearest tenth (millimeters to the nearest whole mm), each independently dimensioned from respective engineering drawings.



*The overall length (L1) of the sensor depends on the selected process connection (type and size).

Model	L2	L3	H1	H3	H4	H5	W1
Prime 25	7.5 (190)	6.5 (165)	4.6 (117)	10.6 (268)	2.2 (56)	5.4 (138)	1.7 (42)
Prime 40	8.9 (227)	7.7 (195)	5.7 (145)	10.9 (277)	2.8 (71)	5.8 (148)	2 (50)
Prime 50	14.2 (361)	12.2 (310)	9.6 (245)	11.4 (289)	3.5 (90)	6.3 (159)	2.8 (72)
Prime 80	17.9 (455)	15.7 (400)	13.1 (333)	11.7 (296)	4 (102)	6.6 (167)	3.8 (96)
Prime 1H	26.9 (682)	24.4 (620)	19 (482)	13 (330)	6.6 (168)	7.9 (201)	5.9 (150)

Custom Length (/CL)



Allows customers to specify a custom face-to-face or overall installation length for the meter instead of using standard manufacturer (NAMUR or catalog) lengths. This is helpful as a drop-in replacement when retrofitting existing piping without cutting or re-welding lines, thus minimizing downtime and reducing rework cost.

ROTAMASS Total Insight

ROTAMASS supreme



Superior performance under demanding conditions

ROTAMASS intense



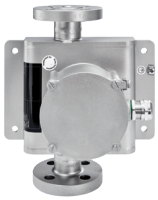
For high pressure applications

ROTAMASS prime



Versatility with superior turndown and low pressure loss

ROTAMASS nano



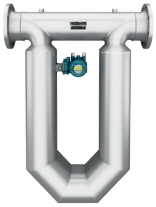
For low flow applications

ROTAMASS hygienic



For food & beverage, biotechnology and pharmaceutical utility applications

ROTAMASS giga



Flexible installation for high flow applications

Essential



For general purpose application

Ultimate



For demanding & critical application

Scan to learn more about ROTA*MASS* Total Insight Coriolis Mass Flow and Density Meters

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