Coriolis Mass Flow Meter

Mass Flow, Density, Temperature and Volume Flow Meter

FMC-5000 Series

2 YEAR WARRANTY

- **15 to 150 mm (½ to 6") Sizes**
- **Mass Flow Rate, Volume, Density and Temperature Measurements**
- **Rugged Meters with No Moving Parts Results in Minimal Maintenance**
- **Accuracy Over a Wide Flow Range From a Single Meter Optimizes Plant Efficiency**
- **No Flow Conditioning or Straight Pipe Runs Required, Making Installation Simplified and Less Expensive**

FMC-5000 shown smaller than actual size.

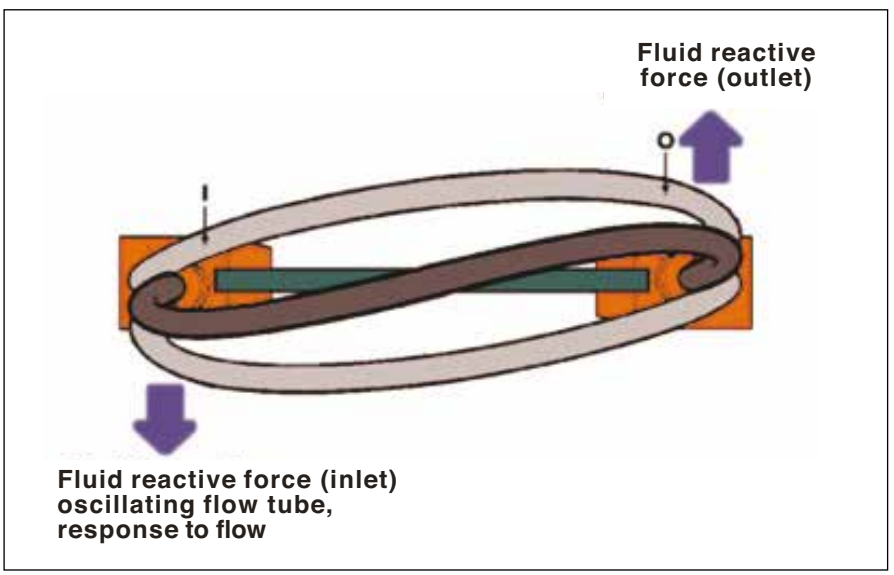
The FMC-5000 Coriolis Mass Flow Meter is designed according to the Coriolis Force Principle. It is widely used for flow measurements and custody transfer in many industries such as petroleum, petrochemical, chemical, pharmaceutical, pulp and paper, food and dairy, and more.

As an advanced flow and density measurement instrument, it is widely used in the measurement of liquids, gases and slurries, and garners a high reputation among customers around the globe. Coriolis meters are typically used in applications like batch control, blending, filling, dosing, custody transfer, process gas measurements, and more.

The FMC-5000 Series Coriolis Meter is designed according to the principle of Coriolis force. Under the alternating current effect, the electromagnetic coils mounted on the measuring tube will make two parallel measuring tubes vibrating at a certain fixed frequency. Whenever mass (either liquid or gas) flows through the measuring tubes, Coriolis force is generated, causing a “bending” or “deflection” in the top of the tubes.

This deflection is sensed as a phase shift between two electronic pick-ups mounted on the tubes. The degree of phase shift is directly proportional to the mass flow within the tubes.

The mass flow rate can be calculated by detecting the phase shift of the tubes. The temperature is also measured and used for compensation.



Specifications

Flow Range: See charts below
Connection: ANSI, DIN, JIS, or sanitary flanges
Maximum Pressure: 16 bar (230 psi), [Optional: 25 bar (360 psi), 40 bar (580 psi) and 63 bar (913.7 psi)]
Body Material: 304 Stainless Steel
Measuring Tube Material: 316 L SS
Process Temperature Range:
- **Integrated Type:** -50 to 125°C (-58 to 257°F)
- **Remote Type (-R):** -50 to 200°C (-58 to 392°F)

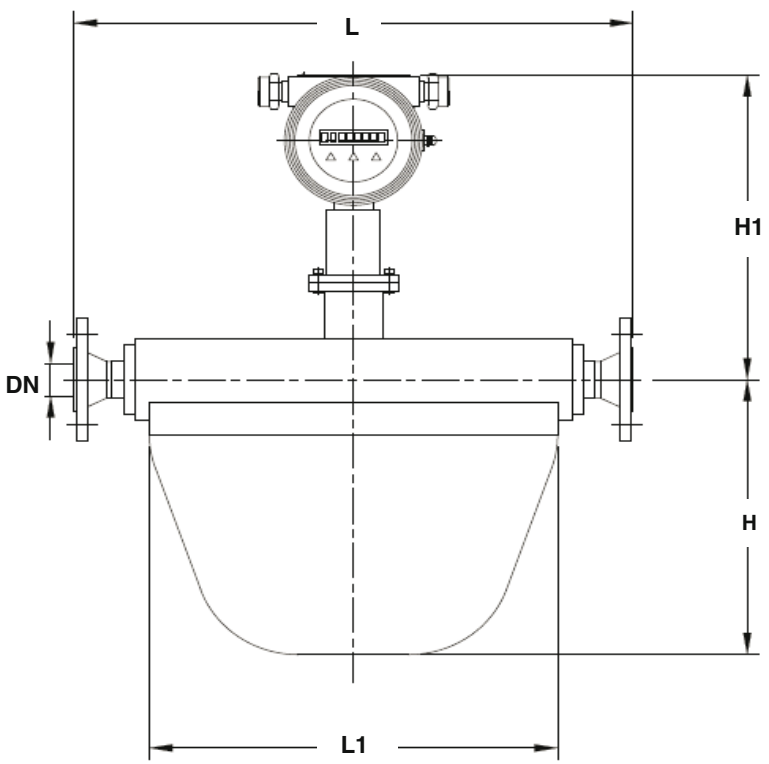
Ambient Temperature: -40 to 55°C (-40 to 131°F)
Working Humidity: (5 to 95%) RH at 25°C (77°F)
Electrical Connections: ½ NPT conduit

Flow Accuracy/Repeatability:
- **FMC-5100:** 0.1/0.05% (Liquid Only)
- **FMC-5200:** 0.2/0.1% (Liquid Only)
- **FMC-5500:** 0.5/0.25%

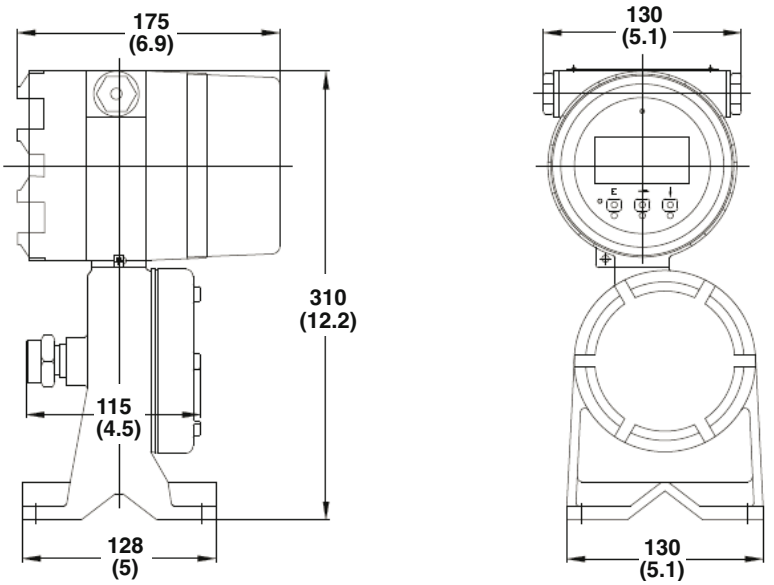
Density Measuring:
- **Range:** 0.2 to 3.0 g/cm^3
- **Error:** ± 0.002 g/cm^3
- **Repeatability:** 0.001 g/cm^3

Temperature Accuracy: ±1.0°C
Protection: NEMA 4X (IP65)
Approvals: CE, RoHS (Pending)
Communications: RS485 (RTU Modbus®), HART® (-HART option)
Pulse Output: 0 to 10 kHz, ± 0.075% Full Scale
Current Output: 4 to 20 mA, 0.005% Full Scale
Power Supply: 18 to 36 Vdc, 85 to 265 Vac (-AC option), 15 W
Pressure Loss Curves: Available in operator's manual

Micro-Bend Type



Remote Type Transmitter.



Dimensions: mm (inch)

Model	Size DN (ANSI)	Weight kg (lb)
FMC-5xx1	15 (½)	12 (26.5)
FMC-5xx2	25 (1)	15 (33.1)
FMC-5xx3	40 (1½)	25 (55.1)
FMC-5xx4	50 (2)	38 (83.8)
FMC-5xx5	80 (3)	78 (172)
FMC-5xx6	100 (4)	135 (297.6)
FMC-5xx7	150 (6)	265 (584.2)

Dimensions

Model	Size DN (ANSI)	L (<40Mpa), mm (inch)	L (>63Mpa), mm (inch)	L1, mm (inch)	H, mm (inch)	H1 (integral), mm (inch)	H1 (remote), mm (inch)
FMC-5xx1	15 (½)	400 (15.75)	414 (16.3)	280 (11.02)	184 (7.24)	298 (11.73)	213 (8.39)
FMC-5xx2	25 (1)	500 (19.68)	536 (21.1)	360 (14.17)	250 (9.84)	302 (11.89)	218 (8.58)
FMC-5xx3	40 (1½)	600 (23.62)	634 (24.96)	460 (18.11)	300 (11.81)	315 (12.40)	230 (9.06)
FMC-5xx4	50 (2)	800 (31.50)	828 (32.6)	640 (25.2)	410 (16.14)	325 (12.80)	240 (9.45)
FMC-5xx5	80 (3)	900 (35.43)	928 (36.54)	700 (27.56)	490 (19.29)	350 (13.78)	265 (10.43)
FMC-5xx6	100 (4)	1130 (44.49)	1156 (45.51)	860 (33.86)	660 (25.98)	370 (14.57)	285 (11.22)
FMC-5xx7	150 (6)	1410 (55.51)	1450 (57.09)	1200 (47.24)	900 (35.43)	400 (15.75)	316 (12.44)

Liquid

To Order			
Model No.	Compact Liquid Coriolis Meters with 0.5% Accuracy		
	Mounting mm (inch)	Flow Range (kg/h)	Stability of Zero Point (kg/h)
FMC-5501LA	15 (½) ANSI	100 to 3000	0.3
FMC-5502LA	25 (1) ANSI	300 to 8000	0.8
FMC-5503LA	40 (1½) ANSI	1000 to 24,000	3
FMC-5504LA	50 (2) ANSI	2000 to 45,000	5
FMC-5505LA	80 (3) ANSI	2000 to 120,000	12
FMC-5506LA	100 (4) ANSI	6000 to 200,000	20
FMC-5507LA	150 (6) ANSI	10,000 to 500,000	50
Model No.	**Compact Liquid Coriolis Meters with 0.2% Accuracy**		
FMC-5201LA	15 (½) ANSI	150 to 3000	0.3
FMC-5202LA	25 (1) ANSI	400 to 8000	0.8
FMC-5203LA	40 (1½) ANSI	1200 to 24,000	3
FMC-5204LA	50 (2) ANSI	2500 to 45,000	5
FMC-5205LA	80 (3) ANSI	5500 to 120,000	12
FMC-5206LA	100 (4) ANSI	10,000 to 200,000	20
FMC-5207LA	150 (6) ANSI	25,000 to 500,000	50
Model No.	**Compact Liquid Coriolis Meters with 0.1% Accuracy**		
FMC-5101LA	15 (½) ANSI	200 to 3000	0.3
FMC-5102LA	25 (1) ANSI	600 to 8000	0.8
FMC-5103LA	40 (1½) ANSI	2400 to 24,000	3
FMC-5104LA	50 (2) ANSI	5000 to 45,000	5
FMC-5105LA	80 (3) ANSI	8000 to 120,000	12
FMC-5106LA	100 (4) ANSI	15,000 to 200,000	20
FMC-5107LA	150 (6) ANSI	50,000 to 500,000	50

Compressed Air/Gas

Model No.	Compact Air/Gas Coriolis Meters with 0.5% Accuracy		
	Mounting mm (inch)	Flow Range (kg/h)	Stability of Zero Point (kg/h)
FMC-5501GA	15 (½) ANSI	75 to 3000	0.12
FMC-5502GA	25 (1) ANSI	200 to 8000	0.32
FMC-5503GA	40 (1½) ANSI	800 to 32,000	1.2
FMC-5504GA	50 (2) ANSI	1250 to 50,000	2
FMC-5505GA	80 (3) ANSI	3500 to 140,000	6
FMC-5506GA	100 (4) ANSI	5000 to 200,000	8
FMC-5507GA	150 (6) ANSI	12,500 to 500,000	20

Air at STP

Model No.	Compact Air at STP Coriolis Meters with 0.5% Accuracy		
	Mounting mm (inch)	Flow Range (kg/h)	Stability of Zero Point (kg/h)
FMC-5501GA	15 (½) ANSI	62.5 to 2500.0	0.11
FMC-5502GA	25 (1) ANSI	166.7 to 6666.7	0.28
FMC-5503GA	40 (1½) ANSI	666.7 to 26,666.7	1
FMC-5504GA	50 (2) ANSI	1041.7 to 41,666.7	1.6
FMC-5505GA	80 (3) ANSI	2916.7 to 116,666.7	5
FMC-5506GA	100 (4) ANSI	4166.7 to 166,666.7	6.7
FMC-5507GA	150 (6) ANSI	10,416.7 to 416,666.7	18

Comes complete with operator's manual.

*For meters with other than ANSI flanges, change the "**A**" at the end of the model number to "**D**" for DIN flanges, "**J**" for JIS flanges or "**S**" for sanitary flanges (liquid only), no additional charge.*

*To replace the RS485 communications with HART communications add "**-HART**" to the model number, for an additional charge.*

*For units with remote mounted display/transmitter add "**-R**" to the model number, for an additional charge.*

***Ordering Example: FMC-5203LA-HART-R,** remote mount meter, 1½" ANSI flanges, 1000 to 24,000 kg/h, DC power and HART communications.*