MFC608 Coriolis Mass Flowmeter

Features

- Directly measures mass flow, unaffected by temperature, pressure, or flow velocity
- Accuracy class 0.15, with good repeatability
- High metering stability
- Wide turn down (range ratio)
- Integral design, small size and easy installation
- Measuring homogeneous MF
- Measuring homogeneous fluids with general and high viscosity, non-Newtonian UF
- Displaying mass and volume flow, cumulative flow, density, and temperature
- Excellent corrosion resistance with material options for measuring various corrosive fluids
- Multiple flow tubes and velocity ranges available to meet all process and application measurements
- Various pressure port sizes, transmitter mounting options, and a wide range of output signals for optimal system compatibility

Introduction

MFC608 Coriolis Mass Flowmeter (the mass flowmeter) is a smart metering instrument developed and manufactured using advanced international technology. It features high accuracy, reliability, stability, and long service life. MICROSENSOR emphasizes every process, including construction, materials, manufacturing, assembly, and testing. Utilizing the 37 m water tower as a stabilizing device for flow calibration and a specialized production line for mass flowmeter. Additionally, dedicated software and hardware were developed for the mass production, ensuring sustained high standards. It is widely used in energy metering (oil, natural gas, H_2), environmental engineering (exhaust gas, waste liquids, wastewater), and process industries (power generation, chemicals, textiles, food, and pharma).

Operating Principle

The Coriolis Mass Flowmeter operates on the Coriolis effect, inducing vibration in a measuring tube through which the medium flows. The sensor detects variations in frequency, phase shift, and amplitude of the vibration to directly measure the mass of the medium and calculate its density. Additionally, it measures multiple process variables, including mass flow, volumetric flow, density, and temperature.

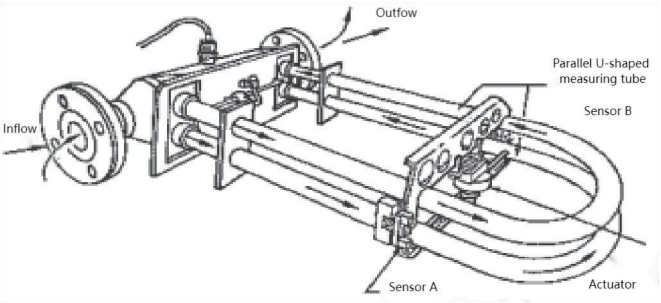


Figure 1 Operating Principle

Specifications

Diameter	DN1 ~ DN250
Accuracy	Class 0.5 (gas), 0.2, 0.15
Repeatability	0.25%, 0.1%, 0.075%
Density accuracy	±0.001g/cm^3
Temperature accuracy	±1℃
Turn down (range ratio)	20:1 (10:1)
Construction types	Integral, remote
Rated pressure	≤ 40bar
Measuring tube (wetted parts)	316L
Sensor	304
Converter housing	Cast aluminum
Power supply	220V AC
	24V DC
Output signal	4mA ~ 20mA DC
	Pulse output
	HART
	RS485 (Modbus protocol)
IP rating	IP65, IP67
Ambient temperature	-20℃~ 55℃
Storage temperature	-25℃~ 55℃
Relative humidity	5% ~ 95%
Explosion-proof mark	Ex db ia IICT6 Gb, Ex ia tb IIIc T80℃ Db (-40℃ ~ +55℃)

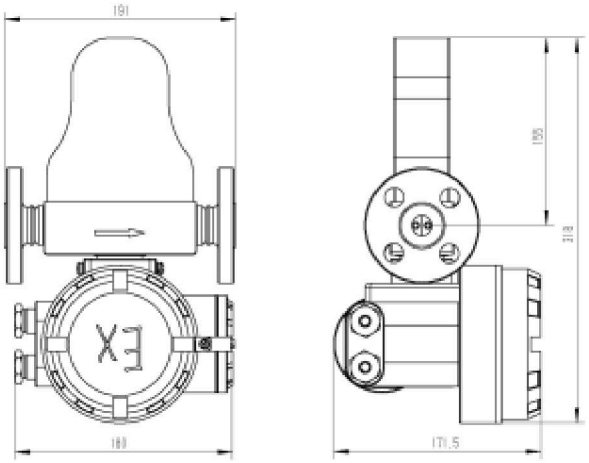
Flowmeter Diameter - Flow Rate - Pressure - Accuracy

SN	Model	Nominal diameter		Medium temp.	W.P	Max.flow-rate		Connection
		inch	mm			kg/min	Lb/min	
P	04P	1/8"	DN4	-40℃~ +70℃	< 900bar	12	26	13/16-16UNF Female
	08P	1/4"	DN8		< 450bar	25	55	13/16-16UNF Female
	15P	1/2"	DN15		≤ 250bar	55	121	G3/4" Female
	20P	3/4"	DN20		≤ 250bar	75	165	G1" Female
L	08L	1/4"	DN8	-200℃~ +80℃	≤ 40bar	25	55	HG/T 20592 DN15 PN40 Flange
	25L	1"	DN25			220	485	HG/T 20592 DN25 PN40 Flange
	40L	1-3/4"	DN40			500	1102	HG/T 20592 DN40 PN40 Flange
	50L	2"	DN50			850	1874	HG/T 20592 DN50 PN40 Flange
R	04R	1/8"	DN4	-40℃~ +85℃	≤ 40bar	10	22	13/16-16UNF Female
	08R	1/4"	DN8			25	55	HG/T 20592 DN15 PN40 Flange
	15R	1/2"	DN15			70	154	HG/T 20592 N15 PN40 Flange
	20R	3/4"	DN20			120	256	HG/T 20592 DN20 PN40 Flange
	25R	1"	DN25			220	485	HG/T 20592 DN25 PN40 Flange
	40R	1-3/4"	DN40			500	1102	HG/T 20592 DN40 PN40 Flange
	50R	2"	DN50			850	1874	HG/T 20592 DN50 PN40 Flange
	80R	3"	DN80			2900	4409	HG/T 20592 DN80 PN40 Flange
	100R	4"	DN100			5300	6614	HG/T 20592 DN100 PN40 Flange
Z	15Z	1/2"	DN15	-40℃~ +85℃	≤ 40bar	70	154	HG/T 20592 DN15 PN40 Flange
	25Z	1"	DN25			220	485	HG/T 20592 DN25 PN40 Flange
	40Z	1-3/4"	DN40			500	1102	HG/T 20592 DN40 PN40 Flange
	50Z	2"	DN50			850	1874	HG/T 20592 DN50 PN40 Flange

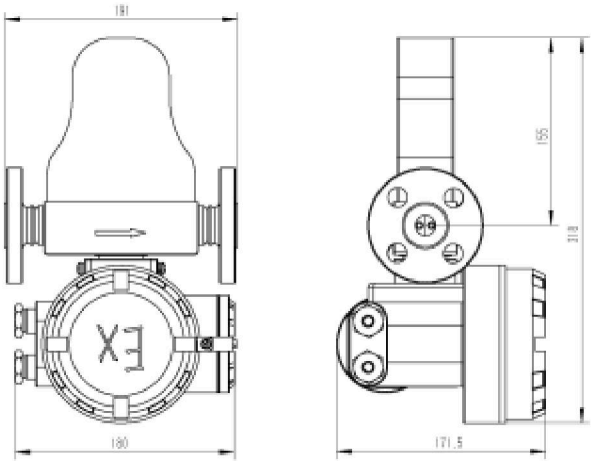
Outline Construction

Partial dimensions. Unit: mm; Error: ±2mm.

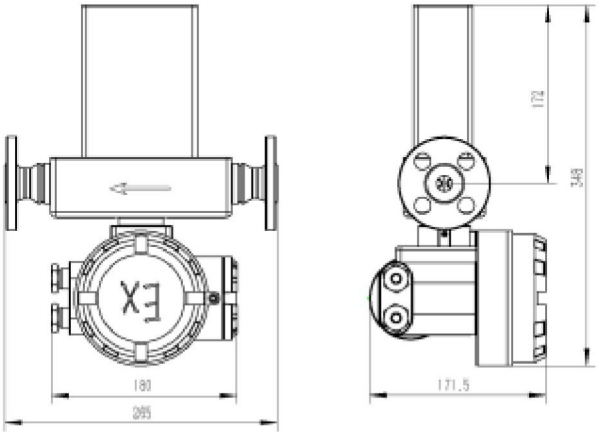
DN4



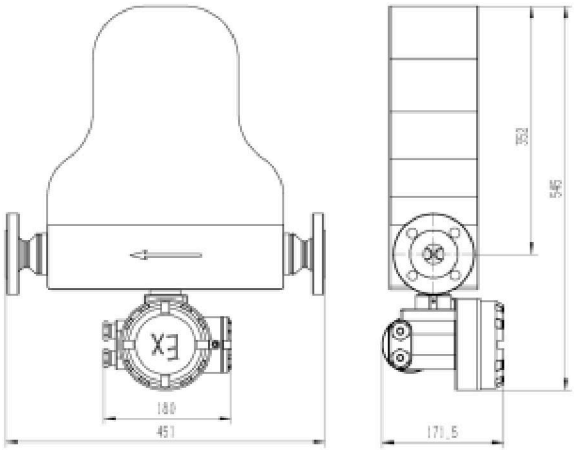
DN8



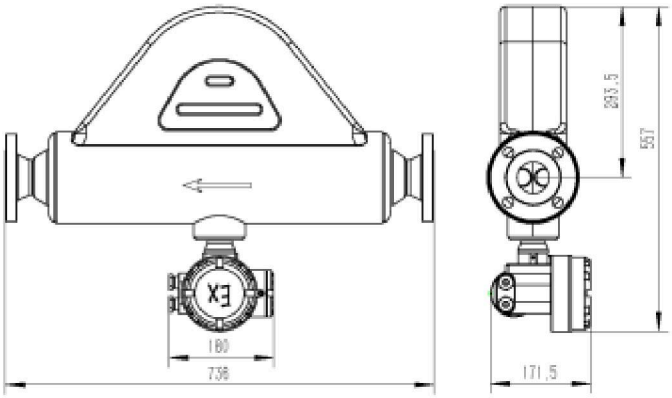
DN15



DN25



DN50



Order Guide

Types	Items	Code	Descriptions
Composition		MFC608 - Sensor Specifications - Construction Types - Converter Specifications - Options	
	Model	MFC608	Coriolis Mass Flowmeter
Sensor specifications	Sensor types ①	U	U-bend
		W	Gentle bend
		S	Straight
	Diameter	001	DN1
		002	DN2
		003	DN3
		004	DN4
		008	DN8
		010	DN10
		015	DN15
		020	DN20
		025	DN25
		032	DN32
		040	DN40
		050	DN50
		065	DN65
		080	DN80
		100	DN100
		125	DN125
		150	DN150
		200	DN200
		250	DN250
	Rated pressure	P1	10bar
		P2	16bar
		P3	25bar
		P4	40bar
	Process connection	F	Flanged
		L	Threaded
		K	Clamp-on
	Sensor body	2	304 SS
	Measuring tube (wetted parts)	1	316L
			Hastelloy Hc
	Temperature range	L1	–20℃~ 80℃
		L3	–196℃~ 40℃
		H2	–20℃~ 200℃
	IP rating	1	IP65
		2	IP67 (Only for Integral)
Construction types		1	
		2	Remote
Converter specifications	Accuracy	A	Class 0.2
		B	Class 0.5
		G	Class 0.15
	Converter housing	1	Cast aluminum
	Electrical connection	M	M20×1.5 Female
		N	NPT1/2 Female (adapter)
	Output signal	1	4mA ~ 20mA/ pulse
		3	4mA ~ 20mA/ pulse +HART
		4	4mA ~ 20mA/ pulse +RS485 (Modbus)
	Power supply	1	220VAC
		3	24V DC

Types	Items	Code	Descriptions
Options	Options (multiple available)	/N	Standard
		/D	Explosion-proof (Flameproof, Intrinsically safe, Dust explosion proof)
		/C	CNAS calibration report
		/S	Third-party inspection report
		/CS	CCS
		/BS	ABS
		/NV	DNV
		/F1	Carbon steel and stainless steel flange
		/F2	304 SS companion-flange
		/F3	316L SS companion-flange
		/M1	M (Custom-made)
		/L5	Cable length: L5, with a default 5 m remote cable, maximum 15m. ②

* For items not covered in the order guide, please contact the MICROSENSOR.

Notes:

① Gentle-bend and straight are custom-made items; please consult with technicians to confirm the specifications.

② Cable length is available in 5 m increments (L10, L15).

Example: MFC608-U015P2F21L11-1-A1M43-D

Description: MFC608 Coriolis Mass Flowmeter, DN15 diameter; U-bend sensor, rated pressure 16bar, flanged, sensor body 304 SS, measuring tube (wetted parts) 316L, temperature range -20°C~ 80°C, IP65, integral, accuracy class 0.2, converter housing cast aluminum, electrical connection M20*1.5, pulse / 4-20mA + RS485, power supply 24V DC, with an option as explosion-proof.

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