

SH-CMF-FE Series Micro Coriolis Mass Flow Meters & Controllers



Conventional Coriolis flow meters are used for large flow measurements, such as 50Mt/h, 100 Mt/h or even higher. . SH-CMF-FE successfully applies Coriolis flow technology to very low flow measurement, such as 40 g/h, and integrates PID controller and batch function inside to realize flow control or quantitative feeding.

Performance and Principle

Coriolis mass flow meters are highly regarded for their measurement accuracy and independence from fluid properties. The SH-CMF-FE contains a uniquely shaped single-loop transducer that forms part of the oscillation system. When the micro flow rate fluids flows through the sensor circuit, the Coriolis force causes a variable phase shift, which is detected by the sensor and transmitted to the integrated DSP processor on the circuit board for calculation. The output signal generated by this variable phase shift is strictly proportional to the actual mass flow, which can achieve unparalleled ultra-high performance even under the conditions of changing pressure, temperature, density, conductivity and viscosity. SH-CMF-FE simultaneously measures and outputs fluids mass flow, fluid density and temperature.

Laboratory and Industrial Usage

The SH-CMF-FE series mass flow measuring instruments offer two levels of accuracy: $\pm 0.25\%$ for liquid measurements or $\pm 0.5\%$ for gas measurements. It is enough to meet the needs of most customers. It can be used in various experiments in laboratories and in industrial environments with complex working conditions.

Applications

The SH-CMF-FE meter can be used in process fluid measurement or control systems in the food, (petro)chemical and pharmaceutical industries, fermentation equipment, semiconductor processing and fuel cell technology. The fluids Mini Coriolis flow meter can handle is that: pure water, silicone, aviation kerosene, diesel, supercritical CO₂, silane, etc.

Features

- Direct measurement of mass flow
- Accuracy : gas up to $\pm 0.5\%$ F.S, liquid up to $\pm 0.25\%$

- No dead zone
- Fast response and fast adjustment
- High precision and good repeatability
- Integrated PID controller to regulate flow
- Cost-effective
- High reliability and long life
- No thermal drift, negligible temperature and time drift
- Simultaneous output of fluid density and temperature
- High viscosity fluid and high density gas can be measured
- Not noticeable to ambient vibration

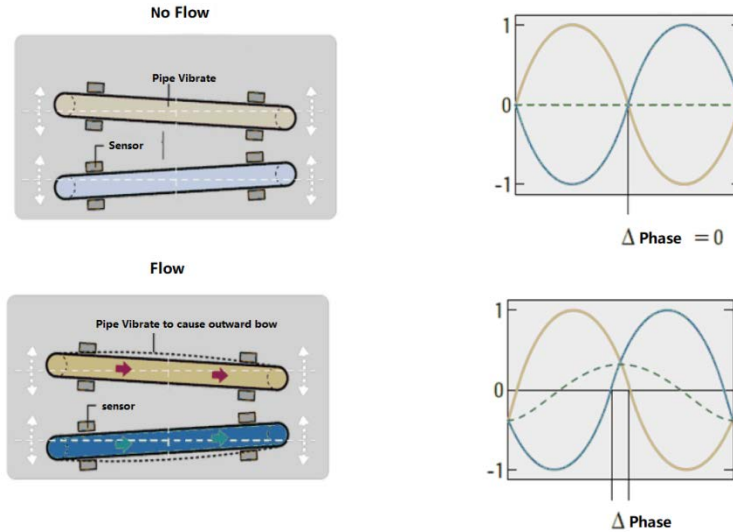
Technical Parameters

Specification	Specification	Mass Flow Controller	Mass Flow Meter	
	Technical Specification	Range	0-(40 g/h~1000 kg/h)	
Turn Down Ratio		50:1	100:1	
Accuracy(Gas)		±0.5%F.S (Full Range)		
Accuracy(Liquid)		±0.25%F.S (Full Range)		
Repeatability		±0.05%F.S		
Stability		<±0.1%FS		
Response Time		<0.2s	<0.1s	
Temperature Accuracy		±0.5°C		
Operation temperature		0~70°C or others		
Pressure rating		3MPa/10MPa		
Leak Rate		<2×10 Pa m /S		
Mechanical Part		Wet parts Material	316L	
		Base Material	304 Stainless steel	
	Process Connection	φ6,φ8,φ10,φ12.compressing fitting ,flange.etc		
	Seal Material	Metal		
	IP Rating	IP40		
	Install Position	Any Position		
Electrical Specification	Display info.	Display flow and setting		
	Electrical Connection	DB9,RJ11, 5.5×2.1		
	Display	With or without display		
	Communication	RS232/485,MODBUS		
	Output	0~5V,4-20mA,1-5V		
	Power Supply	±15VDC,24VDC		

Model and Range

Picture					
Model	SM	LC	MC	BC	XC
Flow Range	40 g/h-50 kg/h	40g/h-50 kg/h	50 -100 kg/h	100 -300 kg/h	300 1000 kg/h

Flow Sensor Curve



Model Selection

Model	Code	Description
Mark	SH-CMF-FE	SH-CMF-FE Series Micro Coriolis mass flow meter
General Range	S	40g/h~ 50 kg/h, without display, accuracy 1.0% F.S
	L	40g/h~ 50 kg/h, with display
	M	50 kg/h~100 kg/h, with display
	B	100 kg/h~300 kg/h, with display
	X	300 kg/h~1000 kg/h, with display
Type	C	Flow Controller
	M	Flow Meter
Pressure Rating	M	3Mpa
	Z	10Mpa
Flow range	40 g/h	A
	10 kg/h	B
	50 kg/h	C
	60 kg/h	D
	80 kg/h	E
	100 kg/h	F
	150 kg/h	G
	200 kg/h	H
	300 kg/h	I

	400 kg/h 500 kg/h 800 kg/h 1000 kg/h X	J K L M Others, please specify
Input	A1 A2 A3 A0	0~5V DC 4~20mA 1~5V DC None
Output	B1 B2 B3	0~5V DC 4~20mA 1~5V DC
Power supply	5 4	± 15 V DC 24V DC
Communication	8 2	RS485 RS232
Process Connection	C D E Y	Φ8 Φ10 Φ12 Others, please specify
Fluids Temperature	T1 T2	0~70°C Others, please specify

Dimensions

