

## SH-CMD Series Micro Bent Tube Coriolis Flowmeter



SH-CMD Series bent tube Coriolis flow meter is suitable for tough fluids measurement, such as high viscosity or high pressure media flow rate measurement. It is based on the Coriolis force principle. It can direct take measurement of fluid mass flow without any pressure, temperature, viscosity or density correction. The Coriolis flow meter is composed of two parts: a Coriolis flow sensor and a transmitter unit. SH-CMD series mass flowmeters use digital drive, DSP signal processing, special structure to realize flow meter with high stability, strong seismic performance.

### Micro-Bent Tube Coriolis flow meter features

- Bent tube flow sensor design to improve the operation frequency and decrease the effect from outside vibration
- Smaller installation space needed comparing to U-tube type Coriolis flow meter
- Low pressure loss
- Multi-parameter measurements (including: mass flow, volumetric flow, density, temperature, concentration)
- Wide range of applications (measurement of various non-Newtonian fluids, various slurries, suspensions, high viscosity fluids measurement)
- Low installation requirements, no need straight pipeline before and after flow sensor
- Low maintenance
- Fast response time
- High accuracy (0.1%~0.2%)
- Various sensor sizes available, DN10 to DN250 (10 inches)
- Nice appearance for easy cleaning
- Coriolis flow meter tube with self-emptying function, it can be used in food industry

### Technical Specifications

- Application: liquid, gas, liquid-solid, gas-solid mass flow measurement or volume flow
- Measuring tube material: 316L stainless steel or hastelloy C alloy
- Pressure rating: Standard 1.6MPa, 4MPa.max 100MPa
- Fluids temperature: Standard -50°C~+150°C (high temperature Coriolis flow meter can be

-200°C~+350°C)

- Ambient temperature: Sensor: -41°C~+150°C Transmitter: -41°C~+80°C
- Flow measurement accuracy: ±0.5%, ±0.2%, ±0.15%, ±0.1% flow ±[(zero point stability /flow value) × 100]% flow
- Density measurement accuracy: ±0.002g/cm<sup>3</sup>, ±0.001g/cm<sup>3</sup>
- Temperature accuracy: ±0.5°C
- Repeatability: ±0.10%, ±0.05% flow ±[1/2 (zero stability/flow value)×100]% flow
- Output signal:
- 4~20mA load resistance <500Ω (instantaneous flow or density optional);
- 0 ~10 kHz instantaneous flow pulse signal
- RS485 communication
- HART (requires customization)
- Explosion-proof: EX d ib II C T5 Gb
- Protection level: IP67
- Electrical interface: M20×1.5
- Language: English
- Power supply: 24V DC (current is not less than 500mA) or 220V AC
- Flow units available: t/h, kg/h, g/h, t/min, kg/min, g/min, kg/s, g/s, m<sup>3</sup>/h, L/h, ml/h, m<sup>3</sup>/min, L/s, ml/s, lb/h, oz/h, lb/min, oz/min, lb/s, oz/s, gal/h, gal/min, gal/s

## Flow Range

Inch	DN(mm)	Flow Range	Operation Pressure	Process Connection
3/8"	10	0~1.0 T/h	0~4 Mpa	Flange DN10
1/2"	15	0~3.5 T/h	0~4 Mpa	Flange DN15
3/4"	20	0~5.5 T/h	0~4 Mpa	Flange DN20
1"	25	0~20 T/h	0~4 Mpa	Flange DN25
2"	50	0~40 T/h	0~4 Mpa	Flange DN50
3"	80	0~100 T/h	0~1.6 Mpa	Flange DN80
4"	100	0~200 T/h	0~1.6 Mpa	Flange DN100
5"	125	0~300 T/h	0~1.6 Mpa	Flange DN125
6"	150	0~500 T/h	0~1.6 Mpa	Flange DN150
8"	200	0~800 T/h	0~1.6 Mpa	Flange DN200
10"	250	0~1000 T/h	0~1.6 Mpa	Flange DN250

Flange standard: Weld neck flange-ANSI B16.5, 150 LB, other standard is also available

## Model Selection

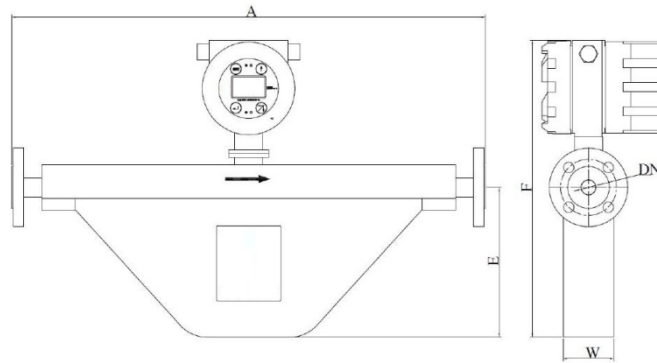
SH-CMD		Micro Bent Tube Coriolis Mass Flow Meters	
Nominal Diameter	Flow range(t/h)	Nominal Diameter	Flow range(t/h)
10	0~1.0 T/h	100	0~200 T/h
15	0~3.5 T/h	125	0~300 T/h

	20	0~5.5 T/h	150	0~500 T/h
	25	0~20 T/h	200	0~800 T/h
	50	0~40 T/h	250	0~1000 T/h
	80	0~100 T/h		
<b>P</b>	<b>Pressure</b>			
P1	1.6 Mpa			
P2	4.0MPa			
P3	32MPa			
P5	25Mpa			
P6	20Mpa			
P4	Special demand			
<b>H</b>	<b>Structure Form</b>			
H1	Compact			
H2	Remote			
<b>T</b>	<b>Temperature</b>			
T1	(-50~150 °C)			
T2	(-50~250 °C)			
T3	(-50~350 °C)			
T4	(-200~150 °C)			
<b>O</b>	<b>Output</b>			
O1	4~20mA			
O2	Frequency/pulse			
O3	0~5V			
<b>C</b>	<b>Communication</b>			
C1	None			
C2	RS485/Modbus			
C3	Hart			
<b>E</b>	<b>Hazardous Area</b>			
E1	Intrinsically safe, Exib[ib]IICT5 Gb			
<b>A</b>	<b>Accuracy</b>			
A1	0.15%			
A2	0.2%			
A3	0.1%			
A4	0.5%			
<b>B</b>	<b>Batch Control</b>			
B1	None			
B2	With Batch Control			
<b>P</b>	<b>Power supply</b>			
P1	24V DC			
P2	220V AC			
<b>M</b>	<b>Tube Material</b>			
M1	316L			
M2	Hastelloy alloy C-276			

										M4	PTFE painted(only for large size)
										M3	Others
										PC	Process Connection
										PC1	Flange(specify standard)
										PC2	Tri-clamp
										PC3	Weld thread(Specify thread)
										PC4	Others

\* Please provide density, temperature of the medium, also cable length (if needed) when ordering

## Dimension



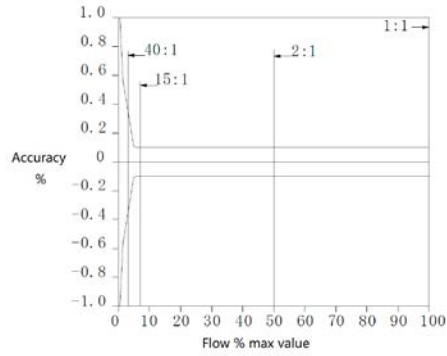
Unit: mm

Flow meter size mm	Pressure (MPa)	A	E	F	W
10	4	545	150	365	68
15	4	575	170	385	68
20	4	660	190	405	68
25	4	750	205	420	85
50	4	900	230	475	113
80	1.6	950	266	545	205
100	1.6	995	308	588	205
125	1.6	1400	420	700	205
150	1.6	1450	470	795	264
200	1.6	1770	525	850	264
250	1.6	1770	525	850	264

## Flow meter accuracy

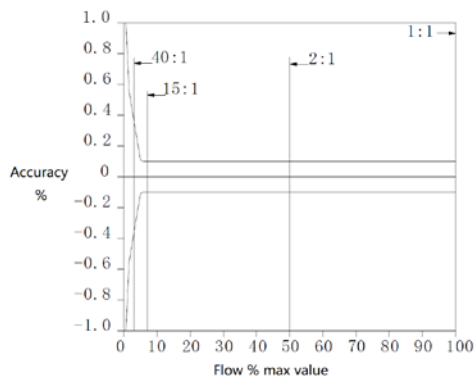
Instant Flow Accuracy:  $\pm 0.2\%$ , flow  $\pm [(zero\ stability/flow\ value) \times 100 ]\%$

Flow response time: 1 second (adjustable)



Density Accuracy:  $\pm 0.002\text{g/cm}^3(\text{liquid})$

Density Range: 0.5~2.5 g/cm<sup>3</sup>



Temperature Accuracy:  $\pm 1\text{ }^\circ\text{C}$

