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 DN300 (12 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 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 Corolis 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/cm3, ±0.001g/cm3
- 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: II 2G Ex db IIC T6-T2 Gb , ATEX Approved
- 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,m3/h, L/h, ml/h,m3/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	0~1.5 T/h	0~4 Mpa	Flange DN10
1/2”	15	0~3 T/h	0~4 Mpa	Flange DN15
3/4”	20	0~7 T/h	0~4 Mpa	Flange DN20
1”	25	0~13 T/h	0~4 Mpa	Flange DN25
1.5”	40	0~22 T/h	0~4 Mpa	Flange DN40
2”	50	0~33 T/h	0~4 Mpa	Flange DN50
2.5”	65	0~60 T/h	0~4 Mpa	Flange DN65
3”	80	0~100 T/h	0~1.6 Mpa	Flange DN80
4”	100	0~160 T/h	0~1.6 Mpa	Flange DN100
5”	125	0~230 T/h	0~1.6 Mpa	Flange DN125
6”	150	0~300 T/h	0~1.6 Mpa	Flange DN150
8”	200A	0~400 T/h	0~1.6 Mpa	Flange DN200
8”	200B	0~500 T/h	0~1.6 Mpa	Flange DN200
10”	250	0~800 T/h	0~1.6 Mpa	Flange DN250
12”	300	0~1500 T/h	0~1.6 Mpa	Flange DN300

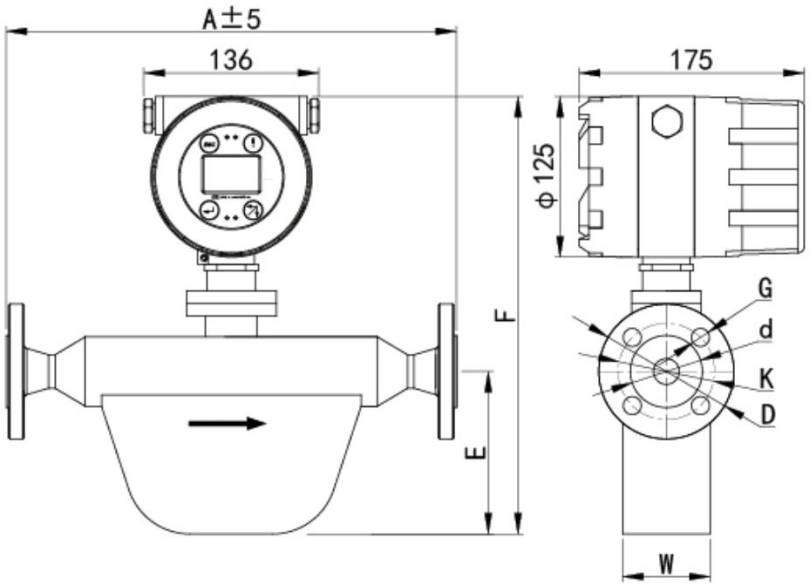
Model Selection

SH-CMD							Micro Bent Tube Coriolis Mass Flow Meters	
Nominal Diameter							Flow range(t/h)	Nominal Diameter	Flow range(t/h)
10							0~1.5 T/h	100	0~160 T/h
15							0~3 T/h	125	0~230 T/h
20							0~7 T/h	150	0~300 T/h
25							0~13 T/h	200A	0~400 T/h
40							0~22 T/h	200B	0~500 T/h
50							0~33 T/h	250	0~800 T/h
65							0~60 T/h	300	0~1500 T/h
80							0~100 T/h		
P	Pressure								
P1	1.6 Mpa								
P7	2.5 Mpa								
P2	4.0MPa								
P3	32MPa								
P5	25Mpa								
P6	20Mpa								
P4	Special demand								
	H	Structure Form							
	H1	Compact							
	H2	Remote Display with 1.2 m cable							
		T	Temperature						
		T1	(-50~150℃)						
		T2	(-50~250℃)						
		T3	(-50~350℃)						
		T4	(-200~150℃)						
			O	Output					
			O1	4~20mA					
			O2	Frequency/pulse					
			O3	0~5V					
				C	Communication				
				C1	None				
				C2	RS485/Modbus				
				C3	Hart				
				C4	Profibus-PA				
					E	Hazardous Area			
					E1	Explosion proof, ATEX Approved			

						A	Accuracy				
						A1	0.15%				
						A2	0.2%				
						A3	0.1%				
						A4	0.5%				
							B	Batch Control			
							B1	None			
							B2	With Batch Control			
								P	Power supply		
								P1	24V DC		
								P2	220V AC		
									M	Tube Material	
									M1	316L	
									M2	Hastelloy alloy C-276	
									M4	Hastelloy alloy B3	
									M5	Alloy20（N08020）	
									M6	Titanium (ASTM B265)	
									M7	Tantalum (ASTM B708)	
									M8	C4 steel ASTM A600T12004	
									M9	Copper-nickel alloy	
									M10	Nickel-based alloy	
									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



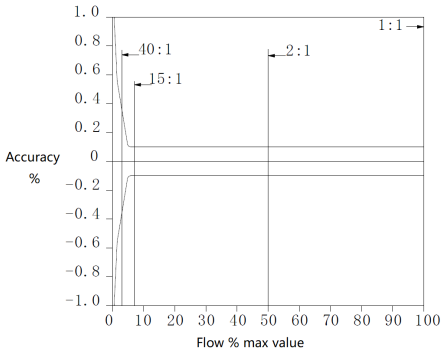
Unit: mm

Flow meter size mm	Pressure (MPa)	A	E	F	W	G	K	d	D
10	4	480	150	375	68	14	60	40	90
15	4	480	150	375	68	14	65	45	95
20	4	620	189	413	68	14	75	58	105
25	4	721	205	435.5	85	14	85	68	115
40	4	923	285	536.5	123	18	110	88	150
50	4	925	285	536.5	123	18	125	102	165
65	4	990	320	584.5	150	18	145	122	185
80	1.6	1060	270	535	150	18	160	138	200
100	1.6	1192	280	558	185	18	180	158	220
125	1.6	1200	280	558	185	18	210	188	250
150	1.6	1320	360	638	185	22	240	212	285
200A	1.6	1584	380	675	218	22	295	268	340
200B	1.6	1903	465	800	265	22	295	268	340
250	1.6	1931	490	838	320	26	355	320	405
300	1.6	2006	520	893	360	26	410	378	460

Flow meter accuracy

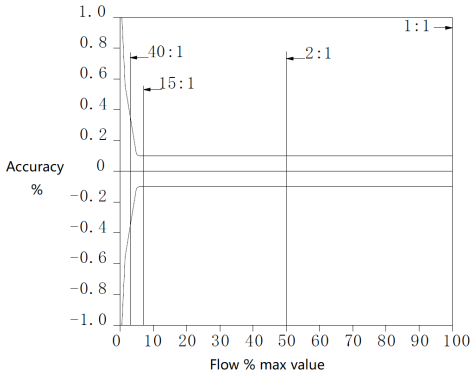
Instant Flow Accuracy: ±0.2%, flow ± [(zero stability/flow value) ×100]%

Flow response time: 1 second (adjustable)



Density Accuracy: ±0.002g/cm³(liquid)

Density Range: 0.5~2.5 g/cm³



Temperature Accuracy: ±1 °C