



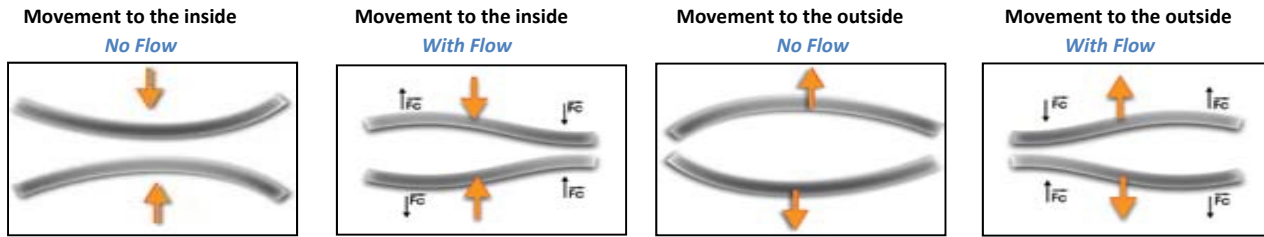
ALCM-MB

Coriolis Mass Flowmeter
ALCM Series

GENERAL

SMC's ALCM-MB Micro-Bend Coriolis Mass flowmeter employs a unique tube arrangement with U-shaped measuring tubes that are formed with a significantly smaller radius versus traditional U-tube type coriolis meters. The more gradual radius of the ALCM-MB's tube geometry provides for a more compact design and significantly reduced pressure differential versus other coriolis meters.

The ALCM-MB features an easy-to-read color OLED display that can be configured to display either mass or volumetric flow rates in a variety of user-selectable engineering units as well as density, temperature, and totalized flows. This meter offers excellent value by providing a highly accurate, compact instrument that can measure flow, density, and temperature in a single package that has lower cost, lower pressure differential and a more compact design versus competitive coriolis-technology flowmeters. The unique combination of features and benefits offered by the ALCM-MB make it an ideal choice for applications that are found in a variety of industries including Food & Beverage, Petrochem, Oil & Gas, Paint, and Industrial Process Control.



FEATURES

- Suitable for aggressive and contaminated media
- Measurement of mass flow, density, temperature and volume flow
- High rotation frequency and well-balanced measuring tubes
- Excellent purging and sterilization qualities due to a construction that is free of dead spots
- Operation up to + 575°F (300 °C)
- Individual 8-point-calibration including report
- EX protection (optional)

SPECIFICATIONS

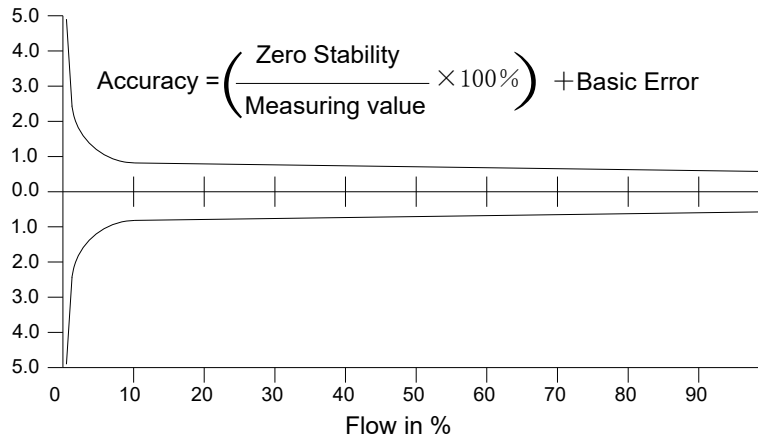
- | | |
|--|---|
| <ul style="list-style-type: none"> • Flow Range: 3,300~2,200,000 lb/hr (1500~1000000 kg/hr) • Line Sizes: ½"~8"(15-200 mm) • Process Connections: Flanged (ANSI, DIN, Tri-Clamp®) • Tube geometry: U-Tube with Micro Bend • Accuracy: ±0.5% of reading(std), 0.2% or 0.15% (opt) • Repeatability: ±0.075% of reading • Frequency: 10-2000 Hz • Display: Color Graphic OLED <ul style="list-style-type: none"> Eng. Units (mass): kg, lb, ton Eng. Units (Temp): °C, °F Eng. Units (Vol.): m³, Liter, US Gallon, Imperial Gallon, Million Gallon, • Zero Stability: 0.1% full-scale | <ul style="list-style-type: none"> • Zero Drift (%FS / °C): 0.005 • Process Temperature: -58~392 °F (-50~200 °C) -std • Ambient Temperature: -5~312 °F (-20~55 °C) • Max Working Pressure: 360 psig (2.5MPa) std, 930 psig optional • Measuring Tube Mat'l: SS per DIN1.4571 (AISI 316Ti) standard • Housing Material: SS #304 • Power Supply: 24 V_{DC}, ± 20%; 86~260V_{AC}, 50~60Hz • Power Consumption: Less than 6W • Outputs.: 4-20 mA, 0-10 kHz pulse, RS485 • Density Meas. Range: 12.5-125lb/ft³ (0.2~2.0 g/cc) • Density Accuracy: ±0.06 b/ft³ (0.001 g/cc) • Temperature Accuracy: up to ±1°F (°C) |
|--|---|



➤ Flow Ranges

| Meter Size inches (mm) | Flow Range Lb./Hr. (Kg/Hr.) (0.2% & 0.5% accuracy) | Flow Range Lb./Hr. (Kg/Hr.) Accuracy 0.15% | Stability of Zero Point Lb./Hr. (Kg/Hr.) |
|------------------------|--|--|--|
| ½" (15) | 330~4,400 (150~2,000) | 440~4,400 (200~2,000) | 0.26 (0.117) |
| 1" (25) | 881~13,228 (600~8,000) | 1,322~13,228 (860~8,000) | 0.39 (0.1765) |
| 1½" (40) | 5,29~79,366 (2,400~36,000) | 7,936~79,366 (3,600~36,000) | 0.79 (0.360) |
| 2" (50) | 7,716~110,231(3,500~50,000) | 11,023~110,231(5,000~50,000) | 1.2 (0.544) |
| 3" (80)A | 11,023~176,370(5,000~80,000) | 17,637~176,370(8,000~80,000) | 3.0(1.361) |
| 3" (80)B | 17,637~265,000 (8,000~120,000) | 26,500~265,000(12,000~120,000) | 3.0(1.361) |
| 4" (100)A | 22,046~330,693(10,000~150,000) | 33,069~330,693(15,000~150,000) | 4.8 (2.177) |
| 4" (100)B | 33,069~440,924(15,000~200,000) | 44,092~440,924(20,000~200,000) | 4.8 (2.177) |
| 6" (150) | 77,162~1,102,311(35,000~500,000) | 110,231~1,102,311(50,000~500,000) | 9.74 (4.417) |
| 8" (200) | 154,234~2,204,623(70,000~1,000,000) | 220,462~2,204,623(100,000~1,000,000) | 15.36 (6.965) |

Accuracy:



The diagram shows typical values. Individual values may be taken from the calibration records supplied with each meter.

Repeatability:

| | | |
|----------------------|--------------|--------|
| Accuracy | 0.10% 0.20% | 0.50% |
| Repeatability | ±0.05% ±0.1% | ±0.25% |

Accuracy is calculated based on the water measurement under the condition of +20 °C ~ 25 °C and 0.1MPa~0.2MPa.

Density Measuring

| | |
|---------------|--|
| Density Range | 12.5-125 lb/ft ³ (0.2~2.0 g/cc) |
| Basic Error | ±0.06 lb/ft ³ (0.001 g/cc) Affected by the transducer |
| Repeatability | ±0.06 lb/ft ³ (0.001g/cm ³) |

SmartMeasurement

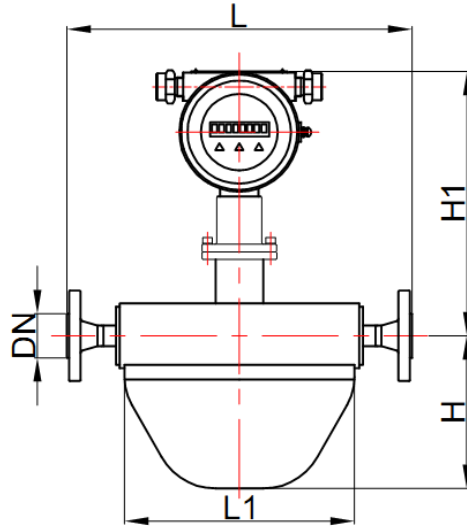
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➤ Dimensions



-All dimensions in units of inches (mm)-

| Nominal Line Size | L | L1 | H | H1 |
|-------------------|--------------|--------------|-------------|-------------|
| ½" (15) | 14.17 (360) | 9.45 (240) | 7.09 (180) | 12.20 (310) |
| 1" (25) | 19.69 (500) | 14.17 (360) | 9.84 (250) | 12.20 (310) |
| 1½" (40) | 25.75 (654) | 19.69 (500) | 13.39 (340) | 12.20 (310) |
| 2" (50) | 26.00 (660) | 19.69 (500) | 13.39 (340) | 12.20 (310) |
| 3" (80A) | 35.43 (900) | 27.56 (700) | 16.54 (420) | 13.39 (340) |
| 3" (80B) | 44.49 (1000) | 33.86 (800) | 26.00 (630) | 13.39 (340) |
| 4" (100A) | 44.50 (1130) | 33.86 (860) | 26.00 (660) | 14.17 (360) |
| 4" (100B) | 47.25 (1200) | 35.43 (900) | 32.28 (820) | 14.17 (360) |
| 6" (150) | 53.15 (1350) | 43.34 (1100) | 33.46 (850) | 15.35 (390) |
| 8" (200) | 66.93 (1700) | 51.18 (1300) | 38.58 (980) | 15.35 (390) |



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Please contact your SmartMeasurement application engineer

You also need to provide the following information:

| |
|--------------------------------|
| Type of fluid |
| Full-scale flow rate |
| Line Size |
| Process Pressure & Temperature |
| Pressure Drop |
| Type of Electronics |
| Power Requirements |

Please provide the name of your fluid, including operating density and viscosity

Please provide the max and min flow rate, normal flow rate also

Please provide the line size and connection

We will calibrate flow meter as close to your operating conditions as possible

Please indicate the maximum allowable pressure drop

Please specify output and installation type (wall mount, panel mount, etc.)

Please specify AC or DC power supply

Model Selection Guide

| ALCM-MB | | | | | | | | | | |
|---|------|----|----|----|----|----|----|----|----|---------------------|
| Example 1: ALCM-MB-25F-5-1-1-CYS-NX-DC-NN | | | | | | | | | | |
| ALCM-MB- | ** | ** | ** | ** | ** | ** | ** | ** | ** | Description |
| 1/2" (15 mm) 330~4,400 Lb./hr.(150 - 2,000 kg/hr) | 15 | | | | | | | | | Nominal Line Size |
| 1" (25 mm) 881~13,228 Lb./hr (400 - 6,000 kg/hr) | 25 | | | | | | | | | |
| 1 1/2" (40 mm) 3,257~52,910 Lb./hr (1,600 - 24,000kg/hr) | 40 | | | | | | | | | |
| 2" (50 mm) 7,716~110,231Lb./hr (2,400 - 36,000 kg/hr) | 50A | | | | | | | | | |
| 2" (50 mm) 7,716~110,231Lb./hr (3,500 - 50,000 kg/hr) | 50B | | | | | | | | | |
| 3"(80 mm) 12,125~176,370 Lb./hr (5,500 - 80,000 kg/hr) | 80A | | | | | | | | | |
| 3"(80 mm) 17,637~265,000 Lb./hr (8,000 - 120,000 kg/hr) | 80B | | | | | | | | | |
| 4" (100 mm) 22,046~330,693 Lb./hr (10,000 - 150,000 kg/hr) | 100A | | | | | | | | | |
| 4" (100 mm) 33,069~440,924 (15,000~200,000 kg/hr) | 100B | | | | | | | | | |
| 6" (150 mm) 77,162~1,102,311 Lb./hr (.35,000~500,000 kg/hr) | 150 | | | | | | | | | |
| 8" (200 mm) 154,234~2,204,623 Lb./hr (70,000~1,000,000 kg/hr) | 200 | | | | | | | | | |
| 150# ANSI Flange | F | | | | | | | | | Process Connections |
| 300# ANSI Flange | F3 | | | | | | | | | |
| Other | O | | | | | | | | | |
| 0.15% | 1 | | | | | | | | | Accuracy |
| 0.2% | 2 | | | | | | | | | |
| 0.5% | 5 | | | | | | | | | |
| -58 to 257 °F (-50 to 125 °C) max. - Standard | 1 | | | | | | | | | Temperature Rating |
| -58 to 392 °F (-50 to 200 °C) – Remote display only 2 | | | | | | | | | | |
| -58 to 662 °F (-50 to 350 °C) – Remote display only 3 | | | | | | | | | | |
| 232 psig (1.6 MPa) - Standard | 1 | | | | | | | | | Pressure Rating |
| 362 psig (2.5 MPa) | 2 | | | | | | | | | |
| 580 psig (4.0 MPa) | 3 | | | | | | | | | |
| 928 psig (6.4 MPa) | 4 | | | | | | | | | |
| TSY Compact Version - surface touch control, display, 4-20mA, RS485 | CYS | | | | | | | | | Transmitter |
| TSY Compact Version - surface touch control, display, 4-20mA, RS485, HART | CYH | | | | | | | | | |
| TSY Remote Version - surface touch control, display, 4-20mA, RS485 | RYS | | | | | | | | | |
| TSY Remote Version - surface touch control, display, 4-20mA, RS485, HART | RYH | | | | | | | | | |
| Non-Explosion | NX | | | | | | | | | Approval |
| Exdib II CT3~T6 for transducer, Exd[jib] II CT6 transmitter (for remote) | XI | | | | | | | | | |
| Exdib II CT4~T6 (for compact) | XD | | | | | | | | | |
| 85-260 V _{AC} , 50/60Hz | AC | | | | | | | | | Power Supply |
| 24 V _{DC} | DC | | | | | | | | | |
| Standard SS #316L measuring tube | NN | | | | | | | | | Options |
| Extra signal cable for remote type transmitters (per meter length) | CABL | | | | | | | | | |
| Heat jacket | HJ | | | | | | | | | |