

SensorsX SX-FMCB Series

Coriolis Mass Flowmeter
Industrial Process Flowmeter



±0.15 % FS Accuracy	DN1.5 – DN200 Pipe Size Range	4-20 mA / HART / Modbus Output
IP67 Ingress Protection	Explosion-proof configuration available Explosion Protection	20-140 V DC / 80-264 V AC Power Supply

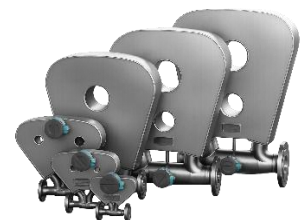
[Industrial Flow Measurement](#) | [Mass](#) | [Density](#) | [Temperature](#) | [Volume](#)

■ PRODUCT OVERVIEW

The SX-FMCB Series Coriolis mass flowmeter is designed for direct measurement of mass flow, density, and temperature in liquids, gases, slurries, and selected solid-liquid mixtures. Based on Coriolis measurement technology, it provides high measurement accuracy, stable performance, and a design with no moving parts. With an integral or remote transmitter, the flowmeter supports 4–20 mA, HART, RS-485 / Modbus RTU, pulse, frequency, and discrete outputs. Typical applications include food and beverage, chemical processing, pharmaceuticals, oil and gas, LNG/CNG metering, pulp and paper, and metal smelting.

Typical Measurements

- Direct measurement of mass flow rate, density, and temperature
- Indirect measurement of volume flow rate and other variables
- Applicable to liquids, gases, slurries, and certain solid-liquid mixtures
- Wide measurement range
- High accuracy Class 0.15; excellent repeatability
- No moving parts; Explosion-proof configurations available



■ KEY FEATURES

◆ Direct Measurement mass flow, density, and temperature; volume flow rate derived from measured variables.	◆ Multiple media types liquids, gases, slurries, and selected solid-liquid mixtures.
◆ High Accuracy $\pm 0.15\%$ for liquid mass flow and $\pm 0.50\%$ for gas mass flow.	◆ No Moving Parts robust mechanical design with low maintenance requirements.
◆ Explosion-proof configurations available Ex db ib IIC and Ex ib tb III C	◆ Multiple Outputs 4–20 mA, pulse/frequency/discrete output, RS-485 / Modbus RTU, and HART.
◆ DSP-Based Transmitter real-time medium-state assessment and self-diagnostics.	◆ No Straight-Pipe Requirement no upstream or downstream straight pipe required.
◆ Wide Temperature Range –200 to +245 °C, depending on series and transmitter configuration.	◆ Four Application Series General, High-Pressure (to 5,076 psi / 35 MPa), Cryogenic, Corrosion-Resistant

■ TYPICAL APPLICATIONS

Typical Applications

- Food & Beverage
- Oil & Gas
- Metal Smelting
- Petrochemical & Chemical
- Natural Gas (LNG / CNG)
- Pharmaceutical
- Pulp & Paper

■ PERFORMANCE SPECIFICATIONS

Liquid Flow Performance — General Series

Sensor Size Code	Pipe Size	Max Flow Range (t/h)	Zero-Point Instability Eo (t/h)
SX-FMCB001	DN1.5	0 – 0.06	0.00001
SX-FMCB003	DN3	0 – 0.12	0.00002
SX-FMCB004	DN4	0 – 0.24	0.00004
SX-FMCB006	DN6 (NPS ¼")	0 – 0.8	0.00006
SX-FMCB010	DN10 (NPS ¾")	0 – 1.5	0.00011
SX-FMCB015	DN15 (NPS ½")	0 – 3	0.00022
SX-FMCB020	DN20 (NPS ¾")	0 – 7	0.00053
SX-FMCB025	DN25 (NPS 1")	0 – 12	0.0009
SX-FMCB032	DN32 (NPS 1¼")	0 – 21	0.0014
SX-FMCB040	DN40 (NPS 1½")	0 – 36	0.0025
SX-FMCB050	DN50 (NPS 2")	0 – 60	0.0041
SX-FMCB080	DN80 (NPS 3")	0 – 120	0.009
SX-FMCB100	DN100 (NPS 4")	0 – 210	0.013
SX-FMCB150	DN150 (NPS 6")	0 – 350	0.02
SX-FMCB200	DN200 (NPS 8")	0 – 750	0.05

※ Flow measurement error: $\varepsilon = E_i\% \times \text{Flow} + E_o$. Total accuracy $E = \pm[(\varepsilon \div \text{Flow}) \times 100]\%$

※ For cryogenic liquid service (process temperature below –58 °F / –50 °C), mass flow accuracy is $\pm 0.35\%$.

※ Flanged connection; flange standard to be specified when ordering. EN 1092-1 / ASME B16.5 available on request. Threaded M20×1.5 for DN4 and smaller only.

General Specifications

Measurement	
Measurement Principle	Coriolis
Measured Variables	Mass flow rate (direct); density; temperature; volume flow rate (derived)
Pipe Size Range	DN1.5 to DN200
Maximum Flow Rate	750 t/h
Medium State	Liquid, gas, slurry, solid-liquid mixture
Tube Geometry	Triangular / U-type / Micro-bend
Transmitter Installation	Integral (code Y) or Remote (codes N, H, L)
Straight-Pipe Requirement	None
Accuracy	
Mass Flow Rate — Liquid	±0.15 % ±0.35 % ±0.50 %
Mass Flow Rate — Gas	±0.50 %
Volume Flow Rate — Liquid	±0.35 %
Density	±0.002 g/cm ³ or ±0.005 g/cm ³
Temperature	±0.75 °C (±1.35 °F)
Process Temperature	
Integral Transmitter (code Y)	–50 to +125 °C (–58 to +257 °F)
Remote Transmitter (code N)	–50 to +180 °C (–58 to +356 °F)
Remote Transmitter (code H)	–50 to +245 °C (–58 to +473 °F)
Remote, Cryogenic (code L)	–200 to +80 °C (–328 to +176 °F)
Ambient Temperature	–40 to +60 °C (–40 to +140 °F)
Pressure Rating	
General Series	4.0 MPa (580 psi), 10.0 MPa (1,450 psi), 35.0 MPa (5,076 psi)
High-Pressure Series	10 MPa (1,450 psi), 16 MPa (2,320 psi), 25 MPa (3,626 psi), 35 MPa (5,076 psi)
Additional Option	6.3 MPa (914 psi)
Wetted Materials	
Flow Tube	316L SS (standard) All 316L SS Titanium Ti1 Hastelloy C
Other Wetted Parts	304 SS (standard)
Ingress Protection	
Rating	IP67 (IEC 60529)

Series Variants

General Series	
Medium	Conventional liquids and gases — gasoline, water, alcohol, etc.
Pipe Size	DN1.5–DN200
Process Connection	Flange
Pressure Rating	4 MPa (580 psi), 10 MPa (1,450 psi)
Process Temperature	–50 to +180 °C (–58 to +356 °F)
Wetted Material	Flow tube 316L SS; other 304 SS
Transmitter Mount	Integral or Remote
High-Pressure Series	
Medium	CNG and other high-pressure fluids
Pipe Size	DN1.5–DN200

Process Connection	Flange or Threaded
Pressure Rating	10 MPa (1,450 psi), 16 MPa (2,320 psi), 25 MPa (3,626 psi), 35 MPa (5,076 psi)
Process Temperature	-50 to +180 °C (-58 to +356 °F)
Wetted Material	Flow tube 316L SS; other 304 SS
Transmitter Mount	Integral or Remote
Cryogenic Series	
Medium	LNG, LN ₂ , LO ₂ , and other cryogenic fluids
Pipe Size	NPS ¼" to 8" (DN6–DN200)
Process Connection	Flange
Pressure Rating	4 MPa (580 psi), 10 MPa (1,450 psi)
Process Temperature	-200 to +80 °C (-328 to +176 °F)
Best Accuracy	±0.35 % (cryogenic liquid)
Wetted Material	Flow tube 316L SS; other 304 SS
Transmitter Mount	Remote only
Corrosion-Resistant Series	
Medium	Chlorine, liquid nitrogen, and other corrosive media
Pipe Size	NPS ¼" to 8" (DN6–DN200)
Process Connection	Flange or Threaded
Pressure Rating	4 MPa (580 psi), 10 MPa (1,450 psi)
Process Temperature	-50 to +180 °C (-58 to +356 °F)
Wetted Material	Titanium Ti1 or Hastelloy C
Transmitter Mount	Integral or Remote
Note	Measurement solution varies depending on the specific corrosive medium — contact SensorsX.

■ ELECTRICAL SPECIFICATIONS — TRANSMITTER

Power Supply	
Input Voltage	Smart auto-switching: 20–140 V DC or 80–264 V AC (50–60 Hz)
Power Consumption	< 20 W
Output Signal	
4–20 mA	Passive (loop-powered); external 12–28 V DC; max 22.6 mA
Pulse / Frequency / Discrete	Open-collector; external 12–28 V DC; max 50 mA
Digital Communication	RS-485 Modbus RTU HART
Discrete Input	Logic 0: < 5 V DC; Logic 1: > 10 V DC
Display & Interface	
Display	LCD
Displayed Variables	Mass flow rate, volume flow rate, density, temperature, mass totalizer, volume totalizer
Totalizers	4 independent totalizers
Operator Interface	Touch keypad
Functions	
Functions	Zero calibration; totalizer reset
Self-Diagnostics	Real-time medium-state assessment and self-diagnosis via DSP

Electrical Connection

Cable Entry M20×1.5 or ½ NPT (select on order)

Housing

Material Aluminium

Ingress Protection IP67 (IEC 60529)

Ambient Temperature -40 to +60 °C (-40 to +140 °F)

■ ENVIRONMENTAL SPECIFICATIONS

Temperature

Ambient Operating -40 to +60 °C (-40 to +140 °F)

Mechanical & Environmental

Ingress Protection IP67 (IEC 60529)

■ PROCESS CONNECTIONS & WETTED MATERIALS

Process Connection

Flange EN 1092-1 / ASME B16.5, Raised Face (RF) available on request.

Threaded M20×1.5 (DN4 and smaller only)

Tri-clamp Available — specify on order

Materials in Contact with Medium

Flow Tube 316L SS (standard) | All 316L SS | Titanium Ti1 | Hastelloy C

Other Wetted Parts 304 SS (standard)

Tube Geometry

Available Types Triangular / U-type / Micro-bend — specify in order remarks

■ COMMUNICATION PROTOCOLS

RS-485 / Modbus RTU

Interface RS-485 (2-wire)

Protocol Modbus RTU

HART

Interface 4–20 mA loop

Protocol HART

■ CERTIFICATIONS & APPROVALS

Explosion Protection

Explosion protection: Ex db ib IIC T3–T6 °C Gb

Explosion protection: Ex ib tb III C T85 °C–T200 °C Db

※ Specific explosion protection certificate numbers depend on product configuration. Contact SensorsX Technology Inc. for current certificates applicable to your order.

■ ORDERING INFORMATION

Complete model number example: **SX-FMCB-025NNNF4Z110**

Flow Range	
001	DN1.5 — 0 to 0.06 t/h
003	DN3 — 0 to 0.12 t/h
004	DN4 — 0 to 0.24 t/h
006	DN6 (NPS ¼") — 0 to 0.8 t/h
010	DN10 (NPS ⅜") — 0 to 1.5 t/h
015	DN15 (NPS ½") — 0 to 3 t/h
020	DN20 (NPS ¾") — 0 to 7 t/h
025	DN25 (NPS 1") — 0 to 12 t/h
032	DN32 (NPS 1¼") — 0 to 21 t/h
040	DN40 (NPS 1½") — 0 to 36 t/h
050	DN50 (NPS 2") — 0 to 60 t/h
080	DN80 (NPS 3") — 0 to 120 t/h
100	DN100 (NPS 4") — 0 to 210 t/h
150	DN150 (NPS 6") — 0 to 350 t/h
200	DN200 (NPS 8") — 0 to 750 t/h
Temperature Range	
Y	–58 to +257 °F (–50 to +125 °C) — Integral transmitter mount
N	–58 to +356 °F (–50 to +180 °C) — Remote transmitter mount
H	–58 to +473 °F (–50 to +245 °C) — Remote transmitter mount
L	–328 to +176 °F (–200 to +80 °C) — Remote, cryogenic service
Accuracy	
N	Mass flow ±0.15 %; density ±0.002 g/cm³
A	Mass flow ±0.20 %; density ±0.005 g/cm³
B	Mass flow ±0.50 %; density ±0.005 g/cm³
H	Mass flow ±0.35 %; density ±0.005 g/cm³ [cryogenic, Temperature code L only]
Pressure Rating	
N	4.0 MPa (580 psi)
A	6.3 MPa (914 psi)
B	10.0 MPa (1,450 psi)
C	35.0 MPa (5,076 psi)
Process Connection	
F	Flanged connection; flange standard to be specified when ordering
M	Threaded — M20×1.5 [DN4 and smaller only]
K	Tri-clamp
Materials in Contact with Medium	
4	Flow tube 316L SS; other wetted parts 304 SS
6	316L SS (all wetted parts)
T	Titanium Ti1
C	Hastelloy C
Measurement Application	
Z	General service

B	Trace-heated (steam or electric heat tracing)
C	CNG (compressed natural gas)
L	LNG (liquefied natural gas)
M	Cryogenic — no pre-cooling required
Output / Power Supply	
1	4–20 mA (passive, loop-powered; external 12–28 V DC; max 22.6 mA)
2	Pulse / Frequency / Discrete output (open-collector; 12–28 V DC; max 50 mA)
3	Modbus RTU (RS-485)
Electrical Connection	
1	M20×1.5 Female
2	½ NPT Female
Explosion Protection	
0	Without (standard)
1	Ex db ib IIC T3–T6 Gb
2	Ex ib tb III C T85 °C–T200 °C Db
Customized	
D	Customized —specify requirements when ordering