

CORI-FLOW™ MN-Series



● Low-flow Coriolis mass flow meters

Introduction

Bronkhorst has a proven reputation for reliable, high-performance Coriolis instruments in a compact design. Since 2001, successive generations have set new standards in low-flow measurement. The fourth-generation CORI-FLOW continues this legacy with precision in low-flow, space-saving modular design and flexible integration in any system or machine.

CORI-FLOW MN-Series combines exceptional performance with a small footprint, covering flow ranges from 0...100 to 0...2000 kg/h. Using the Coriolis principle, it measures gases and liquids by mass, independent of fluid properties, delivering fast, accurate results. The instrument enables bi-directional flow measurement. With integrated PID-controller functionality and optional close-coupled valves or pumps, CORI-FLOW offers a compact, cost-effective solution for precise low-flow control. Its modular design ensures consistent electronics, connectivity, and features across the entire product series.



Features and benefits

- Mass flow measurement, medium independent
- Density measurement
- Temperature measurement
- PID controller
- Ratio and batch dosing
- Diagnostics parameters
- NAMUR status indication
- Datalogger
- Easy configuration via USB-C and Bluetooth

Typical applications

CORI-FLOW is commonly used in industries such as chemical research and pilot plants, food, beverage and pharmaceutical production for dosing additives, and analytical applications including preparative chromatography.



Technical specifications

Models and flow ranges

MN-54ST	: 0 ... 100 kg/h*
MN-15ST	: 0 ... 200 kg/h*
MN-25ST	: 0 ... 400 kg/h*
MN-55ST	: 0 ... 1000 kg/h*
MN-16ST	: 0 ... 2000 kg/h*

*) advised minimal flow $\geq 5 \times ZS$

Performance

Mass flow accuracy, liquid	: $\leq 0.2\%$ Rd
Mass flow accuracy, gas	: $\leq 0.5\%$ Rd
Repeatability	: $0.5 \times$ accuracy value
Zero Stability (ZS)	: 25 g/h (MN-54), 50 g/h (MN-15/MN-25), 100 g/h (MN-55), 200 g/h (MN-16)
Fluid temperature range	: 0 ... 70 °C
Ambient temperature range	: 0 ... 70 °C
Fluid temperature accuracy	: ± 1 °C
Density range	: 0 ... 2 g/cm ³
Density accuracy	: $\leq \pm 0.005$ g/cm ³
Response time sensor	: ≤ 10 msec (τ 63%); ≤ 40 msec (τ 98%)
Mounting	: In any position

Mechanical properties

Material housing	: Stainless steel 316L / 1.4404
Material wetted parts	: Stainless steel 316L / 1.4404, Ra ≤ 1.6 μ m
Seals	: FFKM
Sensor	: Dual tube
(magnetic inductive sensor readout)	: 2 x DN1.7 (MN-54), 2 x DN2.5 (MN-15/ MN-25), 2 x DN3.9 (MN-55), 2 x DN5.3 (MN-16)
Pressure rating (PN)	: 207 bar (3002 psi) (MN-15/MN-25/MN-54), 157 bar (2277 psi) (MN-55), 189 bar (2741 psi) (MN-16)
Process connections	: OD compression type, face seal male or (welded) female, in various diameters
Leak integrity	: $< 2 \times 10^{-9}$ mbar l/s He
Ingress protection (housing)	: IP54 tested (IP66/67 certification pending)

Electrical properties

Power supply	: +15 ... 24 Vdc $\pm 10\%$
Power consumption	: Meter: 2.5 W typical; for fieldbus add 0.9 W
Customized I/O #1	: Analog in/out (0...5 (10) Vdc or 0 (4)...20 mA) : Digital in (frequency, pulse) : Digital out (frequency, pulse, PWM)
Customized I/O #2	: Analog out (0...5 (10) Vdc or 0 (4)...20 mA) : Digital in (frequency, pulse) : Digital out (frequency, pulse, PWM)
Actuator output	: Analog signal for Bronkhorst valve control

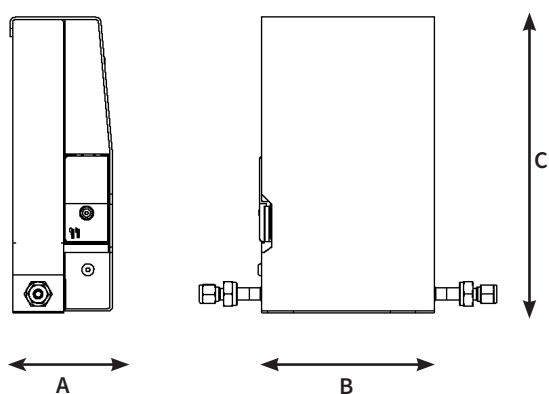
Connectivity

• Serial	: ProPar RS232 (default) RS485 (optional)
Options:	
• RS232/RS485	: Modbus RTU/ASCII, FLOW-BUS, PROFIBUS DP
• Ethernet	: PROFINET, POWERLINK, EtherNet/IP, Modbus TCP, EtherCAT
• CAN 2.0	: CANopen, DeviceNet
• Analog	: 0 ... 5(10) Vdc, 0(4) ... 20 mA

Electrical conditions

Main	: M12-8 pins, male, A-coded
Ethernet	: 2 x M12-4 pins, female, D-coded
CANopen/DeviceNet	: M12-5 pins, male, A-coded
Modbus-RTU/FLOW-BUS	: M12-5 pins, male, A-coded
Profibus DP	: M12-5 pins, female, B-coded
Actuator	: M8-4 pins, female
Service and monitoring port	: USB-C

Dimensions (mm)



Product	A	B	C
MN-54ST	78.5 mm	120 mm	215.5 mm
MN-15ST	78.5 mm	136 mm	232 mm
MN-25ST	78.5 mm	136 mm	232 mm
MN-55ST	78.5 mm	136 mm	232 mm
MN-16ST	96.5 mm	164 mm	267 mm