

M14V10I

MINI CORI-FLOW™ M14V10I

Low Flow Coriolis Mass Flow Controller for Gases

- High accuracy, excellent repeatability
- Fast response
- Independent of fluid properties
- Additional density and temperature output
- Compact, rugged (IP65) design
- Optional ATEX approval Cat.3, Zone 2
- Valve function: Normally Closed



Low Flow Coriolis Mass Flow Controllers for Gases

mini CORI-FLOW™ Mass Flow Meters and Controllers are precise and compact instruments, based on the [Coriolis measuring principle](#), designed to cover the needs of the low flow market. Bronkhorst® model M14V10I Mass Flow Controller (MFC) is suited for highly accurate control of gas flow ranges between 0,03...1 kg/h and 0,6...30 kg/h (which corresponds with 0,4...13,3 l_n/min up to 8...400 l_n/min when used on nitrogen) at operating pressures up to 100 bar (higher on request). The instruments are equipped with a robust IP65 weatherproof housing and are optionally available with ATEX approval for use in Zone 2 hazardous areas.

The instrument contains a microprocessor based pc-board with signal and fieldbus conversion and a PID controller for mass flow control by means of an integrated control valve (normally closed).

Technical specifications

Measurement / control system

Flow range (intermediate ranges available)	min. 0,03...1 kg/h max. 0,6...30 kg/h
Mass flow accuracy	±0,5% of rate
Turndown	≥ 1:50
Repeatability	±0,05% of rate ± ½(ZS* x 100/actual flow)%
Zero Stability (ZS)*	< ±6 g/h
Settling time (<2% of setpoint)	1 sec. (typical)
Max. Kv-value	1,7 x 10 ⁻²
Operating temperature	0...70°C; for ATEX Cat.3, Zone 2 max. 50°C
Temperature effect**	on zero: < 0,5 g/h/°C; on span: < 0,001% Rd/°C; self heating (at zero flow): ≤ 15°C
Temperature accuracy	±0,5°C
Density accuracy	< ±5 kg/m ³
Mounting***	Any position, attitude sensitivity negligible
Leak integrity (outboard)	< 2 x 10 ⁻⁹ mbar l/s He
Warm-up time	> 30 min. for optimum accuracy

Mechanical parts

Material (wetted parts)	stainless steel 316L or comparable
Housing	stainless steel 430F
Sensor	single tube, DN 1.3
Pressure rating	100 bar abs
Process connections (welded)	compression type or face seal couplings
Seals	metal
Valve seat	Kalrez® -6375, other on request
Weight	1,5 kg
Ingress protection (housing)	IP65 (weatherproof)

Electrical properties

Power supply	+15...24 Vdc +/- 10% Max. ripple recommended: 50 mV tt
Max. power consumption	max. 7 W
Analog output	0...5 (10) Vdc, min. load impedance > 2 kΩ; 0 (4)...20 mA (sourcing), max. load impedance < 375 Ω
Analog setpoint	0...5 (10) Vdc, min. load impedance > 100 kΩ; 0 (4)...20 mA (sourcing), max. load impedance ~ 250 Ω
Digital communication	standard: RS232; options: PROFIBUS DP, DeviceNet™, Modbus RTU or ASCII, FLOW-BUS

Electrical connection

Analog/RS232	8-pin DIN (male);
PROFIBUS DP	bus: 5-pin M12 (female); power: 8-pin DIN (male);
Devicenet™/FLOW-BUS/Modbus	5-pin M12 (male);

* Guaranteed at constant temperature and for unchanging process and environment conditions.

** Depends on flow rate, heat capacity fluid, T amb., T fluid and cooling capacity.

*** To be rigidly bolted to a stiff and heavy mass or construction for guaranteed zero stability.

External shocks or vibrations should be avoided.

Technical specifications and dimensions subject to change without notice.

For dimensional drawings and hook-up diagrams please visit the [productpage](#) on our [website](#)

Recommended accessories



E-8000 - DIGITAL READOUT / CONTROL SYSTEMS

Bright, wide angle, 1.8" display (TFT technology)

User friendly operation, menu driven with 4 push buttons



BRIGHT - COMPACT LOCAL READOUT/CONTROL MODULE

Bright, wide angle, 1.8" display

User friendly operation

Indication/operation/configuration



PIPS - PLUG-IN POWER SUPPLY

For lab-style or industrial devices

Interchangeable plugs (Euro, UK, USA, Australian, IEC) for mains connection

Related products



MINI CORI-FLOW™ M14

Min. flow 0,03...1 kg/h
Max. flow 0,3...30 kg/h
Pressure rating 200 bar
Independent of fluid properties
High accuracy, fast response



MINI CORI-FLOW™ M14V111

Min. flow 0,03...1 kg/h
Max. flow 0,3...30 kg/h
Pressure rating 100 bar
Independent of fluid properties
High accuracy, fast control (N/O)



MINI CORI-FLOW™ M15

Min. flow 0,2...5 kg/h
Max. flow 3...300 kg/h
Pressure rating 100 bar
Independent of fluid properties
High accuracy, fast response



MINI CORI-FLOW™ M13V10I

Min. flow 1...50 g/h
Max. flow 20...2000 g/h
Pressure rating 100 bar
Independent of fluid properties
High accuracy, fast control (N/C)



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