

XM13

MINI CORI-FLOW EX D XM13

Ex-Proof Coriolis Mass Flow Meter/Controller for low flow rates

- High accuracy, excellent repeatability
- Fast response
- Independent of fluid properties
- Additional density and temperature output
- IECEx and ATEX Zone 1 approved



Ex-proof Coriolis Mass Flow Meters/Controllers for low flow rates

mini CORI-FLOW Ex d Mass Flow Meters are precise and compact instruments for low flow rates, based on the [Coriolis measuring principle](#), built in an explosion proof housing for use in IECEx and ATEX Zone 1 hazardous areas, ATEX approval II 2 G Ex d e IIB T6 Gb. Bronkhorst® model XM13 Mass Flow Meter (MFM) is suited for highly accurate measurement of gas or liquid flow ranges between 1...50 g/h and 20...2000 g/h (which corresponds with 13,3...666 ml_n/min up to 0,26...26,6 l_n/min when used on nitrogen) at operating pressures up to 138 bar (a).

The instrument contains a microprocessor based pc-board with signal and fieldbus conversion and a PID controller for optional mass flow control by means of a separately mounted control valve or pump.

Technical specifications

Measurement / control system

Flow range (intermediate ranges available)	min. 0,1...5 g/h max. 2...200 g/h
Mass flow accuracy	Liquid: $\pm 0,2\%$ RD; Gas: $\pm 0,5\%$ RD
Repeatability	$\pm 0,05\%$ of rate $\pm \frac{1}{2}(ZS^* \times 100/\text{actual flow})\%$
Turndown ratio	Meter: up to 1:100; Controller: $\geq 1:50$
Zero stability (ZS)	$< \pm 0,2$ g/h (Guaranteed at constant temperature and for unchanging process and environmental conditions.)
Response time (sensor)	≤ 200 msec
Settling time (in control, typical)	1 sec. (typical)
Temperature range	Ambient temperature range: 0...55°C; Process temperature range: 0...70°C
Temperature effect	on zero: $< 0,02$ g/h/°C; on span: $< 0,001\%$ Rd/°C; self heating (at zero flow): < 15 °C (Depends on flow rate, heat capacity fluid, T amb., T fluid and cooling capacity.)
Mounting	Any position, attitude sensitivity negligible. External shocks or vibrations should be avoided.
Temperature accuracy	$\pm 0,5$ °C
Density accuracy	$< \pm 5$ kg/m ³
Leak integrity, outboard	Outboard $< 2 \times 10^{-9}$ mbar l/s He
Warm-up time	> 30 min for optimum accuracy

Mechanical parts

Sensor	single tube, DN 0,5
Valve seat	Kalrez®-6375, other on request; (for controllers)
Material (wetted parts)	stainless steel 316L or comparable
Pressure rating (PN)	138 bar abs
Process connections	1/8" OD compression type (welded); other on request
Seals	metal
Ingress protection	IP66

Electrical properties

Power supply	+15...24 Vdc +/- 10% Max. ripple recommended: 50 mV tt
Max. power consumption	Meter: max. 3 W; Controller: max. 7 W
Analog output	0...5 (10) Vdc, min. load impedance > 2 k Ω ; 0 (4)...20 mA (sourcing), max. load impedance < 375 Ω ; on request: Ex i output 4...20 mA
Analog setpoint	(for MFM + pump or control valve) 0...5 (10) Vdc, min. load impedance > 100 k Ω ; 0 (4)...20 mA (sourcing), max. load impedance ~ 250 Ω
Digital communication	standard: RS232; options: PROFIBUS DP, DeviceNet™, Modbus RTU or FLOW-BUS
Electrical connection	All instrument connections are wired to screw terminals

External actuator options to be connected to the controller

Electromagnetic control valve (Bronkhorst®)	C2I valve with XC coil or XB coil through barrier
Pneumatic actuated control valve (Badger Meter)	RC200 valve with Ex d TEIP11 I/P converter
Mass Flow Meter controlled pump	Pump with ATEX zone 1 U/f converter

Ex-proof specifications

Approvals (MFM)	ATEX: II 2 G Ex d e IIB T6 Gb DEKRA 12ATEX0144X IECx: Ex d e IIB T6 Gb IECEx DEK 12.00400 TIIS Zone 1 / JP Ex IIB T6 Gb DEK 19.0041
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Technical specifications subject to change without notice.

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

Recommended accessories



E-8000 SERIE

Digital Readout / Control Systems

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

User friendly operation, menu driven with 4 push buttons

Related products



MINI CORI-FLOW EX D XM12

Min. flow 0,1...5 g/h

Max. flow 2...200 g/h

Pressure rating 138 bar

IECEX and ATEX Zone 1 approved

Independent of fluid properties



MINI CORI-FLOW EX D XM14

Min. flow 0,03...1 kg/h

Max. flow 0,3...30 kg/h

Pressure rating 107 bar

IECEX and ATEX Zone 1 approved

Independent of fluid properties



MINI CORI-FLOW™ M13

Min. flow 1...50 g/h

Max. flow 20...2000 g/h

Pressure rating 200 bar

Independent of fluid properties

High accuracy, fast response



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