

DATASHEET XM12

mini CORI-FLOW Ex d XM12

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



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 XM12 Mass Flow Meter (MFM) is suited for highly accurate measurement of gas or liquid flow in the range of 0...200 g/h (which corresponds with 0...2,66 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 rates	Liquid: 0...200 g/h (nominal flow rate: 100 g/h); Gas: 0...2,66 l _n /min (N ₂); Full Scale (FS) value is user-configurable
Mass flow accuracy	Liquid: ±0,2% Rd; Gas: ±0,5% Rd
Repeatability	±0,05% of rate ± ½(ZS* x 100/actual flow)%
Turndown ratio	Meter: up to 1:100; Controller: ≥ 1:50
Zero stability (ZS)	< ± 0,02 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: < 0,01 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	± 0,5°C
Density accuracy	< ± 5 kg/m ³ (at full scale flow)

Measurement / control system

Leak integrity, outboard	tested < 2×10^{-9} mbar l/s He
Warm-up time	> 30 min. for optimum accuracy

Mechanical parts

Sensor	single tube, DN 0,25
Valve seat	Kalrez®-6375, other on request (for controllers)
Material (wetted parts)	stainless steel 316L or comparable
Pressure rating (PN)	138 bar a
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

Electrical connection

Control valve options

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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Approvals / certificates

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 SERIES

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 XM13

Flow range 0...2000 g/h
Pressure rating 138 bar
IECEx and ATEX Zone 1 approved
Independent of fluid properties



MINI CORI-FLOW™ M12

Flow range 0...200 g/h
Pressure rating 200 bar
Independent of fluid properties
High accuracy, fast response



Bronkhorst High-Tech designs and manufactures innovative instruments and subsystems for low-flow measurement and control for use in laboratories, machinery and industry. Driven by a strong sense of sustainability and with many years of experience, we offer an extensive range of (mass) flow meters and controllers for gases and liquids, based on thermal, Coriolis and ultrasonic measuring principles. Our global sales and service network provides local support in more than 40 countries. Discover Bronkhorst[®]!