

F-206AX

EX-FLOW F-206AX

Ex-Proof Mass Flow Controller for High Gas Flow

- ATEX approval Cat.2, Zone 1
- High accuracy, excellent repeatability
- Virtually pressure and temperature independent
- Compact design



Intrinsically Safe Gas Mass Flow Controllers for high flow rates

Bronkhorst® EX-FLOW Mass Flow Controllers (MFCs) are suited for precise gas flow control in ATEX Zone 1 hazardous areas. The flow meter part and the control valve of the MFC should be connected (via separate cables) to a power supply with galvanic isolation / preamplifier / readout system (located in the safe zone) which contains a controller board to complete the control loop. See Bronkhorst® [E-8000 Series](#).

EX-FLOW model F-206AX covers flow ranges from 0,4...20 m³_n/h up to 4...200 m³_n/h (N₂-equivalent) at operating pressures up to 64 bar.

The intrinsically safe measuring head of the flow meter is tested according to ATEX 114 Directive 2014/34/EU and approved under EC-Type Examination Number: KEMA 01ATEX1172, protection II 2 G Ex ib IIC T4 Gb.

The intrinsically safe valve coils are explosion proof certified and available in two options (ATEX certification only):

Coil XB: protection II 1 G Ex ia IIC T6 / protection II 1 D Ex ta IIIC T80°C

Coil XC: protection II 2 G Ex eb IIC T4 / protection II 2 D Ex tb IIIC T130°C

Technical specifications

Measurement / control system

| | |
|--|---|
| Flow range (intermediate ranges available) | min. 0,4...20 m3 _n /h max. 4...200 m3 _n /h (based on N ₂) |
| Accuracy (incl. linearity) (based on actual calibration) | ± 1 % FS |
| Repeatability | < 0,2 % RD |
| Turndown ratio | 1:50 (2...100%) |
| Time constant | 5 sec. |
| Control stability | ≤ ± 0,1 % FS typical |
| Operating temperature | -10 ... +65 °C |
| Temperature sensitivity | zero: < 0,05% FS/°C; span: < 0,05% Rd/°C |
| Max. Kv-value | 0,15 ... 1,5 |
| Leak integrity, outboard | tested < 2 x 10 ⁻⁹ mbar l/s He |
| Attitude sensitivity | max. error at 90° off horizontal 0,2% FS at 1 bar, typical N ₂ |
| Warm-up time | 30 min. for optimum accuracy 2 min. for accuracy ± 2% FS |

Mechanical parts

| | |
|-------------------------|--|
| Material (wetted parts) | Stainless steel 316L or comparable |
| Pressure rating (PN) | 64 bar abs |
| Process connections | compression type or face seal (VCR/VCO) couplings |
| Seals | standard: Viton®; options: EPDM, Kalrez® (FFKM) |
| Ingress protection | IP65 |

Electrical properties

| | |
|---|--|
| Signal circuit | type of explosion protection: intrinsic safety Ex ib IIC, only for connection to a certified intrinsically safe circuit with the following maximum values: Ui = 28 V, Ii = 98 mA, Pi = 686 mW The effective internal capacitance between: Terminals 1 and 3: Ci = 1 nF; Effective internal inductance: Li = 0,3 mH |
| Output signal | 15 ... 20 mA (linear) |
| I/O signals via PS/Readout (located in safe area) | analog: 0...5 Vdc, 0...10 Vdc, 0...20 mA, 4...20 mA; digital: RS232, PROFIBUS DP, DeviceNet™, Modbus RTU or ASCII, PROFINET, EtherCAT®, FLOW- BUS |
| XB-coil | Coil voltage max. 28 V/110 mA; 295 Ohm at 20°C |
| XC-coil | Coil voltage max. 24 V; 65 Ohm at 20°C, Pmax = 9 W at 20°C |

Electrical connection

| | |
|-------------------------|--|
| Ex-proof measuring head | Terminal connection, cable gland M16x1,5 |
| Control valve coil | cable gland M20x1,5 |

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



EX-FLOW F-203AX

Flow ranges from 4...200 l/min up to
25...1250 l/min

Pressure rating 64 bar

ATEX approval Cat.2, Zone 1

Rugged IP65 construction



EX-FLOW F-116BX

Flow ranges from 1...50 m³n/h up to
7,5...375 m³n/h

Pressure rating 100 bar

ATEX approval Cat.2, Zone 1

Rugged IP65 construction



EX-FLOW F-206BX

Flow ranges from 1...50 m³n/h up to
7,5...375 m³n/h

Pressure rating 64 bar

ATEX approval Cat.2, Zone 1

Rugged IP65 construction



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