

# F-206AX

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## EX-FLOW F-206AX

Ex-Protected Mass Flow Controller for High Gas Flow

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



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### 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 m<sup>3</sup><sub>n</sub>/h up to 4...200 m<sup>3</sup><sub>n</sub>/h (N<sub>2</sub>-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

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### Technical specifications

Measurement / control system

Flow range (intermediate ranges available)	min. 0,4...20 m3 <sub>n</sub> /h max. 4...200 m3 <sub>n</sub> /h (based on N <sub>2</sub> )
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 <sup>-9</sup> mbar l/s He
Attitude sensitivity	max. error at 90° off horizontal 0,2% FS at 1 bar, typical N <sub>2</sub>
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](#)

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## 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 m<sup>3</sup>n/h up to  
7,5...375 m<sup>3</sup>n/h

Pressure rating 100 bar

ATEX approval Cat.2, Zone 1

Rugged IP65 construction



**EX-FLOW F-206BX**

Flow ranges from 1...50 m<sup>3</sup>n/h up to  
7,5...375 m<sup>3</sup>n/h

Pressure rating 64 bar

ATEX approval Cat.2, Zone 1

Rugged IP65 construction



**BRONKHORST USA INC.**

57 South Commerce Way

Suite 120

USA - Bethlehem, PA 18017

Tel. +1-610-866-6750

[sales@bronkhorstusa.com](mailto:sales@bronkhorstusa.com)