

DATASHEET F-106AX

EX-FLOW F-106AX

Ex-Protected Mass Flow Meter for High Gas Flow



Intrinsically Safe Gas Mass Flow Meters for high flow rates

Bronkhorst® EX-FLOW Mass Flow Meters (MFM) are suited for precise gas flow measurement in ATEX Zone 1 hazardous areas. The MFM should be connected to a power supply with galvanic isolation / preamplifier / readout system (located in the safe zone). See Bronkhorst® [E-8000 Series](#).

EX-FLOW model F-106AX covers flow ranges from 0,4...20 m³_n/h up to 4...200 m³_n/h (N₂-equivalent) at operating pressures up to 40 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.
Other certifications: IECEx (IECEx DEK14.0060), TIIS (検・第TC21584号) and KCs = Ex ib IIC T4.

Technical specifications

| Measurement / control system | |
|--|---|
| Flow range (intermediate ranges available) | min. 0,4...20 m ³ _n /h max. 4...200 m ³ _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. |
| Operating temperature | -10 ... +70 °C |
| Temperature sensitivity | zero: < 0,05% FS/°C; span: < 0,05% Rd/°C |
| 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) | up to 40 bar abs (PN10, 16, 40); for hazardous gases such as O ₂ , H ₂ , etc. do not exceed operating pressure of 10 bar; for higher pressure select a flanged type MFM, series F-107/F-117. |

Mechanical parts

| | |
|---------------------|--|
| Process connections | Wafer type, for mounting between flanges according to DIN DN40 or ANSI 1½" |
| Seals | standard: FKM/Viton®; options: EPDM, FFKM/Kalrez® |
| Ingress protection | IP65 |

Electrical properties

| | |
|--|--|
| Output signal | 15 ... 20 mA (linear) Terminal connection, cable gland M16x1,5 |
| 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 |

Electrical connection

| | |
|-------------------------|--|
| Ex-proof measuring head | Terminal connection, cable gland M16x1,5 |
|-------------------------|--|

Control valve options

External actuator options to be connected to the controller

Ex-proof specifications

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



EX-FLOW F-113AX

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

Pressure rating 100 bar

ATEX approval Cat.2, Zone 1

Rugged IP65 construction



EX-FLOW F-116AX

Flow ranges from 0,4...20 m³n/h up to 4...200 m³n/h

Pressure rating 100 bar

ATEX approval Cat.2, Zone 1

Rugged IP65 construction



EX-FLOW F-107AX

Flow ranges from 0,4...20 m³n/h up to 4...200 m³n/h

Pressure rating up to 40 bar

ATEX approval Cat.2, Zone 1

Rugged IP65 construction



EX-FLOW F-106BX

Flow ranges from 1...50 m³n/h up to 10...500 m³n/h

Pressure rating up to 40 bar

ATEX approval Cat.2, Zone 1

Rugged IP65 construction