F-116AX

EX-FLOW F-116AX

Ex-Proof Mass Flow Meter for High Gas Flow

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



Intrinsically Safe Gas Mass Flow Meters for high flow rates

Bronkhorst® EX-FLOW Mass Flow Meters (MFMs) 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-116AX covers flow ranges from 0,4...20 m^3_n/h up to 4...200 m^3_n/h (N_2-equivalent) at operating pressures up to 100 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)	100 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

Electrical connection

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

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-113AX

Flow ranges from 4…200 ln/min up to 25…1250 ln/min

Pressure rating 100 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-106AX

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-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

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