

# DATASHEET F-106DX

## EX-FLOW F-106DX

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-106DX covers flow ranges from 3,6...180 m<sup>3</sup><sub>n</sub>/h up to 36...1800 m<sup>3</sup><sub>n</sub>/h (N<sub>2</sub>-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. 3,6...180 m <sup>3</sup> <sub>n</sub> /h max. 36...1800 m <sup>3</sup> <sub>n</sub> /h (based on N <sub>2</sub> )
Accuracy (incl. linearity) (based on actual calibration)	± 1 % FS up to 1100 m <sup>3</sup> <sub>n</sub> /h N <sub>2</sub> -equivalent; for higher flows please contact factory
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 <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)	up to 40 bar abs (PN10, 16, 40); for hazardous gases such as O <sub>2</sub> , H <sub>2</sub> , etc. do not exceed operating pressure of 10 bar; for higher pressure select a flanged type MFM, series F-107/F-117.

## Mechanical parts

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Process connections	Wafer type, for mounting between flanges according to DIN DN100 or ANSI 4"
Seals	standard: FKM/Viton®; options: EPDM, FFKM/Kalrez®
Ingress protection	IP65

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## Electrical properties

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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

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## Electrical connection

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Ex-proof measuring head	Terminal connection, cable gland M16x1,5
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## 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](#)

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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

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## Related products



**EX-FLOW F-106CX**

Flow ranges from 2...  
100 m<sup>3</sup>n/h up to 20...  
1000 m<sup>3</sup>n/h  
Pressure rating up to 40  
bar  
ATEX approval Cat.2,  
Zone 1  
Rugged IP65  
construction



**EX-FLOW F-107DX**

Flow ranges from 3,6...  
180 m<sup>3</sup>n/h up to 36...  
1800 m<sup>3</sup>n/h  
Pressure rating up to 40  
bar  
ATEX approval Cat.2,  
Zone 1  
Rugged IP65  
construction



**EX-FLOW F-106EX**

Flow ranges from 8...  
400 m<sup>3</sup>n/h up to 80...  
4000 m<sup>3</sup>n/h  
Pressure rating up to 40  
bar  
ATEX approval Cat.2,  
Zone 1  
Rugged IP65  
construction