

# DATASHEET IQFD-100C

## IQ+FLOW IQFD-100C Downported MFM

Micro Fluidic Mass Flow Meter for Gases, Downported



### MEMS based Mass Flow Meter for Gases, for OEM Applications

Bronkhorst® IQ+FLOW® model IQFD-100C Mass Flow Meters (MFMs) are suited for precise measurement of dry, clean, non-corrosive, non-explosive gases. The ultra compact, downported MFM has a chip-based (MEMS) thermal mass flow sensor and is suited for flow ranges between 0,2...10 ml<sub>N</sub>/min and 0,1...5 l<sub>N</sub>/min N<sub>2</sub>-equivalent at operating pressures between vacuum and 10 bar(g). Communication with the devices can be either in analog mode or digital over RS232 or RS485.

The ultra compact IQ+FLOW instruments are typically recommended for integration in analytical and medical equipment.

### Technical specifications

#### Measurement / control system

Flow range (intermediate ranges available)	min. 0,2...10 ml <sub>N</sub> /min max. 0,1...5 l <sub>N</sub> /min (based on N <sub>2</sub> )
Accuracy (incl. linearity) (based on actual calibration)	< ±1,5% RD + ±0,5% FS (Based on calibration with actual gas, at ambient temperature and at customer specified inlet pressure. Horizontal mounting position.)
Repeatability	for flows < 20 ml <sub>N</sub> /min: < ±0,5% FS; for flows > 20 ml <sub>N</sub> /min: < ±0,5% RD
Turndown ratio	1:50 (2...100%)
Operating pressure	0 ... 10 bar g
Fluids	Dry, clean, non-corrosive gases. Standard calibration gases Air, N <sub>2</sub> , Ar, He, CO <sub>2</sub> and H <sub>2</sub> . Other dry, clean, non-corrosive gases on request (O <sub>2</sub> , CO, ...)
Multi fluid capability	Storage of max. 8 calibration curves
Operating temperature	5 ... 50 °C
Temperature sensitivity	span: 0,2% RD/°C; zero: 0,01 ml <sub>N</sub> /min/°C
Pressure drop	0,3 psi dif (20 mbard) based on 1 l <sub>N</sub> /min Air at 0 bar(g)
Leak integrity, outboard	< 1 x 10 <sup>-8</sup> mbar·l/s He
Attitude sensitivity	max. error at 90° off horizontal 0,5 ml <sub>N</sub> /min at 1 bar, typical N <sub>2</sub>

#### Mechanical parts

Material (wetted parts)	aluminium, Si, SiO <sub>x</sub> , epoxy; option: stainless steel body (SS316L)
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## Mechanical parts

Process connections	downported construction
Seals	standard: Viton®; other on request
Weight	100 g (Aluminium) / 160 g (SS316L)
Ingress protection	IP40

## Electrical properties

Readout sample time	2 msec
Power supply	+ 15 ... 24 Vdc
Max. power consumption	50 mA
Analog output	0...5 (10) Vdc or 0 (4)...20 mA (sourcing output)
Digital communication	RS232, RS485 (Modbus-RTU/ASCII or FLOW-BUS)

## Electrical connection

Power/Analog/RS232/RS485	RJ45 modular jack
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## Control valve options

## External actuator options to be connected to the controller

## Certification for hazardous areas

## 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



### PIPS SERIES

#### Plug-in Power Supply

For lab-style or industrial devices  
Interchangeable plugs (Euro, UK, USA, Australian, IEC) for mains connection

## Related products



### IQ+FLOW IQF-100C MFM

Min. flow 0...10 mln/min  
Max. flow 0...5 lln/min  
Pressure rating 10 bar  
Ultra compact  
MEMS technology



### IQ+FLOW IQF-200C MFC

Min. flow 0...10 mln/min  
Max. flow 0...5 lln/min  
Pressure rating 10 bar  
Ultra compact  
MEMS technology



### IQ+FLOW IQFD-200C DOWNPORTED MFC

Min. flow 0...10 mln/min  
Max. flow 0...5 lln/min  
Pressure rating 10 bar  
Ultra compact (MEMS technology)  
Top-mount construction



### IQ+FLOW IQPD-600C EPC (P2-CONTROL)

Min. pressure 0,025...0,5 bar  
Max. pressure 0,5...10 bar  
Ultra compact; downported  
MEMS technology