

DATASHEET IQFD-200C

IQ+FLOW IQFD-200C Downported MFC

Micro Fluidic Mass Flow Controller for Gases,
Downported



MEMS based Mass Flow Controller for Gases, for OEM Applications

Bronkhorst® IQ+FLOW® model IQFD-200C Mass Flow Controllers (MFCs) are suited for precise control of dry, clean, non-corrosive, non-explosive gases. The ultra compact, downported MFC has a chip-based (MEMS) thermal mass flow sensor and is suited for flow ranges between 0,2... 10 ml_n/min and 0,1... 5 l_n/min N₂-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 _n /min max. 0,1... 5 l _n /min (based on N ₂)
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 _n /min: < ±0,5% FS; for flows > 20 ml _n /min: < ±0,5% RD
Turndown ratio	1:50 (2... 100%)
Operating pressure	0 ... 10 bar g
Media	Dry, clean, non-corrosive gases. Standard calibration gases Air, N ₂ , Ar, He, CO ₂ and H ₂ . Other dry, clean, non-corrosive gases on request (O ₂ , CO, ...)
Multi fluid capability	Storage of max. 8 calibration curves
Settling time (in control, typical)	t98% down to 300 msec, 700 msec typical
Operating temperature	5 ... 50 °C
Temperature sensitivity	span: 0,2% RD/°C; zero: 0,01 ml _n /min/°C
Max. Kv-value	2,37 x 10 ⁻³
Leak integrity, outboard	< 1 x 10 ⁻⁸ mbar.l/s He
Attitude sensitivity	max. error at 90° off horizontal 0,5 ml _n /min at 1 bar, typical N ₂

Mechanical parts

Material (wetted parts)	aluminium, Si, SiOx, epoxy; option: stainless steel body (SS316L)
Process connections	downported construction
Seals	standard: Viton®; other on request
Weight	120 g (Aluminium) / 180 g (SS316L)
Ingress protection	IP40
Max. differential pressure across control valve	9 bar dif.

Electrical properties

Readout sample time	2 msec
Power supply	+ 15 ... 24 Vdc
Max. power consumption	100 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

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



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 ln/min
Pressure rating 10 bar
Ultra compact
MEMS technology



IQ+FLOW IQFD-100C DOWNPORTED MFM

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



IQ+FLOW IQF-200C MFC

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



IQ+FLOW IQPD-500C

Min. pressure 0,01...0,5 bar
Max. pressure 0,2...10 bar
Ultra compact; downported
MEMS technology