

DATASHEET D-6383-BJ-1-2INCH

MASS-STREAM D-6383/BJ-1/2 MFC

Direct Thermal Mass Flow Controller for Gases, IP65 protected



IP54 Mass Flow Controllers for high flow rates of gases

Bronkhorst® model D-6383/BJ-1/2" Mass Flow Controllers (MFCs) are suited for precise measurement of flow ranges between 10...500 l_n/min and 100...5000 l_n/min at operating pressures between vacuum and 16 bar (g). The MFC consists of a proven inline thermal (CTA) mass flow sensor, a precise control valve and a microprocessor based pc-board with signal and fieldbus conversion. As a function of a setpoint value, the flow controller swiftly adjusts the desired flow rate. The instrument is IP54 compliant and can optionally be equipped with a modern, multi-functional and multi-colour display, with operator buttons on the instrument.

The digital MASS-STREAM™ series is characterized by a high degree of signal integrity and, as an option, up to 8 calibration curves of different gases and process conditions can be memorized in the instrument. In addition to the standard RS232 output the instruments also offer analog I/O. As an option, an on-board interface can be mounted to provide CANopen®, DeviceNet™, EtherCAT®, PROFIBUS DP, PROFINET, Modbus RTU, ASCII or TCP/IP, EtherNet/IP, POWERLINK or FLOW-BUS protocols.

Technical specifications

Measurement / control system

Flow range (intermediate ranges available)	min. 10...500 l _n /min max. 100...5000 l _n /min (based on N ₂)
Accuracy (incl. linearity) (based on actual calibration)	± 1.0% RD plus ± 0.5% FS (at calibration conditions)
Repeatability	< 0,2 % FS
Turndown ratio	up to 1:30
Type of gases	almost all gases, compatible with chosen materials
Response time (sensor)	approx. 0,9 sec.
Control stability	< 0,2 % FS typical
Operating temperature	0 ... 50 °C
Temperature sensitivity	± 0,2% Rd/°C (Air)
Pressure sensitivity	±0,3% Rd/bar typical (Air)
Max. Kv-value	1,1 / 3,4 (remain position)
Leak integrity, outboard	tested < 2 x 10 ⁻⁸ mbar l/s He

Measurement / control system

Attitude sensitivity at 90° deviation from horizontal max. error 0,2 % at 1 bar typical N₂

Warm-up time 30 min. for optimum accuracy,
within 30 seconds for accuracy ±4% FS

Mechanical parts

Sensor Stainless steel SS 316 (AISI 316L)

Pressure rating (PN) 10 bar g for instrument body in aluminium,
16 bar g for instrument body in stainless steel SS 316

Process connections G1/2" / compression type couplings

Seals standard: Viton®; option: EPDM

Ingress protection IP65 (if applicable IP54 for motor driven valve)

Instrument body Aluminium AL 50ST/51ST (anodised) or stainless steel SS 316;
if applicable: Brass body of motor driven valve

Sieves and rings Teflon or stainless steel SS 316

Electrical properties

Power supply +24 Vdc ±10%

Max. power consumption	Supply	Basic consumption	Add. for fieldbus	Add. for display
	24 V	260 mA	50 mA	20 mA

Analog output 0...5 (10) Vdc or 0 (4)...20 mA (sourcing output)

Digital communication standard: RS232
options: CANopen®, DeviceNet™, EtherCAT®, PROFIBUS DP, PROFINET, Modbus RTU, ASCII or TCP/IP, EtherNet/IP, POWERLINK or FLOW-BUS

Electrical connection

Analog/RS232 8 DIN (male);

PROFIBUS DP bus: 5-pin M12 (female);
power: 8 DIN (male)

CANopen® / DeviceNet™ 5-pin M12 (male)

Modbus RTU / FLOW-BUS 5-pin M12 (male)

Modbus TCP / EtherNet/IP /
POWERLINK bus: 2 x 5-pin M12 (female) (in/out);
power: 8 DIN (male);

EtherCAT®/ PROFINET bus: 2 x 5-pin M12 (female) (in/out);
power: 8 DIN (male)

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



PIPS SERIES

Plug-in Power Supply

For lab-style or industrial devices

Interchangeable plugs
(Euro, UK, USA, Australian,
IEC) for mains connection

Related products



MASS-STREAM D-6380 MFM

Min. flow 10...500 l_n/min
Max. flow 50...5000 l_n/min
Pressure rating up to 20
bar
Rugged sensor and
housing (IP65)
Optional integrated TFT
display



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