DATASHEET MV-104

MASS-VIEW® MV-104

Mass Flow Meter for gases with integrated display

MASSFLOW-ONLINE PRODUCT

Gas Mass Flow Meters with integrated display

MASS-VIEW® model MV-104 Direct Thermal Mass Flow Meters (MFMs) are suited for precise measurement of flow ranges between 0,04…2 l_n/min and 0,2…20 l_n/min at operating pressures up to 10 bar(g). The MFM has an integrated graphical OLED display, clearly visible at wide angles, which allows reading of actual flow (value and a bar graph), total flow and type of gas.

The display features easy set up via a user-friendly menu, using a 4-way navigation push button. The pre-installed gases eliminate the need to recalibrate for different gases and therefore reduce the cost of ownership. Additional features & functions include a variety of alarm and counter functions, an analog output signal, digital interfaces and two relay contacts.

The MASS-VIEW® series provides modern, novel and economical alternative to variable area meters (VA meters), also known as purge meters. Unlike conventional VA meters these new flow meters measure mass flow instead of volume flow.

Technical specifications

Measurement / control system

Flow range (intermediate ranges available)	min. 0,04…2 l_n/min max. 0,2…20 l_n/min (based on N_2)
Accuracy (incl. linearity) (based on actual calibration)	± 2% Rd for flow > 50% of max. capacity; ± (1% Rd + 0,5% FS) on lower flows
Repeatability	< 0,2 % FS typical
Turndown ratio	up to 1 : 100
Operating pressure	0 … 10 bar(g) / 0 … 150 psi(g)
Pressure coefficient	± 0,2% Rd/bar typical at Air
Pre-installed gases	Air, Ar, N_2, O_2, CO_2, CH_4, C_3H_8, N_2O, CO and C_4H_{10}
Standard calibration gas	Air, other gases are converted using our Fluidat® conversion model which will introduce extra inaccuracy
Response time (sensor)	2 sec.
Operating temperature	0 … 50 °C (32 … 122°F)
Temperature coefficient	Zero: <0,1% FS/°C, Span: <0,2% Rd/°C
Leak integrity, outboard	tested < 2 x 10^{-9} mbar l/s He
Attitude sensitivity	< 0,1 % FS

Mechanical parts

Material (wetted parts)	Aluminium
Test pressure	21 bar(a) / 300 psi(a)
Process connections	G 1/4" BSPP female thread (compression fittings optional)
Seals	Viton®
Weight	0,7 kg
Ingress protection	IP40

Electrical properties

Power supply	+15 … 24 Vdc (+/- 10%)
Max. power consumption	approx. 135 mA
Analog output	0 … 5 Vdc
Digital communication	RS232 / RS485 (Modbus RTU/ASCII)
Min. and max. relay contacts	switching current 0,5 A, 24 Vdc, one side grounded (0 Vdc power)
Electrical connection	8-pin RJ-45 modular jack

Electrical connection

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

Related products

MASS-VIEW® MV-304

Min. flow 0,04...2 ln/min
Max. flow 0,2...20 ln/min

Pressure rating 10 bar

Bright, graphical OLED display

High quality needle valve

MASS-VIEW® MV-404

Min. flow 0,04...2 ln/min
Max. flow 0,2...20 ln/min

Pressure rating 10 bar

Bright, graphical OLED display

Pressure compensated valve

MASS-VIEW® MV-194-H2

Min. flow 0,1...1 ln/min H2
Max. flow 0,1...10 ln/min H2

Bright, graphical OLED display

Electr. output, alarm and counter

MASS-VIEW® MV-194-HE

Min. flow 0,1...2 ln/min He
Max. flow 0,2...20 ln/min He

Bright, graphical OLED display

Electr. output, alarm and counter

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Bronkhorst High-Tech designs and manufactures innovative instruments and subsystems for low-flow measurement and control for use in laboratories, machinery and industry. Driven by a strong sense of sustainability and with many years of experience, we offer an extensive range of (mass) flow meters and controllers for gases and liquids, based on thermal, Coriolis and ultrasonic measuring principles. Our global sales and service network provides local support in more than 40 countries. Discover Bronkhorst®!