DATASHEET MV-402

MASS-VIEW® MV-402

Mass Flow Regulator for gases with pressure compensation and integrated display

MASSFLOW-ONLINE PRODUCT



Gas Mass Flow Regulators with pressure compensation and integrated display

MASS-VIEW® model MV-402 Mass Flow Regulators (MFRs) are suited for precise measurement and control of flow ranges between 20…200 ml_n/min and 20…2000 ml_n/min at operating pressures up to 10 bar(g). The MFR 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. A high quality needle valve with integrated pressure compensation offers smooth and fine adjustment of the gas flow, even at varying upstream pressures.

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. 20…200 ml_n/min max. 20…2000 ml_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
Media	Non-hazardous gases; Helium excepted
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
Attitude sensitivity	< 0,1 % FS

Mechanical parts

Material (wetted parts)	Meter: Aluminium; Needle valve: SS316, Brass
Test pressure	21 bar(a) / 300 psi(a)
Min. ΔP	1 bar(d)
Max. ΔP	7 bar (d)
Process connections	G 1/4" BSPP female thread (compression fittings optional)
Seals	Viton®, PTFE, Fluorosint®, Buna N; Controller membrane: fiber-reinforced nitrile
Weight	1,4 kg
Ingress protection	IP40
Control accuracy	< 0,5-1% Rd/bar

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-102

Min. flow 20...200 mln/min
Max. flow 20...2000 mln/min

Pressure rating 10 bar

Bright, graphical OLED display

10 pre-installed gases



MASS-VIEW® MV-302

Min. flow 20...200 mln/min
Max. flow 20...2000 mln/min

Pressure rating 10 bar

Bright, graphical OLED display

High quality needle valve



MASS-VIEW® MV-401

Min. flow 20...50 mln/min
Max. flow 20...200 mln/min

Pressure rating 10 bar

Bright, graphical OLED display

Pressure compensated 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

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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®!