

DATASHEET MV-102

MASS-VIEW® MV-102

Mass Flow Meter for gases with integrated display

MASSFLOW-ONLINE PRODUCT



Gas Mass Flow Meters with integrated display

MASS-VIEW® model MV-102 Direct Thermal Mass Flow Meters (MFM) are suited for precise measurement of flow ranges between 20...200 ml_n/min and 20...2000 ml_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. 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 |
| Pre-installed gases | Air, Ar, N ₂ , O ₂ , CO ₂ , CH ₄ , C ₃ H ₈ , N ₂ O, CO and C ₄ H 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-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-402

Min. flow 20...200
mln/min
Max. flow 20...2000
mln/min
Pressure rating 10 bar
Bright, graphical OLED
display
Pressure compensated
valve



MASS-VIEW® MV-192-H2

Min. flow 50...100
mln/min H2
Max. flow 50...1000
mln/min H2
Bright, graphical OLED
display
Electr. output, alarm
and counter



MASS-VIEW® MV-192-He

Min. flow 50...200
mln/min He
Max. flow 50...2000
mln/min He
Bright, graphical OLED
display
Electr. output, alarm
and counter