

# 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 (MFM) are suited for precise measurement of flow ranges between 0,04...2 l<sub>n</sub>/min and 0,2...20 l<sub>n</sub>/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 <sub>n</sub> /min max. 0,2...20 l <sub>n</sub> /min (based on N <sub>2</sub> )
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 <sub>2</sub> , O <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , C <sub>3</sub> H <sub>8</sub> , N <sub>2</sub> O, CO and C <sub>4</sub> H <sub>10</sub>
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 <sup>-9</sup> 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 l/min  
Max. flow 0,2...20 l/min  
Pressure rating 10 bar  
Bright, graphical OLED display  
High quality needle valve



**MASS-VIEW® MV-404**

Min. flow 0,04...2 l/min  
Max. flow 0,2...20 l/min  
Pressure rating 10 bar  
Bright, graphical OLED display  
Pressure compensated valve



**MASS-VIEW® MV-194-H2**

Min. flow 0,1...1 l/min  
H2  
Max. flow 0,1...10 l/min  
H2  
Bright, graphical OLED display  
Electr. output, alarm and counter



**MASS-VIEW® MV-194-HE**

Min. flow 0,1...2 l/min  
He  
Max. flow 0,2...20 l/min  
He  
Bright, graphical OLED display  
Electr. output, alarm and counter