

# DATASHEET MV-391-H2

## MASS-VIEW® MV-391-H2

Hydrogen Flow Regulator with integrated display

MASSFLOW-ONLINE PRODUCT



### Hydrogen Mass Flow Regulators with integrated display

MASS-VIEW® model MV-391-H2 Mass Flow Regulators (MFRs) are suited for precise measurement and control of flow ranges between 20...50 ml<sub>n</sub>/min and 20...200 ml<sub>n</sub>/min hydrogen 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 offers smooth and fine adjustment of the gas flow.

The display features easy set up via a user-friendly menu, using a 4-way navigation push button. 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...50 ml <sub>n</sub> /min max. 20...200 ml <sub>n</sub> /min (based on H <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 : 10
Operating pressure	0 ... 10 bar(g) / 0 ... 150 psi(g)
Pressure coefficient	± 0,2% Rd/bar typical at Air
Standard calibration gas	H <sub>2</sub>
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)	Meter: Aluminium; Needle valve: SS316
Test pressure	21 bar(a) / 300 psi(a)
Process connections	G 1/4" BSPP female thread (compression fittings optional)
Seals	Viton®, PTFE
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](#)

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## Related products



**MASS-VIEW® MV-301**

Min. flow 10...50  
mln/min  
Max. flow 10...200  
mln/min  
Pressure rating 10 bar  
Bright, graphical OLED  
display  
High quality needle  
valve



**MASS-VIEW® MV-392-H2**

Min. flow 50...100  
mln/min H2  
Max. flow 50...1000  
mln/min H2  
Bright, graphical OLED  
display  
High quality needle  
valve