

μ-Flow

Termisk massflödesmätare för vätskor från Bronkhorst High-Tech

Mäter och reglerar från 1,5 mg/h till 2 g/h

Enkel

- Mäter alltid rätt flöde oavsett tryck och temperatur
- Okänslig för vibrationer
- Klarar temperaturer från 5 till +50°C
- Analogt bör- och ärvärde samt RS232-kommunikation
- Lab-version IP40

Ekonomisk

- Enkelt montage med Swagelok-kopplingar, därmed låg installationskostnad
- Medieberörda delar i 316L
- Klarar tryck upp till 400 bar
- Kalibreringskurvor för upp till 8 olika vätskor kan lagras i instrumentet
- Profibus, DeviceNet, Modbus

Noggrann

- +/- 2 % av mätområdet



> Technical specifications

Measurement / control system

Accuracy, standard (based on actual calibration)	: ±2% FS
Turndown	: 1 : 20 (5 ... 100%)
Reproducibility	: ±0,2% FS typical H ₂ O
Settling time (controller)	: 2 ... 4 seconds
Operating temperature	: 5 ... 50°C
Temperature sensitivity	: ±0,2% FS/°C
Attitude sensitivity	: negligible
Warm-up time	: approx. 10 min. for accuracy ±2% FS

Mechanical parts

Material (wetted parts)	: stainless steel 316L; other (PEEK™, Fused Silica) on request
Process connections	: 30...100 mg/h: 10-32 UNF female only; >100 mg/h: 10-32 UNF female, 1/16" or 1/8" OD compression; other on request.
Seals	: meter: all metal controller: Kalrez-6375; other on request
Weight	: meter: 0,2 kg; controller: 0,3 kg
Ingress protection (housing)	: IP40; other on request

Electrical properties

Power supply	: + 15 ... 24 Vdc
Power consumption	: meter: 100 mA; controller: 350 mA add 50 mA for Profibus, if applicable
Analog output/command	: 0...5 (10) Vdc or 0 (4)...20 mA (sourcing output)
Digital communication	: standard: RS232 option: Profibus-DP®, DeviceNet™, Modbus-RTU, FLOW-BUS
Electrical connection	
Analog/RS232	: 9-pin D-connector (male);
Profibus-DP®	: bus: 9-pin D-connector (female); power: 9-pin D-connector (male);
DeviceNet™	: 5-pin M12-connector (male);
Modbus-RTU/FLOW-BUS	: RJ45 modular jack

Technical specifications subject to change without notice.

> Models and flow ranges

Liquid Mass Flow Meters; PN400 (pressure rating 400 bar)

Model	min. flow	max. flow
L01	1,5 ... 30 mg/h	0,1 ... 2 g/h

Liquid Mass Flow Controllers; PN100 (pressure rating 100 bar)

Model	min. flow	max. flow
L01V02	5 ... 100 mg/h	0,1 ... 2 g/h

Indicated ranges are based on fluids with thermal properties similar to H₂O / IPA

Calibration

References	: Verified by NKO, the Dutch calibration organisation, and traceable to Dutch and international standards.
Liquids	: Standard calibration fluids: H ₂ O or IPA (Isopropyl Alcohol); for other liquids apply to factory.
System	: Precision laboratory balances.



L01 Mass Flow Meter for ultra low liquid flow ranges