

The DuoMeter

Offering Both Pressure and Flow Rate Measurement within the Same Channel!

The DuoMeter can be placed in-line, at any desired point to accurately determine both the pressure and flow rate in a fluid channel. The meter is equipped with flow-through pressure and flow sensors. User-friendly software displays, logs and stores data. Alternatively, with its display screen and buttons, the DuoMeter can be used stand-alone, independent of a PC interface.

The flow meter portion of the DuoMeter can be calibrated to measure flow rates of a wide range of liquids.

Connections to the DuoMeter are made using a variety of connectors and adapters, allowing meters to be used with capillary, 1/32-inch, 1/16-inch, 1/8-inch and metric tubing. Additionally barbed fittings are available for use with soft tubing.

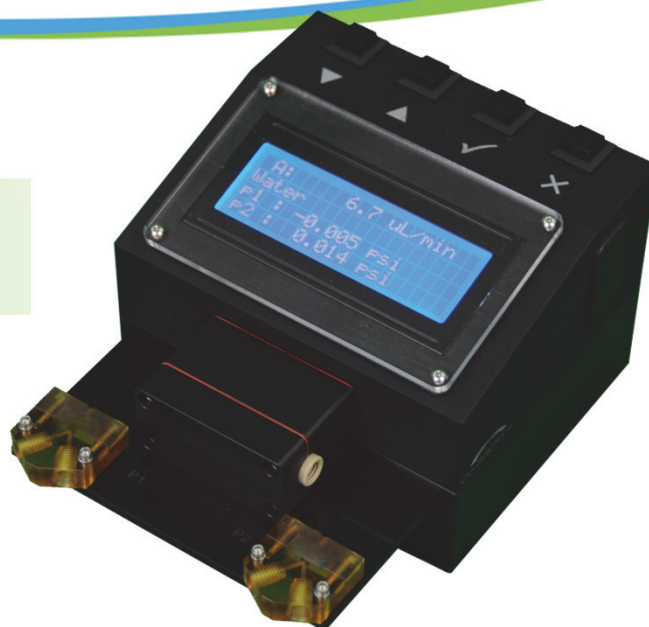
Flow Rate Models Offered

- Nano ±70 to ±7000 nL/min
- Micro ±1 to ±80 microL/min
- Milli ±30 to ±1000 microL/min
- Milli+5 ±0.2 to ±5.0 mL/min

The DuoMeter operates accurately in the flow rate ranges provided. It is possible for a meter to operate outside its range with decreased accuracy. Meters can operate in both positive and negative directions.

Pressure Models Offered

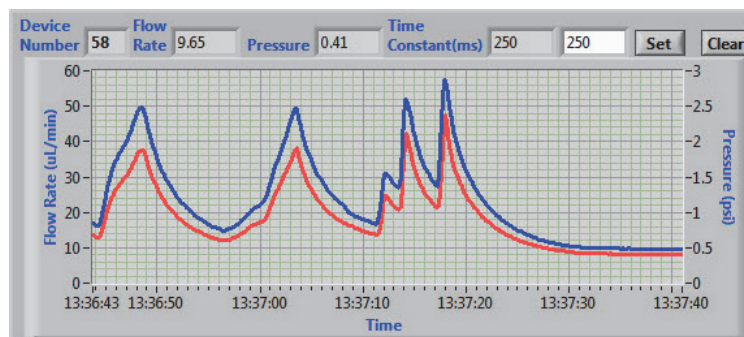
- 0.34 Bar / 5 psi
- 1 Bar / 15 psi
- 2 Bar / 30 psi



DuoMeter configured with two pressure sensors and one flow sensor.

DuoMeter Advantages

- In-line, real-time pressure measurement
- In-line, real-time flow rate measurement
- Fully adjustable data smoothing / filtering feature
- Compatible with a wide range of tubing sizes ranging from 360 micron capillary to 1/8-inch
- Meter comes with water calibration and ability to calibrate for other liquid types
- Control via stand-alone, PC software, or LabVIEW VI
- Optional RS-232 module



Screen capture of PC software logging pressure (red) and flow rate (blue).

The DUOMeter

Integrated Components

- Pressure sensor
- Flow rate sensor
- Data smoothing / filtering
- Display screen and control buttons
- On-board microprocessor
- Optional ability to re-calibrate

Data Logging

- Links to data logging PC Software or LabVIEW VI via USB cable
- Both pressure and flow rate are logged
- Ability to select data logging rate
- Optional RS-232



- DuoMeter configured with one pressure sensor and one flow sensor.

Configurations

Channel Number / Type

- 1 Pressure + 1 Flow Channel
- 2 Pressure + 1 Flow Channel
- Other configurations available upon request

Pressure Model

- 0.34 Bar / 5 psi
- 1 Bar / 15 psi
- 2 Bar / 30 psi

Flow Model

- Nano ±70 to ±7000 nL/min
- Micro ± 1 to ±80 µL/min
- Milli ±30 to ±1000 µL/min
- Milli+5 ±0.2 to ±5.0 mL/min

Flow Specifications¹

Flow Model	Nano	Micro	Milli	Milli+5
Flow Rate Range	0 to ±7000 nL/min	0 to ±80 µL/min	0 to ±1000 µL/min	0 to ±5.0 mL/min
Standard Calibrated Flow Rate Range	±70 to ±7000 nL/min	±1 to ±80 µL/min	±30 to ±1000 µL/min	±0.2 to ±5.0 mL/min
Accuracy Below Full Scale (% full scale)	0.3%	0.15%	0.2%	0.2%
Repeatability below full scale (% full scale)	0.05%	0.01%	0.02%	0.02%
Flow Detection Response Time	40 msec			
Flow Rate Stability	Down to 0.1% CV*			
Operating Temperature	10 to 50°C			
Fluid Connector Type	6-40 taper		UNF ¼-28 Flat Bottom	
Flow Sensor Materials	Quartz Glass, PEEK™, Teflon®, Tefzel®		Borosilicate Glass, PEEK™, Teflon®, Tefzel®	
Flow Sensor Inner Diameter	150 µm	430 µm	1.0 mm	1.8 mm
Flow Sensor Internal Volume	1.5 µL	5.1 µL	< 30 µL	< 90 µL

*Relative to fluid type, tubing and system set-up.

Pressure Specifications¹

Pressure Model	Low	Medium	High
Pressure Range (Bar)	0 to 0.34 Bar	0 to 1 Bar	0 to 2 Bar
Pressure Range (psi)	0 to 5 psi	0 to 15 psi	0 to 30 psi

¹Specifications subject to change



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