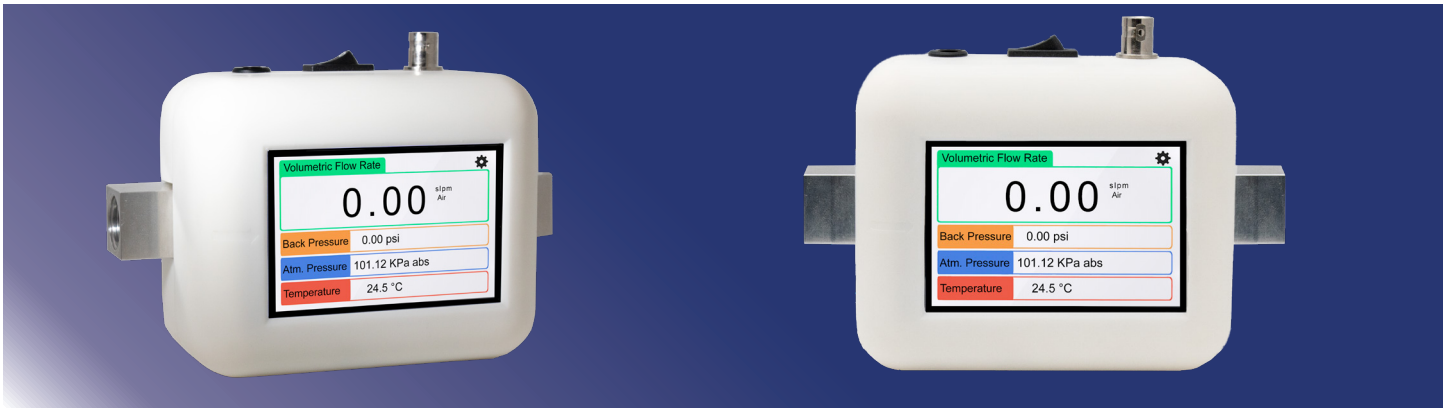
Air & Oxygen Mass Flow Meter



The Digital Mass Flow Meter accurately measures and displays mass flow rate, volumetric flow rate, gas temperature, atmospheric pressure and gas pressure, for both Air and Oxygen.

Unlike most flowmeters, the Digital Mass Flow Meter has a touch screen interface, offering immediate customization in seconds. This customization includes selecting the preferred units for each specification, including many standard units typical to scientific and engineering applications. For using a mixture of Air and Oxygen, the percentage of oxygen is adjustable.Unlike most flowmeters, the Digital Mass Flow Meter can automatically adjust for typical errors in flow calculation due to back pressures of up to 100 psig. The unit also has an optional output of 0-5 volts as a measure of flow rate, with an adjustable sample rate based on user preference, for use with an oscilloscope or volt meter.

Product Features

- Measures and Displays Mass and Volumetric Flow Rates, Gas Temperature, Atmospheric Pressure and Gas Pressure
- Touch screen interface for immediate customization, no separate device needed
- Volumetric flow automatically adjusted based on current gas density and elevation
- Optional analog output of 0-5 volts for Flow Rate
- Selectable units of Messure for both flow rate and pressure

Dynamic Flow Measurement

The Digital Mass Flow Meter uses four sensors to accurately measure flow specifications. Three sensors are in direct contact with the flow path: an anemometer for mass flow, a thermistor for gas temperature and a gauge pressure transducer for gas pressure. The fourth sensor, an absolute pressure transducer, is contained within the unit and away from the flow path for atmospheric pressure.

Using the readings from all four sensors, the mass flow is calculated using the current environmental and application conditions. This mass flow is than converted to volumetric flow based on the current density of the environment and back pressure in the system.

Specifications

Gas Calibration	
Media	Air and Oxygen
Flow Performance	
Range	0 to 300 SLPM of Air
Accuracy	2% of reading or 0.05 SLPM, whichever is greater, at 70 °F and 14.7 psia
Response Time	50 milliseconds
Temperature Measurement	
Range	0 to 50 °C (0 to 122 °F)
Accuracy	±1 °C (±1.8 °F) at flows >1 SLPM
Atmospheric Pressure Measurement	
Range	15 to 115 kPa (2.17 to 16.68 psia)
Accuracy	± 2% Full Scale
Maximum Allowable Pressure	400 kPa (58.0 psia)
Back Pressure measurement	
Range	0 to 100 psig (0 to 1034 kPa)
Accuracy	± 3% Full Scale
Maximum Allowable Pressure	200 psig
Inlet / Outlet Ports	
Port Size	3/8" Female NPT (Standard), 1/4" Female NPT, Male 22 MM Tapered,
	Female 22 MM Tapered, Male 22 MM Straight
Power Requirement	
Voltage	120 VAC via wall adapter, converted to 5 vdc at 500 mA
Temperature Limits	
Operating	0 to 50 °C (0 to 122 °F)
Storage	-20 to 60 °C (-4 to 140 °F)
Touch Screen	
Interface	3.5" TFT LCD Resistive, Backlit, 320 x 480 pixel
Analog Output	
Details	0 to 5 volts DC, 16 bit resolution

Dimensions