

PRODUCT

INFORMATION

Model 3063 Mass Flowmeter

Model 3063 measures flow rate, flow volume, gas temperature, and absolute pressure. That's *four* measurements, all from the same compact instrument! This flowmeter offers outstanding performance for aerosol-instrument test applications. Its high accuracy and low pressure drop are key characteristics required for aerosol experiments. Unlike flowmeters with accuracy specifications that are a percentage of full scale, our Model 3063 offers 2-percent accuracy over virtually the entire flow range. Therefore, it can do the work of two or three pressure-based flowmeters.

FEATURES

The Model 3063 Mass Flowmeter is a compact, full-featured instrument that:

- Measures mass flow rate (up to 200 standard liters per minute), as well as volume, gas temperature, and absolute pressure
- Specifies accuracy as a percentage of reading rather than a percentage of full scale
- Assures accuracy due to its 4-millisecond response rate
- Minimizes flow circuit back-pressure and its impact on the system under test due to a low pressure drop
- Displays flow, temperature, and pressure in real time
- Provides analog output of flow rate
- Allows transfer of temperature, volume, pressure, and standard or volumetric flow rate via its RS-232 port



A precise thermal mass flowmeter that provides four measurements!

- Includes a computer connection for data logging, data display, and operational control
- Includes an in-line filter to protect flow sensor and help maintain calibration

APPLICATIONS

Typical applications for the Model 3063 include:

- Experimental flow monitoring
- Instrument development, prototyping, quality assurance, and production testing
- Industrial hygiene and cardiorespiratory research

OPERATION

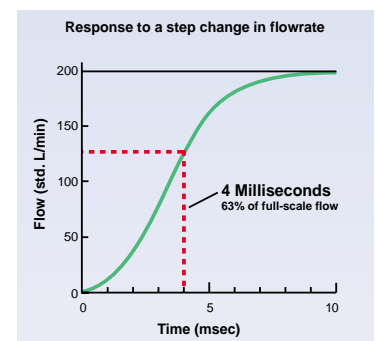
The Model 3063 incorporates two sensors, both of which are exposed to the flow stream. A platinum film sensor measures sample flow rate, and a thermistor measures gas temperature.

The instrument heats the flow sensor and maintains it at a constant temperature.

As the gas passes the flow sensor, the flow convects heat from the sensor in relation to the mass flow rate.

Temperature and pressure data allow calculation of volumetric flow rate.

Fast Response Time



SPECIFICATIONS

For the most current information available on this instrument, go to www.tsi.com and select "Particle Instruments."

Flow measurement

Range: 0 to 200 std. L/min (0 to 7.06 cfm) in air

Accuracy:* 2% of reading or 0.05 std. L/min (0.0018 cfm), whichever is greater, at 21.1 °C (70 °F) and 101.3 kPa (14.7 psi)

Response: See graph on front page

Temperature measurement

Range: 0 to 50 °C (0 to 122 °F)

Accuracy:* ±1 °C (±1.8 °F) at flows >1 std. L/min (>0.035 cfm)

Response: Less than 75 msec to 63% of final value for 20 °C (68 °F) step-change at full flow

Static pressure measurement

Range: 50 to 199 kPa (7.2 to 28.9 psi) absolute

Accuracy:* ±1 kPa (±0.1 psi)

Response: Less than 4 msec to 63% of final value for 30 kPa (4.4 psi) step-change

Overpressure: 620 kPa (89.9 psi)

Volume measurement

Range: 0.01 to 99.9 L (0.00035 to 3.53 ft³)

Accuracy:* 2% of reading at flows >2.5 L/min (>0.088 cfm)

Gas calibration: Air

Inlet/outlet: 13-mm (0.5-in.) tube, O.D.

DC power required: 7.5 VDC, ±1.5 V at 300 mA maximum

Temperature

Operating: 0 to 50 °C (0 to 122 °F)

Storage: -20 to 60 °C (-4 to 140 °F)

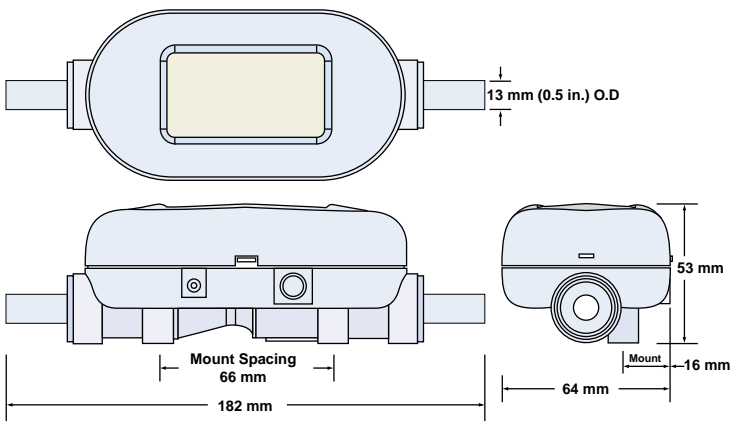
Computer interface: RS-232; 38,400/8/N/1

Analog output: 0 to 10 VDC (flow signal only), 13-bit resolution

Flow-body material: Polycarbonate

Dimensions: See schematic diagram below

Weight: 180 g (0.4 lb)



TO ORDER

Specify
3063

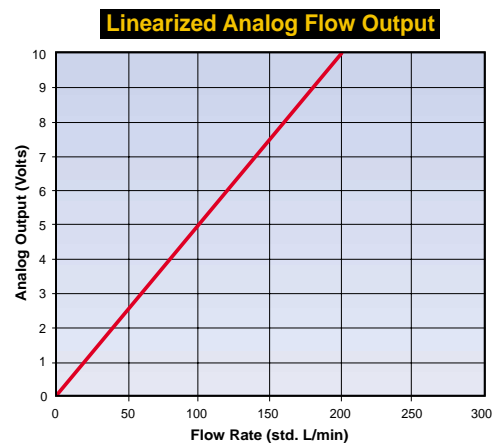
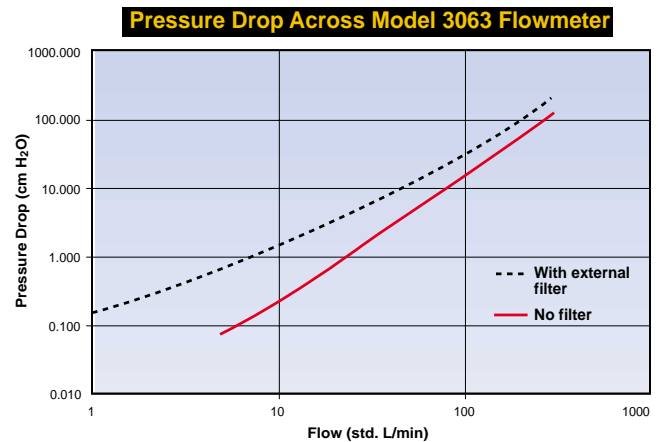
Description

Mass Flowmeter with filter, power supply, computer cable, analog cable, carrying case, operator's manual, RS-232 serial-command-set manual, certificate of calibration traceable to NIST standards, and diskette containing LabVIEW® software drivers



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*Add uncertainty of 0.075% of reading for every 1 °C above or below 21.1 °C. Add uncertainty of 0.015% per 1 kPa for pressures above 101.3 kPa or 0.022% per 1 kPa for pressures below 101.3 kPa. Accuracy stated using dry gas (<10% R.H.).



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