

# 7000 Series Mass Flowmeters

Accurate and reliable are characteristics of our 7000 Series

The **Air Leak Testing** family of flowmeters will measure gaseous mass flow rates from 2 cc/minute to 50 cubic feet/minute. They consist of two components – a flow transducer and a signal conditioner/display unit. The two components may be separated by up to 100 feet and still maintain stated specifications.

### Fast Response Time

The standard flowmeter has a response time of 60 milliseconds. Other models are available with response times as low as 10 milliseconds. Response time is for one time constant as measured in air, which is defined as the time required to reach 63.2% of a step change in flow. Approximately five time constants are required for stabilization.

### Features:

- Low Flow Rates
- Fast Response Time, from 10ms
- Repeatable to within 0.1%
- Low Pressure Drop
- Mounts in any Position
- Used for Air, most gasses and some liquids

[www.vicleakdetection.com](http://www.vicleakdetection.com)



7000 Series Mass Flowmeters

### FULL SCALE MODEL RANGE

7100	10 SCCM	7502	5 SLPM
7250	25 SCCM	7103	10 SLPM
7500	50 SCCM	7503	50 SLPM
7101	100 SCCM	7104	100 SLPM
7201	200 SCCM	703F	3 SCFM
7301	300 SCCM	705F	5 SCFM
7501	500 SCCM	710F	10 SCFM
7102	1000 SCCM	715F	15 SCFM

Special ranges are available upon request

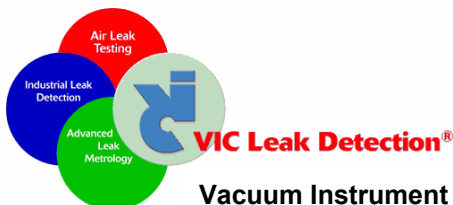
SCCM – Standard cubic centimeters per minute

SLPM – Standard liters per minute

SCFM – Standard cubic feet per minute

Standard conditions are 70°F and 29.92 inches of mercury

\*We also manufacture leak detection systems for measuring low leak rates and flow test systems for hole gaging and restriction testing.



**Vacuum Instrument Corporation – Air Leak Testing Division**

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# 7000 SERIES MASS FLOWMETERS

## Outputs

The standard flowmeter is configured with a 0 to 5 VDC analog output that is proportional to the flow rate. 0 – 10 VDC and 4 – 20 mA outputs are also available. Flowmeters with the digital meter option can be scaled in flow or other desired units. In addition to analog output, an RS232C communications port is available as an option.

## Choice of Flow Rates

Models are available for measurement of flow as low as 2 cc/minute (0.2 cc/min in some cases)\* with full scale flow ranges from 10 cc/minute to 50 cubic feet/minute. Any full scale flow value can be supplied within this range. Accurate and repeatable flow measurements can be made over a wide range while maintaining a typical pressure drop of one (1) inch of water column at the full scale flow rate.

## Accuracy and Repeatability

The flowmeters are aged and temperature compensated to provide repeatability to within +/- 0.1% with an accuracy of +/- 1% over a temperature span of 50 to 110°F.

## OPTIONS

### Digital Meter

3½ Digit LED Display (4½ Digit available) Meter reads output voltage or directly in flow units.

### Analog Meter

Reads 0 – 5 VDC. Meter reading is related to the flow rate using a calibration chart that is supplied with each unit.

### Analog Output

0 – 5 VDC is standard. 0 – 10 VDC or 4 – 20 mA outputs are available as options.

### Special Gases

Flowmeters are normally calibrated for air, but can be calibrated for most inert gases.

## AVAILABLE TRANSDUCERS

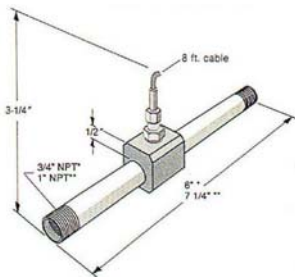
The size and type of the transducers depend on the specific application. The transducers shown below are only typical of our standard models.

### \*3/4" NPT Version

Typically used for flow rates from 2 CFM to 5 CFM  
Weight: 11 ounces

### \*\*1" NPT Version

Typically used for flow rates from 5 CFM to 50 CFM  
Weight: 16 ounces



## Limit or Alarm Detection

Up to two points, located anywhere from zero to full scale, can be used to indicate a limit or an alarm. Limit status is indicated by front panel lamps and by a relay contact closure located on the rear panel. Contact is Form "C" rated for 10 VA.

## Single Set Point

Indicators illuminate when the flow rate is above and below a previously adjusted limit.

## Window Detection

Indicators illuminate when the flow rate is within an "acceptable tolerance window" or if the flow rate is below or above this previously adjusted window.

## Dual Set Points

Two separately adjustable limit points allow independent selection and alarm status to two different flow rates.

## 1/8" NPT Version

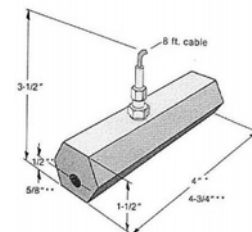
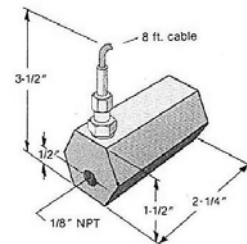
Typically used for flow rates from 10 CCM to 2500 CCM  
Weight: 10 ounces

## \*1/4" NPT Version

Typically used for flow rates from 2500 CCM to 20 LPM  
Weight: 17 ounces

## \*\*1/2" NPT Version

Typically used for flow rates from 20 LPM to 2 CFM  
Weight: 20 ounces



## SPECIFICATIONS

**Ranges:** 10 CCM to 50 CFM full scale.

**Output Voltage:** 0 – 5VDC @ 5mA max.  
0 – 10VDC or 4 – 20mA available on request.

**Output Impedance:** Less than 1 Ohm.

**Accuracy:** +/- 0.1% FS or +/- 0.5 SCCM, whichever is greater.

**Repeatability:** +/- 0.1% FS or +/- 0.1 SCCM, whichever is greater.

**Temperature Range** for stated accuracy: 50°F – 110°F (10°C – 43°C).

**Power Required:** 105 – 125VAC, 25VA, 50/60Hz  
210 – 240VAC available.

**Weight:** Signal Conditioner w/o meter 3lbs.; w/meter 6lbs.

**Dimensions, Case:** 8-5/8" (219mm) W x 4-5/8" (117mm) H x 7" (178mm) D.

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\* Specifications subject to change without notice.

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