

HIGH ACCURACY MASS FLOW CONTROLLERS

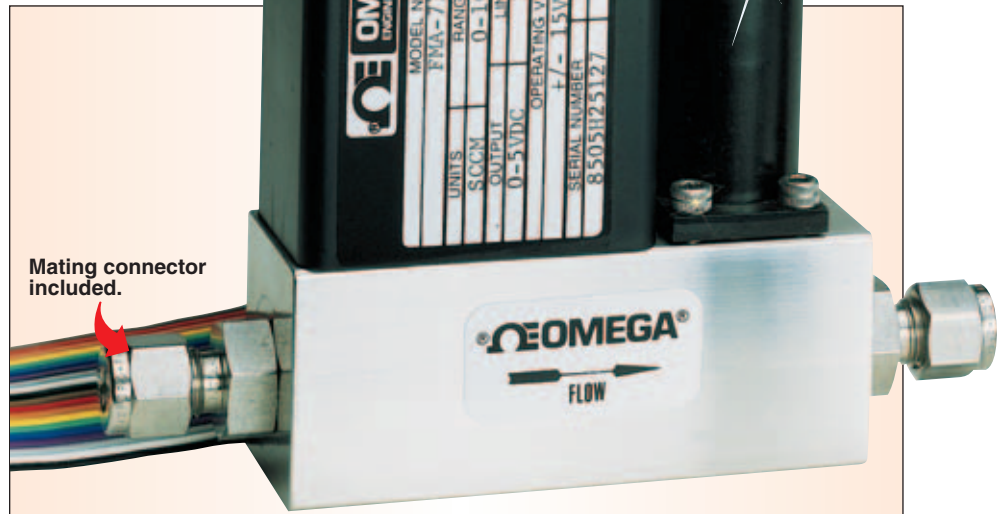
For Clean, Non-Coating Gases

FMA-7000E Series
Starts at

\$1831



- ✓ ±1% Full Scale Accuracy
- ✓ ±0.25% of Rate Repeatability
- ✓ Broad Range in a Single Unit to Fit Most Applications
- ✓ Field Selectable Soft Start Eliminates Spoiled Batches
- ✓ Normally Closed Valve
- ✓ Low Pressure Drop
- ✓ Compact Design
- ✓ For Clean, Non-Coating Gases



OMEGA® FMA-7000E Mass Flow Controllers accurately measure gases on the basis of mass flow. The flow sensor produces an electrical output signal linear with the flow rate used for indicating, recording, and/or control purposes. It eliminates the need for continuous monitoring and readjustment of gas pressures to provide a stable gas flow. This is accomplished automatically

by an electromagnetically actuated flow rate control valve.

OPERATING PRINCIPLE

The operating principle of the controller is thermodynamic. A precision power supply directs heat to the midpoint of the sensor tube carrying the flow. On the same tube, equidistant upstream and downstream

of the heat input, are resistance temperature measuring elements.

With no flow, the heat reaching each temperature element is equal. With increasing flow, the flow stream carries heat away from the upstream element, and carries it towards the downstream element. An increasing temperature difference develops between the two elements and this difference is proportional to the mass flow rate of the gas. A bridge circuit interprets the temperature difference and an amplifier provides the output to the control circuitry as well as a 0 to 5 Vdc output signal.

CUSTOM BUILT TO ORDER!

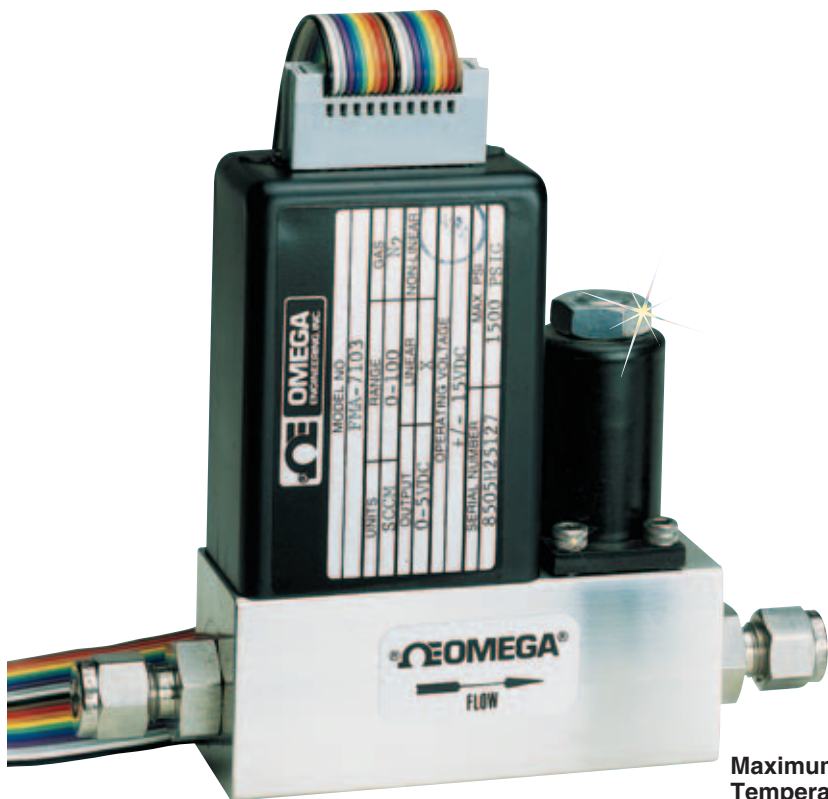
To Order (Specify Model Number)						
Model No. ¼" Compression Fitting	Price	Model No. ¼" VCO	Price	Model No. ¼" VCR	Price	Max Range
FMA-7100E-(*)	\$2228	FMA-7200E-(*)	\$2305	FMA-7300E-(*)	\$2305	to 10 SCCM
FMA-7101E-(*)	1831	FMA-7201E-(*)	1908	FMA-7301E-(*)	1874	to 20 SCCM
FMA-7102E-(*)	1831	FMA-7202E-(*)	1908	FMA-7302E-(*)	1874	to 50 SCCM
FMA-7103E-(*)	1831	FMA-7203E-(*)	1908	FMA-7303E-(*)	1874	to 100 SCCM
FMA-7104E-(*)	1831	FMA-7204E-(*)	1908	FMA-7304E-(*)	1874	to 200 SCCM
FMA-7105E-(*)	1831	FMA-7205E-(*)	1908	FMA-7305E-(*)	1874	to 500 SCCM
FMA-7106E-(*)	1831	FMA-7206E-(*)	1908	FMA-7306E-(*)	1874	to 1 SLM
FMA-7107E-(*)	1831	FMA-7207E-(*)	1908	FMA-7307E-(*)	1874	to 2 SLM
FMA-7108E-(*)	1831	FMA-7208E-(*)	1908	FMA-7308E-(*)	1874	to 5 SLM
FMA-7109E-(*)	1831	FMA-7209E-(*)	1908	FMA-7309E-(*)	1874	to 10 SLM
FMA-7110E-(*)	1831	FMA-7210E-(*)	1908	FMA-7310E-(*)	1874	to 20 SLM

Comes complete with operator's manual.

* Please specify gas, temperature, and inlet and outlet pressure when ordering.

Ordering Examples: FMA-7100E-(Argon, 70°F, 150/100 psig), \$2228.

FMA-7102E-02, 70°C, 20/0psig, oxygen mass flow meter, \$1831.



After Choosing Your Flowmeter, Complete the System to Meet Your Requirements

- Display and Alarm DPF64, \$289.
- Setpoint Potentiometer (1000Ω)
- Computer Interface
FC-21 \$764, Basic Unit
FC-22 \$1076, Basic Unit
- Power Supply FPW-15, \$75.

In addition to your mass flowmeter, select a complete flow measurement system to meet your requirements.

Maximum Pressure: 1500 psig, pressure drop 5 to 50 psid
Temperature Range: 4 to 66°C (40 to 150°F) ambient and gas
Temp. Sensitivity:

Zero: < ±0.075% FS per °C

Span: < ±1.0% FS shift over 10 to 50°C (50 to 122°F) range

Power Supply Sensitivity: ±0.09% FS per % power supply voltage variation

Mounting Attitude Sensitivity: ±0.5% maximum FS deviation after zeroing

Leak Integrity: 1 x 10⁻⁹ Atm. scc/sec helium

Control Range: 50 to 1

Pressure Sensitivity: ±0.03% per psi up to 200 psig (N₂)

Power: +15 Vdc at 35 mA DC, -15 Vdc at 180 mA dc, 3.5 watts power consumption

Wetted Parts: 316 and 430SS, FKM

Connections: ¼" stainless steel compression fittings

Electrical Connections: Card edge, 20 terminals, gold over low stressnickel-plated copper

Accessories Included: Mating connector with 1.5 m (5') ribbon cable model. Easy connector/cable assemblies available

Model FMA-7EC-(*):

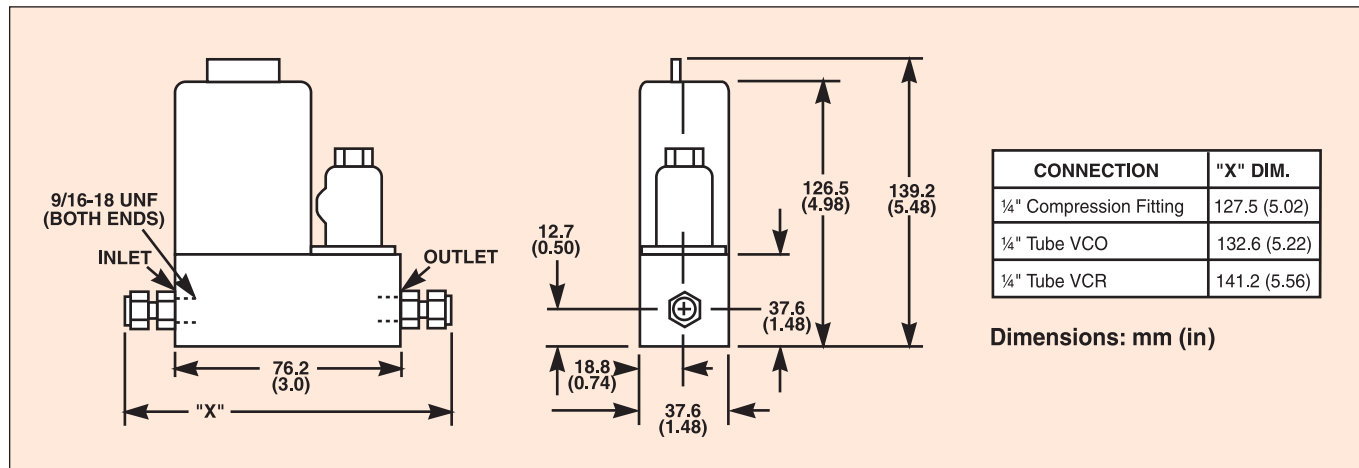
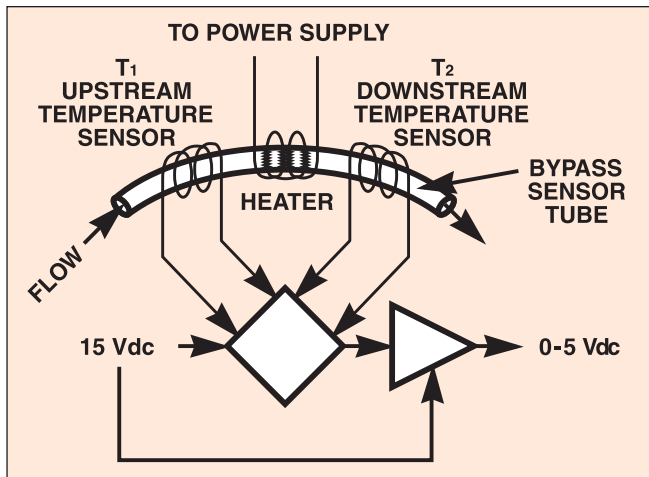
1.5 m (5') = \$109

3.0 m (10') = \$120

7.6 m (25') = \$131

15.2 m (50') = \$152

* Specify length: 5, 10, 25 or 50' sections





UNITED STATES

www.omega.com
1-800-TC-OMEGA
Stamford, CT.

CANADA

www.omega.ca
Laval(Quebec)
1-800-TC-OMEGA

GERMANY

www.omega.de
Deckenpfronn, Germany
0800-8266342

UNITED KINGDOM

www.omega.co.uk
Manchester, England
0800-488-488

FRANCE

www.omega.fr
Guyancourt, France
088-466-342

CZECH REPUBLIC

www.omegaeng.cz
Karviná, Czech Republic
596-311-899

BENELUX

www.omega.nl
Amstelveen, NL
0800-099-33-44



More than 100,000 Products Available!

• Temperature

Calibrators, Connectors, General Test and Measurement Instruments, Glass Bulb Thermometers, Handheld Instruments for Temperature Measurement, Ice Point References, Indicating Labels, Crayons, Cements and Lacquers, Infrared Temperature Measurement Instruments, Recorders Relative Humidity Measurement Instruments, RTD Probes, Elements and Assemblies, Temperature & Process Meters, Timers and Counters, Temperature and Process Controllers and Power Switching Devices, Thermistor Elements, Probes and Assemblies, Thermocouples Thermowells and Head and Well Assemblies, Transmitters, Wire

• Flow and Level

Air Velocity Indicators, Doppler Flowmeters, Level Measurement, Magnetic Flowmeters, Mass Flowmeters, Pitot Tubes, Pumps, Rotameters, Turbine and Paddle Wheel Flowmeters, Ultrasonic Flowmeters, Valves, Variable Area Flowmeters, Vortex Shedding Flowmeters

• pH and Conductivity

Conductivity Instrumentation, Dissolved Oxygen Instrumentation, Environmental Instrumentation, pH Electrodes and Instruments, Water and Soil Analysis Instrumentation

• Data Acquisition

Auto-Dialers and Alarm Monitoring Systems, Communication Products and Converters, Data Acquisition and Analysis Software, Data Loggers Plug-in Cards, Signal Conditioners, USB, RS232, RS485 and Parallel Port Data Acquisition Systems, Wireless Transmitters and Receivers

• Pressure, Strain and Force

Displacement Transducers, Dynamic Measurement Force Sensors, Instrumentation for Pressure and Strain Measurements, Load Cells, Pressure Gauges, Pressure Reference Section, Pressure Switches, Pressure Transducers, Proximity Transducers, Regulators, Strain Gages, Torque Transducers, Valves

• Heaters

Band Heaters, Cartridge Heaters, Circulation Heaters, Comfort Heaters, Controllers, Meters and Switching Devices, Flexible Heaters, General Test and Measurement Instruments, Heater Hook-up Wire, Heating Cable Systems, Immersion Heaters, Process Air and Duct, Heaters, Radiant Heaters, Strip Heaters, Tubular Heaters