

Instrumentation - Mass Flow Controllers

Specification	Mass Flow Meter & Controller HFM 200 HFC 202	Mass Flow Meter & Controller HFM 201 HFC 203	Mass Flow Meter & Controller HFM 200 with LFE
Full Scale Flow Range	0-10 sccm to 0-25,000 sccm	0-25 slm to 0-500 slm	0-25 slm to 0-15,000 slm
Accuracy	+/-1% of Full Scale Improvement with optional Polynomial fit	+/-1% of Full Scale Improvement with optional Polynomial fit	+/-1% of Full Scale Improvement with optional Polynomial fit
Repeatability	+/-0.05% of Full Scale	+/-0.05% of Full Scale	+/-0.05% of Full Scale
Standard Pressure Rating	500 psig	500 psig	500 psig 150 psig - flanged
Pressure Coefficient	-0.0067%/psi(0-1000 psig N ₂) typical	-0.0067%/psi(0-1000 psig N ₂) typical	-0.0067%/psi(0-1000 psig N ₂) typical
High-Pressure Option	1000 psig (proof tested to 1500 psig)	1000 psig (proof tested to 1500 psig)	Dependent on fitting type
Temperature Coefficient (0-60° C)	Zero +/-0.035% FS/° C Span +/-0.05% Rdg/° C	Zero +/-0.035% FS/° C Span +/-0.05% Rdg/° C	Zero +/-0.035% FS/° C Span +/-0.05% Rdg/° C
O-Ring Seals	Viton® (Std) Kalrez® Neoprene Buna-N	Viton® (Std) Kalrez® Neoprene Buna-N	Viton® (Std) Kalrez® Neoprene Buna-N
Leak Integrity	< 1 x 10 ⁻⁹ sccs He	1 x 10 ⁻⁹ sccs He	1 x 10 ⁻⁹ sccs He
Power - Meter	+/-15VDC at +/-25 mA	+/-15VDC at +/-25 mA	+/-15VDC at +/-25 mA
Power - Controller	+/-15 VDC at +60 mA/ - 185 mA	+/-15 VDC at +60 mA/ - 185 mA	N/A
Flow Signal	0-5.00 VDC (4-20 mA option) inherently linear	0-5.00 VDC (4-20 mA option) inherently linear	0-5.00 VDC (4-20 mA option) inherently linear
Wetted Material - Meter	316 SS, Viton® , 82/18 Au/Ni braze, trace silver solder	316 SS, Viton® , 82/18 Au/Ni braze, trace silver solder	316 SS, Viton® , 82/18 Au/Ni braze, trace silver solder
Wetted Material - Controller	316 SS, Viton® , 82/18 Au/Ni braze, trace silver solder Kalrez® Ni	316 SS, Viton® , 82/18 Au/Ni braze, trace silver solder, Kalrez® Ni	N/A
Connector	15-pin subminiature D	15-pin subminiature D	15-pin subminiature D
Pin out diagrams	H - Pin out	H - Pin out	H - Pin out
Fittings	1/4" Swagelok® (STD) Options 1/8" Swagelok® 1/4" VCR® pair 1/4" VCO® pair 6mm Swagelok® pair No Fittings	1/2" Swagelok® (STD) Options 1/2" VCR® pair 1/2" VCO® pair 12mm Swagelok® pair No Fittings	Various diameters of NPT Flanged Smooth tube

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Mass flow techniques provide more reliable, repeatable and accurate gas flow rate measurements compared to volumetric methods such as rotometers and turbine meters. Mass flow measurements use the density of the gas to translate mass flow units (kg or lbs) to units of familiar volumetric terms liter/min (SLM) and they do not change with temperature and pressure changes. We do this by referencing just one, specific temperature and one specific pressure (STP).

Series 200 Mass Flow Controllers have flow ranges from 0-10 sccm to 0-500 SLM (large flows to 15,000 SLM with a laminar flow element). They use elastomer seals, provide analog outputs, and are constructed of stainless steel. The controllers have normally closed valves. Corrosive gases, with the exception of the halogens, pressures up to 1,000 psig (optional) are easily measured.

Features

- +/-1% of Full-Scale Accuracy
- Proven Reliability
- Range - 10 to 25,000 sccm (N₂ Equivalent)
- NIST Traceable Calibration

Applications

- **Air Monitoring**
- **Air Sampling**
- **Pollution Monitoring**
- RD Process Flows
- Industrial Furnaces
- Gas Blending

Accessories For Meters And Controllers

Power^{Pod} Models **40**, **100**, & **400**

Cables

Flow Service Plan

Oxygen Cleaning

Part Number	Description	Price
HFM-200	Flow Meter (must have customer inputs)	Call Us
HFC-202	Flow Controller (must have customer inputs)	Call Us
THPS400PS	4-Channel Display, Power Supply	Call Us
THPS100PS	Single Channel Display Power Supply	Call Us

Please contact Vortex Vacuum with the following information to assure the correct component is quoted and purchased:

- Input / Output
- Fitting Size
- O-Ring Material
- Working Pressure
- NIST Calibration Type

Range Information

Range _____

Flow Units _____

Gas _____

Standard Conditions* _____

*Referenced (0°C and 760 Torr, respectively)