



TELEDYNE HASTINGS INSTRUMENTS

MODELS

*Model HFM-200 with LFE
(Laminar Flow Element)*

FEATURES

- Range — 25 to 15,000 slm (N₂ Equivalent)
- Accuracy in Nitrogen $\pm 1\%$ of Full scale
- Modular Construction
- NIST Traceable Calibration

APPLICATIONS

- Bulk Gas Handling
- Furnace Fuel Measurement
- R&D and Process Flows
- Leak Testing

BENEFITS

- High Capacity
- Low Pressure Drop
- Linear Response



HFM-200 with Laminar



DESCRIPTION

The Teledyne Hastings Instruments (THI) Model HFM Mass Flowmeter represents a culmination of years of experience in designing and manufacturing reliable, high quality mass flow instruments.

The HFM Series of flow instruments is based on a modular design. At the heart of each instrument is an insulated thermal transfer sensor which provides enhanced zero stability. This sensor is designed to be removable/replaceable in the field to virtually eliminate long down time due to clogging. Additionally, the HFM design features an integral filter and an easily replaceable closed loop electronics card.*

All of these standard features, when coupled with the instrument's inherent linear response to flow changes and THIs' long-proven reputation for quality, result in the finest flow meters and flow controllers available today.

Design Features (cont)

Model HFM-200 with LFE
THI Model HFM-200 Flow meters with an LFE offer the user fast, accurate measurement of high-capacity gas flows, in ranges from 25 slm up to 15,000 slm. Our laminar flow elements (smoothed, flanged, or threaded) are available in various sizes from 3/8" up to 8". Used in conjunction with the standard HFM Flowmeter, these units can be combined to measure full-scale flows up to 15,000 slm and feature a typical pressure drop of 4.5" of water at full-scale flow.

Optional Features

Fittings – Flanges,
Smooth Pipe,
Pipe Thread
Oxygen Cleaning

Accessories

Power Supplies/Readouts
Available with
Totalizer
Alarms
Cables: 8', 25', 50', & 100'

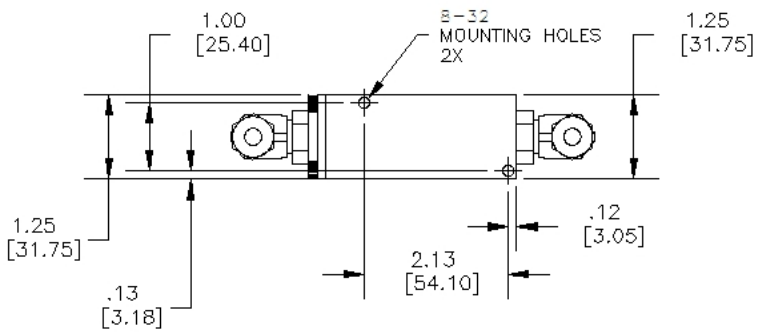
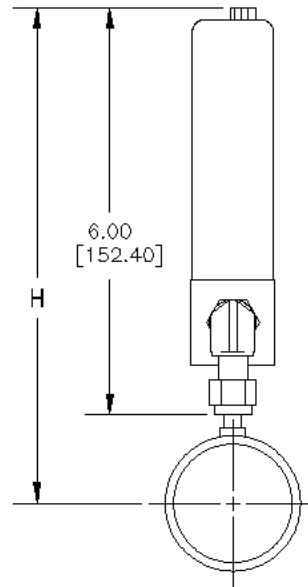
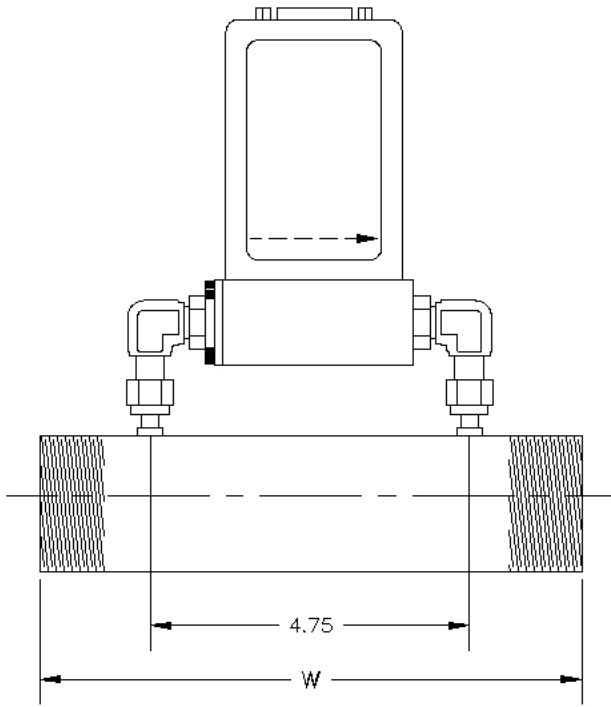
<i>HFM-200 with LFE</i>	
Accuracy ¹	± 1% of Full Scale
Repeatability	± 0.05% of Full Scale
Pressure Coefficient	(Span) 0.0067%/psi (N ₂)
Leak Integrity	< 1x10 ⁻⁷ sccs He
Operating Temperature	0 - 60°C
Temperature Coefficient	Zero ± 0.035%C of F.S. (0-60°C) Span ± 0.05%C of Rdg (0-60°C)
FS Flow Ranges	Flows from 0-25 slm up to 0-15,000 slm (N ₂ Equiv.) ²
Power Requirements (± 15 V)	± (14-16) VDC @ ±30mA (< 1 Watt)
Power Requirements (+24V)	(14-32) VDC (< 1.9 Watt)
Available Outputs	0 - 5 VDC, 4 - 20 mA; 0-20 mA
Connector (+/- 15 VDC)	15-pin subminiature D
Connector (+24 VDC)	9-pin subminiature D
*Attitude Sensitivity	Zero < 0.25% of FS
Wetted Materials	316SS, Viton®, 87/13 Au/Ni Braze
Fittings	See Selection Chart
Standard Working Pressure	150 psig for flanged LFEs 500 psig for threaded or smooth LFEs
Working Pressure (transducer)	500 psig
*N₂ @ 44.7 psia	

Hastings Instruments reserves the right to change or modify the design of its equipment without any obligation to provide notification of change or intent to change.

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- 1 See Product Manual for critical information on instrument accuracy and the use of GCFs (gas conversion factors). Stated accuracy is for nitrogen or other gas specific calibration and use with this gas only.
- 2 Reduced accuracy above 12,000 slm (N₂ equivalent)

Outline Drawing



MODEL #	HEIGHT	WIDTH
LS-D37	6.71 [170.43]	8.00 [203.20]
LS-D5	6.80 [172.72]	8.00 [203.20]
LS-D75	6.90 [175.26]	8.00 [203.20]
LS-1	7.03 [178.56]	8.00 [203.20]
LS-1D5	7.33 [186.18]	8.00 [203.20]
LS-2	7.56 [192.02]	8.00 [203.20]
LS-3	8.13 [206.50]	10.00 [254.00]
LS-4F	8.63 [219.20]	10.00 [254.00]
LS-6F	9.69 [246.13]	10.00 [254.00]
LS-8F	10.54 [267.72]	10.00 [254.00]

HFM-200 Selection Chart

Model No.	C. Board	Output	Fittings	O'Rings	Working Pressure	Cal Type
HFM-200			05		01	

Order No.	Options
C. Board	
01	Standard
02	24 VDC **

Output - 0-20 Ma	
01	0-5 Volts (Std)
02	4-20 mA ***

Fittings	
05	1/4" Elbow

O'Rings	
01	Viton (std)
02	Kalrez
03	Neoprene
04	Buna-N

Working Pressure	
01	500 psig (Std)

Calibration Type	
01	NIST 5 point (Std)
02	NIST 10 Point
03	NIST 20 Point
04	Curve Fit

** No RF Rejection - 0 -5 volts only

*** Not available with fast response

Laminar-Selection Chart

Model No.	Type/ Series	Range	Fittings
LS Series	01		

Order No.	Options
	Pinout
01	LS Series

Range	
01	10-25 SLM 3/8" Dia
02	30-50 SLM 1/2" Dia
03	60-100 SLM 3/4" Dia
04	125-200 SLM 1.0" Dia
05	225-400 SLM 1.5" Dia
06	450-750 SLM 2.0" Dia
07	850-1500 SLM 3.0" Dia
08	2500 SLM 4.0" Dia *
09	6000 SLM 6.0" Dia *
10	10000 SLM 8.0" Dia *

Fittings	
01	NPT Male
02	Smooth
03	Flanges

* Must be flange version

Range Information

Each calibration will require the following information:

Range: _____

Flow Units: _____

Gas: _____

*Std Conditions: _____

* For volumetric units the standard temperature and pressure of the unit is also required 0°C & 760 Torr will be used when other values are not specified.

** No RF Rejection - 0-5 volts only

*** Not available with fast response



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