



# TELEDYNE HASTINGS INSTRUMENTS

Everywhere you look™

## HFM-200 with LFE (Laminar Flow Element)

### FEATURES

- Available Flow Ranges — 0-25 SLM up to 0-15,000 slm (N<sub>2</sub> Equivalent)
- Accuracy in Nitrogen ±1% of Full scale
- Modular Construction
- Input Power +/- 15 VDC or +24 VDC (specify when ordering)
- 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 available with:  
 Integral Flow Totalizer  
 Alarm Set Points  
 Interconnecting cables



THCD-100 Power Supply & Display

Cables: 8', 25', 50', & 100'

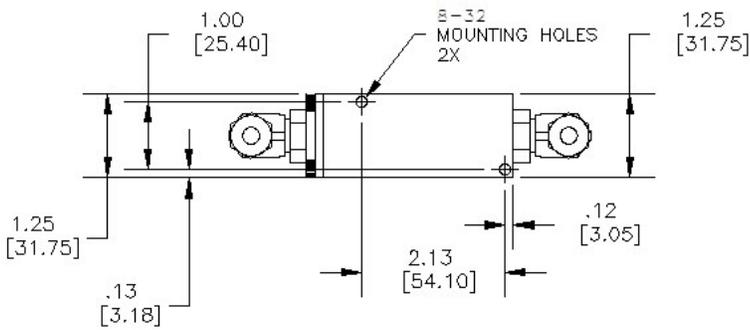
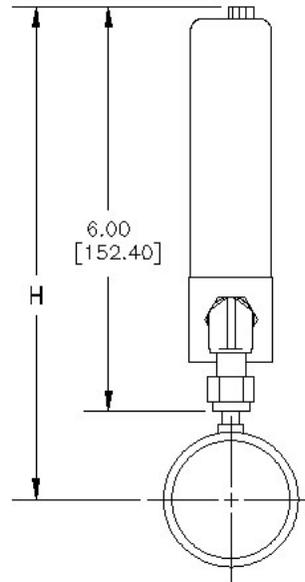
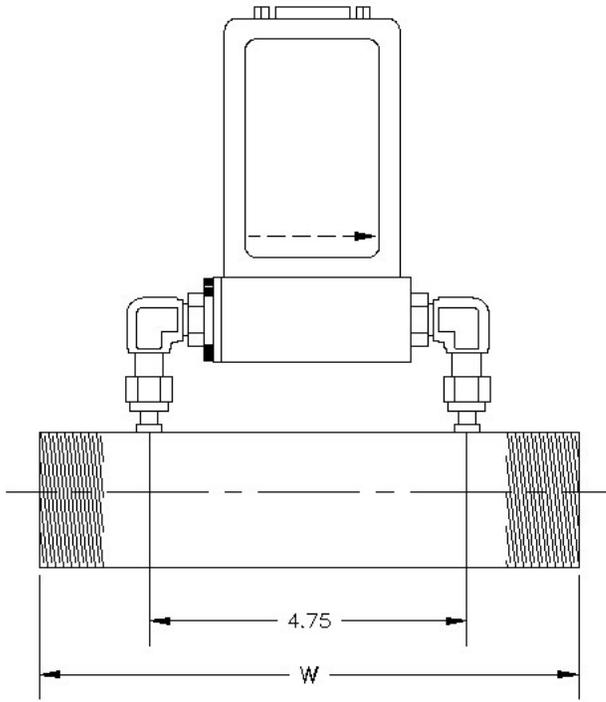
<i>HFM-200 with LFE</i>	
Accuracy <sup>1</sup>	± 1% of Full Scale
Repeatability	± 0.05% of Full Scale
Pressure Coefficient	+0.0067%/psi (N <sub>2</sub> )
Leak Integrity	< 1x10 <sup>-7</sup> sccs He
Operating Temperature	-10°C - 65°C
Temperature Coefficient	Zero ± 0.035%/°C of F.S. (-10°C-65°C) Span ± 0.027%/°C of Rdg (-10°C-65°C)
FS Flow Ranges <sup>2</sup>	Flows from 0-25 slm up to 0-15,000 slm (N <sub>2</sub> Equiv.)
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
Connector (+/- 15VDC)	15-pin subminiature D
Connector (+24 VDC)	9-pin subminiature D
Wetted Materials	316 SS, Microbrazed 50, Niore and Silverbrazed 45 Braze materials, Viton®
Fittings	See Selection Chart
Standard Working Pressure	150 psig for flanged LFEs 500 psig for threaded or smooth LFEs
Working Pressure (transducer)	500 psig

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 (N<sub>2</sub> 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
<b>C. Board</b>	
01	Standard
02	24 VDC **

<b>Output - 0-20 Ma</b>	
01	0-5 Volts (Std)
02	4-20 mA ***

<b>Fittings</b>	
05	1/4" Elbow

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

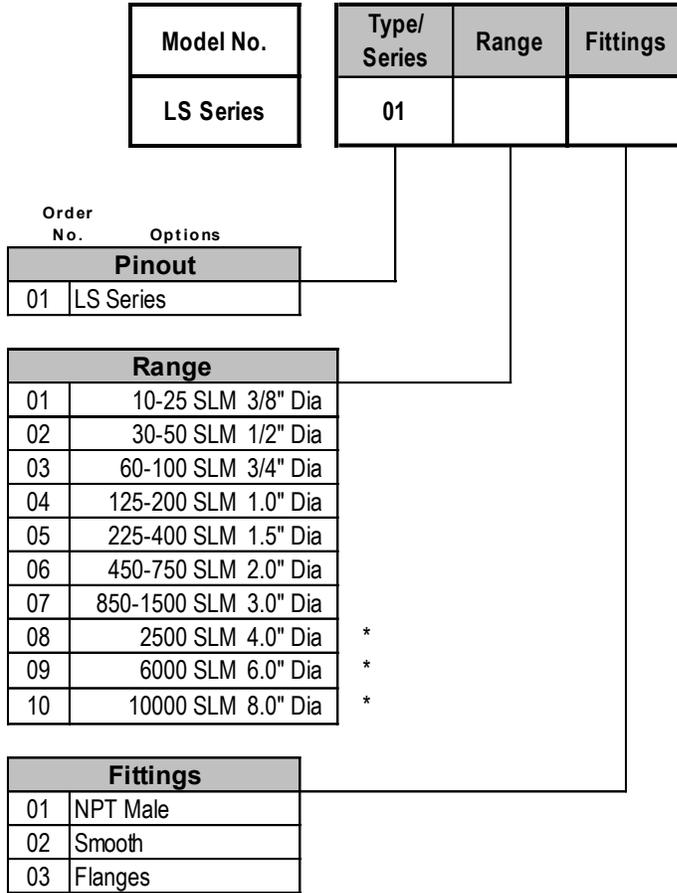
<b>Working Pressure</b>	
01	500 psig (Std)

<b>Calibration Type</b>	
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



### 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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