



# TELEDYNE HASTINGS INSTRUMENTS

*HFM-205 Flow Meter*

*HFC-207 Flow Controller*

## **HIGH CAPACITY FLOW METERS AND CONTROLLERS**

### **FEATURES**

- $\pm 1\%$  full scale accuracy<sup>1</sup>
- Input Power: +/- 15 VDC or +24 VDC (specify when ordering)
- Available Flow Ranges:  
0 - 1000 slm up to 2500 slm (N2 Equivalent)
- NIST Traceable Calibration Certificate

### **APPLICATIONS**

- Leak testing
- Flame Spray
- Aerospace

### **BENEFITS**

- Excellent Stability
- Proven Reliability
- Outstanding Zero Stability



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# Flow Meters and Flow Controllers



### **DESCRIPTION**

The Teledyne Hastings Instruments (THI) Model HFM Mass Flowmeter and HFC Mass Flow Controller represent over 65 years of experience in designing and manufacturing reliable, high quality mass flow instruments.

The HFM/HFC 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. The HFC also features a two-stage, pilot-operated control valve.

The instrument's inherent linear response to flow changes and THI's long-proven reputation for quality, result in the finest flow meters and flow controllers available today.

Instruments are normally calibrated with the appropriate standard calibration gas (air), then a gas conversion factor is used to adjust the output the intended gas. Special calibration for other gases, such as oxygen, helium and argon, are available upon special request.

## Specifications and Standards

### Options:

- Fittings –
  - VCR®
  - VCO®
  - Swagelok®,
- Seals -
  - Kalrez
  - Neoprene
  - Buna-N

- Output -
  - 0 - 5 VDC
  - 4 - 20 mA
  - 0 - 20 mA

### EMC:

EN 61326-1

### Accessories

- Power Supplies available with;
  - Integral Flow Totalizer
  - Alarm Set Points
  - Interconnecting cables



**THCD-100 Power Supply & Display**

### COMMON SPECIFICATIONS HFM-205/HFC-207

<b>Accuracy<sup>1</sup></b>	± 1.0% of F.S.
<b>Repeatability</b>	± 0.05% of F.S.
<b>Maximum Operating Pressure</b>	500 psi
<b>Pressure Coefficient</b>	-0.0067% /psi
<b>Leak Integrity</b>	< 1x10 <sup>-9</sup> sccs He
<b>Temperature Coefficient (zero)</b>	Zero ±.035%C of F.S. (0-60°C)
<b>Temperature Coefficient (span)</b>	Span ± .05%C of Rdg (0-60°C)
<b>Standard Output</b>	0 - 5 VDC
<b>Optional Output</b>	4 - 20 mA, 0 - 20 mA
<b>Connector (± 15 VDC)</b>	15 - pin subminiature D 9 - pin subminiature D
<b>Connector (+ 24 VDC)</b>	

### SPECIFICATIONS HFM-205

<b>Power Requirements (±15 V)</b>	± (14-16) VDC @ ±30mA (< 1 Watt)
<b>Power Requirements (+24 V)</b>	(14-32)VDC (<1.9Watt)
<b>Wetted Materials</b>	302 SS, 316 SS, Nickel 200, Viton®
<b>Weight (approx.)</b>	8.1 lb (3.65 kg)

### SPECIFICATIONS HFC-207

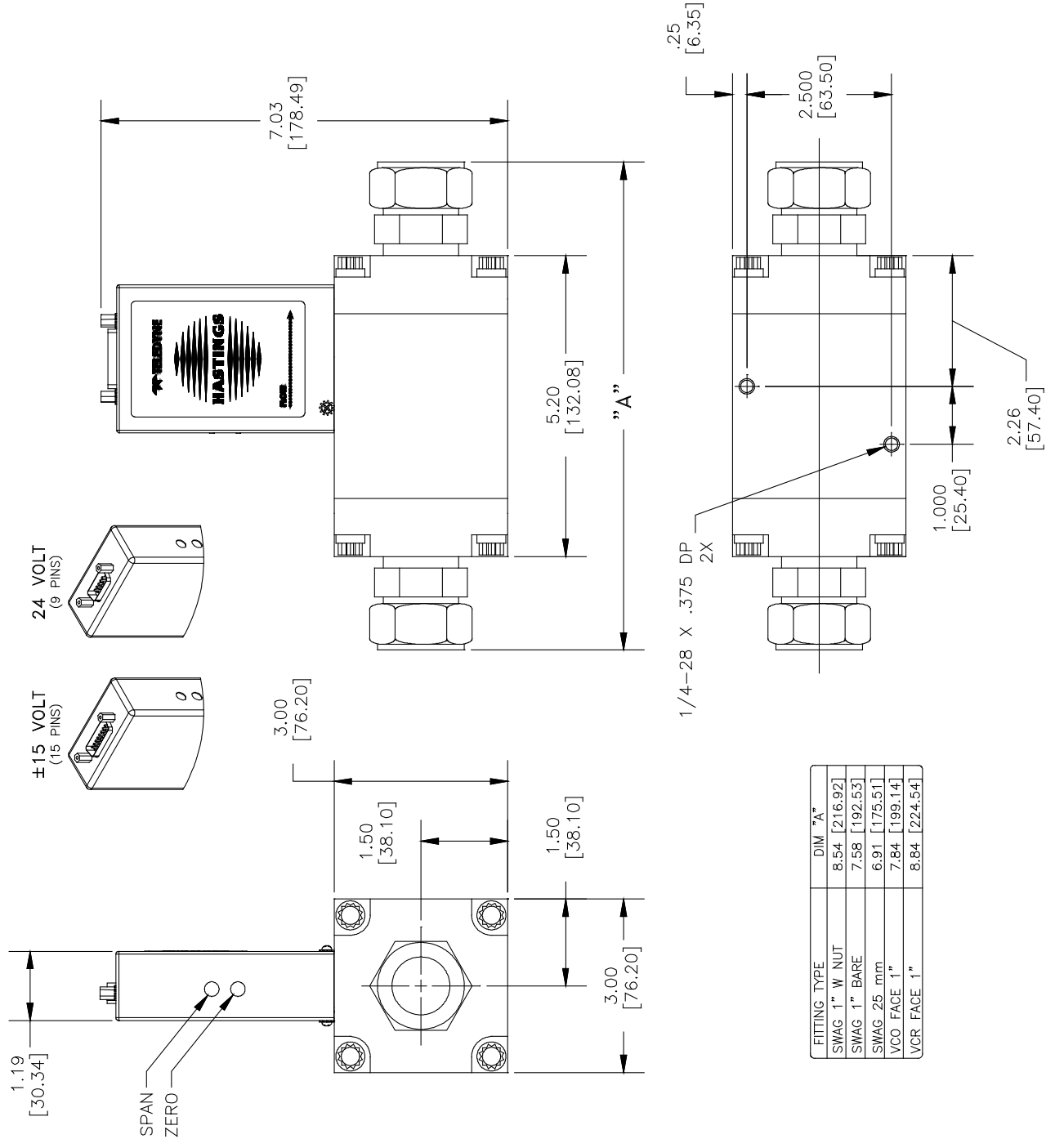
<b>Power Requirements (±15 V)</b>	± (14-16) VDC @ +60/-185 (<3 Watt)
<b>Power Requirements (+24 V)</b>	(14-32)VDC (<3Watt)
<b>Wetted Materials</b>	302 SS, 316 SS, Nickel 200, Viton® Kalrez (Valve Seat)
<b>Setpoint Input</b>	0-5 VDC (Std) /4-20mA (optional)
<b>Weight (approx.)</b>	14.9 lb (6.76 kg)

<sup>1</sup> 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.

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.

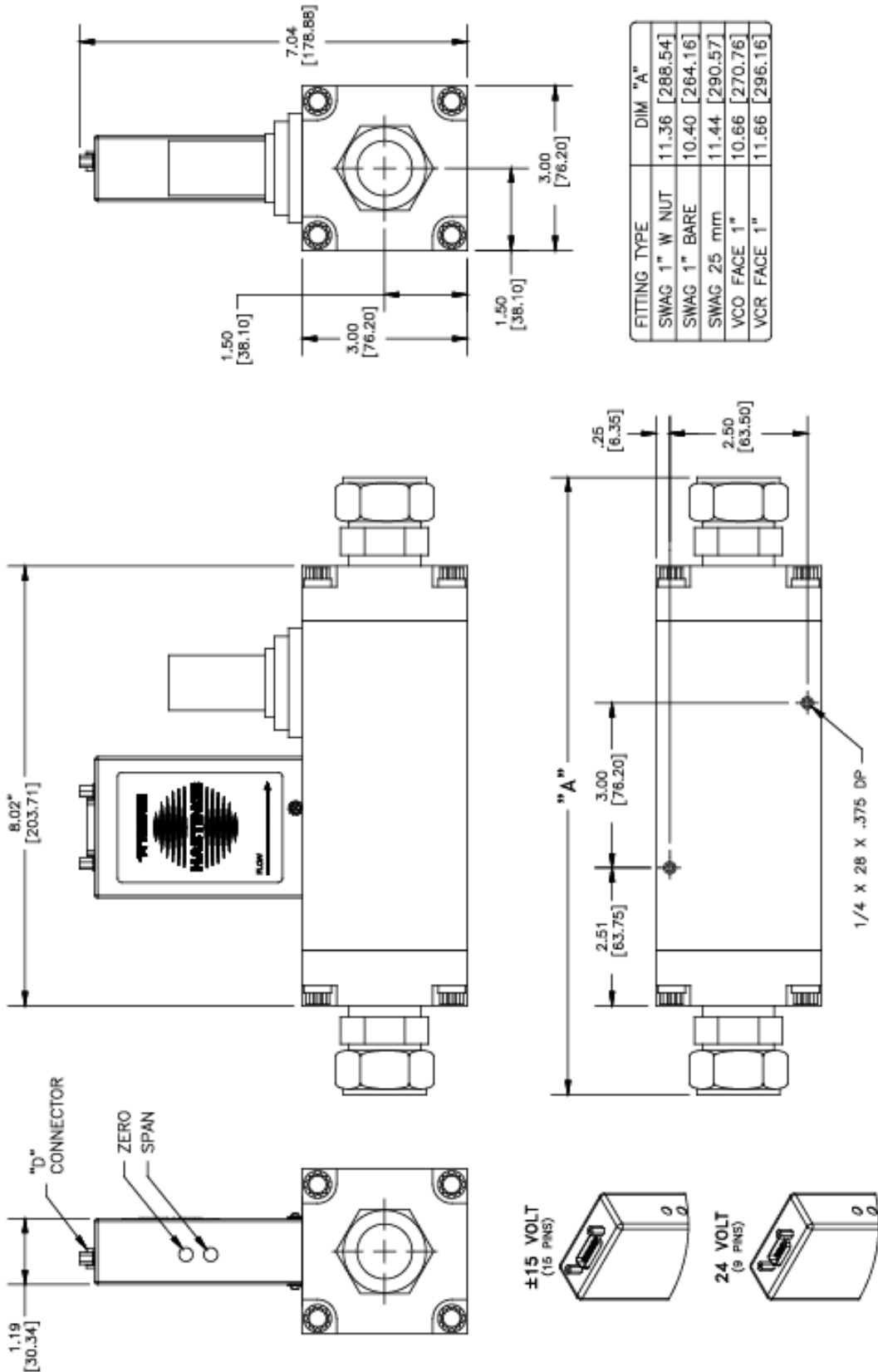
Viton® is a registered trademark of DuPont Performance Elastomers  
 Kalrez® is a registered trademark of DuPont Dow Elastomers  
 VCR® is a registered trademark of Swagelok Company.

HFM-205 Outline Drawing



FITTING TYPE	DIM "A"
SWAG 1" W NUT	8.54 [216.92]
SWAG 1" BARE	7.58 [192.53]
SWAG 25 mm	6.91 [175.51]
VCO FACE 1"	7.84 [199.14]
VCR FACE 1"	8.84 [224.54]

HFC-207 Outline Drawing



# Selection Chart

Model No.	Circuit Board	Output	Fittings	Seals	Working Pressure	Calibration Type
HFM-205						
HFC-207						

**Options**

Circuit Board	
01	Standard ( $\pm 15$ VDC)
03	24VDC Power

Output	
01	0-5 Volts (Std)
02	4-20 mA ** (Output Only)
03	4-20 mA I/O
04	0-20 mA I/O

Fittings	
01	1" Swagelok (Std)
02	1" VCR <sup>®</sup>
03	1" VCO <sup>®</sup>
04	25 mm

Seals	
01	Viton <sup>®</sup> (Std)
02	Karlez <sup>®</sup>
03	Neoprene
04	Buna-N

Working Pressure	
01	500 psi (std)

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

\*\* 0-5 VDC Input

**Range Information for all Instruments**

Each calibration will require the following information:

Range \_\_\_\_\_  
 Flow Units \_\_\_\_\_  
 Gas \_\_\_\_\_

**For the HFC Instruments also**

Upstream Pressure \_\_\_\_\_  
 (maximum & minimum)  
 Downstream Pressure \_\_\_\_\_  
 (maximum & minimum)  
 Does the downstream pressure change with flowrate? Y/N \_\_\_\_\_

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



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