



**TELEDYNE HASTINGS INSTRUMENTS**  
Everywhere you look™

**HFM-D-301A/B** Mass Flow Meter  
**HFC-D-303A/B** Mass Flow Controller  
**HFM-D-305A/B** Mass Flow Meter  
**HFC-D-307A/B** Mass Flow Controller

## FEATURES

- 301/303 Range 0 - 25 slm to 0-1000 slm
- 305/307 Range 0-1000 slm to 0-2500 slm (N<sub>2</sub> Equivalent)
- Excellent Accuracy  
±(0.5% of Reading + 0.2% of Full Scale)
- Touchscreen Display Option ("B" Series)
- USB ("B" Series)
- 0-5 VDC, 0-10 VDC, 0-20 mA or 4-20 mA I/O
- RS232 / RS485
- Typical Settling Time:
  - HFM-D-301/305 < 1 second
  - HFC-D-303/307 1 -2 seconds
- Self-diagnostic Status LEDs
- Auto-Zero (Controllers Only)
- Totalizer
- Large Diameter Sensor Tube (low dP)
-  IP-67 Version Available
- Operating Pressures to 500 psi or higher
- NIST Traceable Calibration

## APPLICATIONS

- Leak Testing
- High Purity Gas Delivery
- Heat Treat
- Gas Blending
- Secondary Calibration Reference
- Fuel Cell R&D
- Environmental Monitoring

## BENEFITS

- High Accuracy
- Fast Metering Response
- Superior Linearity
- Rapid Controller Settling Time
- Digital Extended Range

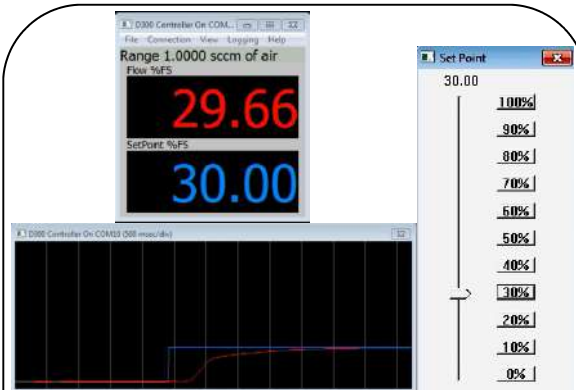
# Mass Flow Meters & Controllers



**HFC-D-303A Mass Flow Controller**



**Optional Touchscreen Display**



**Data Logging Software**

## Description

The Digital 300 Series of thermal mass flow meters and controllers from Teledyne are designed to accurately measure mass flow without corrections or compensations for gas pressure and temperature. They are accurate to better than  $\pm(0.5\%$  of reading + 0.2% of full scale) for full scale flow rates from 0-5 sccm to 0-25 slm.

The Digital 300 Series uses a thermal-based mass flow sensor. This sensor is designed to provide exceptional linear response to changing flow rates. In addition, the electronics associated with each sensor are precisely tuned to give fast response times. The HFC-D-302A & B flow controllers feature a precision solenoid proportional control valve. Teledyne configures and tests each individual valve based on the users flow rate, gas, and pressure conditions.

### "A" Series

The A Series of the Digital 300 line of thermal mass flow meters and controllers utilizes a 15-pin d-sub connector which is compatible with Teledyne Hastings' power supplies and cables. The Series also employs dual RJ communication ports for RS232/485 communication. The A Series is backwards compatible with previous versions of Teledyne's Digital 300. Also, the A Series can be configured with the optional IP-67 enclosure to provide protection against water and dust.

### "B" Series—300 Vue

The B Series features an optional touchscreen display which allows the user to view and control the flow rate directly from the flow controller. The main screen displays the flow rate, the flow setpoint (in the case of a flow controller), the units of measure, and the valve mode (Auto, Open, Closed). The user also has access to menus that allow quick configuration of the flow instrument for changing requirements. The display can also graphically display changes in flow over time. The B Series also features a USB port which is standard on all meters and controllers. Both the A & B Series are compatible with Teledyne's data logging software.

*Teledyne 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 the Chemours Company.  
Kalrez® is a registered trademark of the E.I. du Pont de Nemours and Co  
VCR® is a registered trademark of the Swagelok® Company.



**HFC-D-303B Mass Flow Controller**



**"A" Series with Optional IP-67 Enclosure**

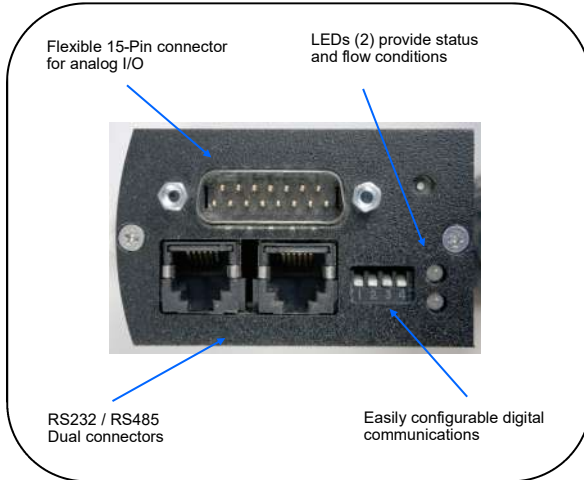


**"B" Series with Optional Control/Display**

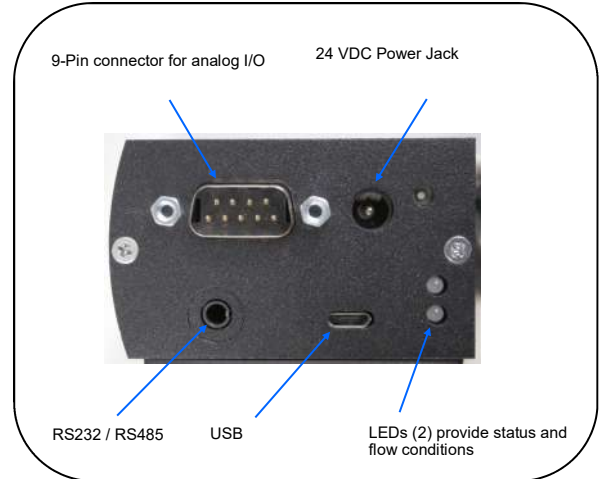


**"B" Series features USB**

## Comparison



**HFM-D-301A / 305A (meter)**  
**HFC-D-303A / 307A (controller)**



**HFM-D-301B / 305B (meter)**  
**HFC-D-303B / 307B (controller)**

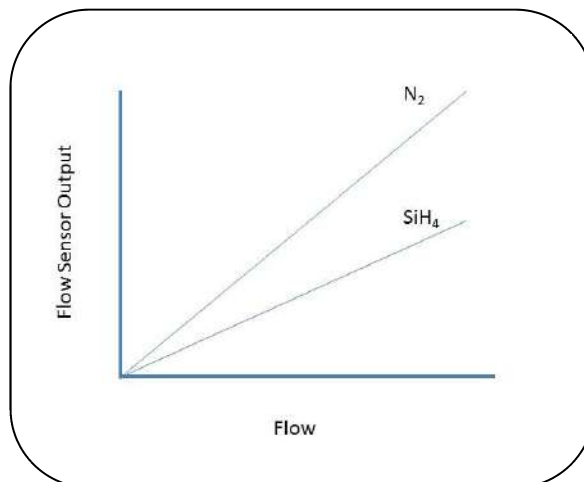
|                                                                                                                                                                         | A Series | B Series      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------|
| D-Connector                                                                                                                                                             | 15-Pin   | 9-Pin         |
| RS232/485 Connector                                                                                                                                                     | Dual RJ  | Video Bayonet |
| Status/Flow LEDs                                                                                                                                                        | ✓        | ✓             |
| Color Display/Control Option                                                                                                                                            | —        | ✓             |
| USB                                                                                                                                                                     | —        | ✓             |
| Compatible with Data Logging Software                                                                                                                                   | ✓        | ✓             |
| Power Jack                                                                                                                                                              | —        | ✓             |
| IP-67 Option                                                                                                                                                            | ✓        | —             |
|   | ✓        | ✓             |

## Digital 300 Series Flow Sensor

The Digital 300 Series is built using a patented (Patent #6,125,695) flow sensor. The sensor's excellent linearity, in turn, leads to improved accuracy. Flow calibrations are typically performed in N<sub>2</sub> or air. The output can then be scaled for use in other gases (see graph to the right). The 300 Series excellent linearity allows the linearity to be retained when switching from the calibration gas to the process gas.

The patented sensor contains fast electronic circuitry. This is critical when the flow meter is coupled with a proportional control valve to create a thermal mass flow controller. The fast response of the sensor combined with high-speed digital control gives the user excellent control of the process gas flow.

The sensor tube utilized in the flow sensor has a relatively large diameter. This allows the Digital 300 flow meter to have a small pressure drop. A low differential pressure drop across the flow meter is ideal for leak detection and gas sampling applications.

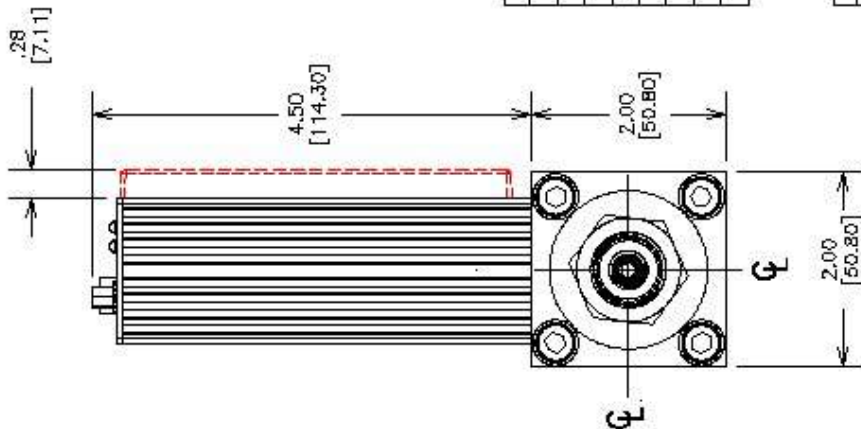


### Specifications

#### HFM-D-301A/B & 305A/B (flow meter)

#### HFC-D-303A/B & 307 A/B (flow controller)

|                                    |                                                                                                                                                                                |                                                                                                                                                                                |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Full Scale Ranges:                 | HFM-D-301A/B (L): 0-25 slm to 300 slm (N <sub>2</sub> )<br>HFM-D-301A/B (H): 0-300 slm to 1000 slm (N <sub>2</sub> )<br>HFM-D-305A/B: 0-1000 slm to 2500 slm (N <sub>2</sub> ) | HFC-D-303A/B (L): 0-25 slm to 300 slm (N <sub>2</sub> )<br>HFC-D-303A/B (H): 0-300 slm to 1000 slm (N <sub>2</sub> )<br>HFC-D-307A/B: 0-1000 slm to 2500 slm (N <sub>2</sub> ) |
| Accuracy                           | ± (0.5% of reading + 0.2% of full scale)                                                                                                                                       | ± (0.5% of reading + 0.2% of full scale)                                                                                                                                       |
| Repeatability                      | ± 0.15% of full scale                                                                                                                                                          | ± 0.15% of full scale                                                                                                                                                          |
| Maximum Working Pressure           | 500 psig (Optional 1000 psig for HFM-D-301)                                                                                                                                    | 500 psig (Optional 1000 psig for HFC-D-303)                                                                                                                                    |
| Operating Temperature              | -20 — 70°C in non-condensing environment                                                                                                                                       | -20 — 70°C in non-condensing environment                                                                                                                                       |
| Warm up time                       | 30 min for optimum accuracy<br>6 min within rated accuracy                                                                                                                     | 30 min for optimum accuracy<br>6 min within rated accuracy                                                                                                                     |
| Settling Time                      | Typically ≤ 1 seconds                                                                                                                                                          | Typically < 1-2 seconds                                                                                                                                                        |
| Temperature Coefficient of Zero    | < ± 0.2% / °C of full scale max (-20—70°C)                                                                                                                                     | N/A for controller with auto-zero enabled                                                                                                                                      |
| Temperature Coefficient of Span    | < ± 0.1% / °C of reading max (-20—70°C)                                                                                                                                        | < ± 0.1% / °C of reading max (-20—70°C)                                                                                                                                        |
| Attitude Sensitivity of Zero       | < 1.4 % of full scale (N <sub>2</sub> @ 50 psig)                                                                                                                               | < 1.4 % of full scale before autozero (N <sub>2</sub> @ 50 psig)                                                                                                               |
| Analog I/O (standard)              | 0-5 VDC                                                                                                                                                                        | 0-5 VDC                                                                                                                                                                        |
| Analog I/O (optional)              | 0-10 VDC, 0-20 mA, 4-20 mA                                                                                                                                                     | 0-10 VDC, 0-20 mA, 4-20 mA                                                                                                                                                     |
| Wetted Materials                   | 316L SS, Nickel 200, 302 SS, PTFE, Viton                                                                                                                                       | 316L SS, Nickel 200, 302 SS, PTFE, Viton, Kalrez® (valve seat)                                                                                                                 |
| Weight (approx.)                   | HFM-D-301A 3.6 lb. (1.6 kg)<br>HFM-D-301B 3.7 lb. (1.7 kg)<br>HFM-D-305A 8.4 lb. (3.8 kg)<br>HFM-D-305B 8.5 lb. (3.9 kg)                                                       | HFC-D-303A 5.4 lb. (2.5 kg)<br>HFC-D-303B 5.5 lb. (2.5 kg)<br>HFC-D-307A 15.5 lb. (7.0 kg)<br>HFC-D-307B 15.6 lb. (7.1 kg)                                                     |
|                                    | <b>HFM-D-301A &amp; 305A (meter)</b>                                                                                                                                           | <b>HFC-D-303A &amp; 307A (controller)</b>                                                                                                                                      |
| Analog Connector                   | 15 Pin D-sub                                                                                                                                                                   | 15 Pin D-sub                                                                                                                                                                   |
| Digital Connector                  | Dual RJ-12, 6P6C modular jack                                                                                                                                                  | Dual RJ-12, 6P6C modular jack                                                                                                                                                  |
| IP-67 Connector (Analog & Digital) | 12 Pin Sealed Circular                                                                                                                                                         | 12 Pin Sealed Circular                                                                                                                                                         |
| Power Requirements                 | 11-36 VDC @ 3.1 Watt max<br>Unipolar or Bipolar (e.g. ± 15 VDC, ± 12 VDC)                                                                                                      | 11-36 VDC @ 6.7 Watt (max),<br>Unipolar or Bipolar (e.g. ± 15 VDC, ± 12 VDC)                                                                                                   |
|                                    | <b>HFM-D-301B &amp; 305B (meter)</b>                                                                                                                                           | <b>HFC-D-303B &amp; 307B (controller)</b>                                                                                                                                      |
| Analog Connector                   | 9 Pin D-sub                                                                                                                                                                    | 9 Pin D-sub                                                                                                                                                                    |
| Digital Connector                  | Bayonet, 4-conductor TRRS 3.5 mm jack                                                                                                                                          | Bayonet, 4-conductor TRRS 3.5 mm jack                                                                                                                                          |
| Power Requirements (w/ display)    | 11-36 VDC @ 4.7 Watt (max),<br>Unipolar or Bipolar (e.g. ± 15 VDC, ± 12 VDC)                                                                                                   | 11-36 VDC @ 8.3 Watt (max) *<br>Unipolar or Bipolar (e.g. ± 15 VDC, ± 12 VDC)                                                                                                  |
|                                    |                                                                                                                                                                                | *15 VDC min reqd. for 0-20 & 4-20 mA operation                                                                                                                                 |

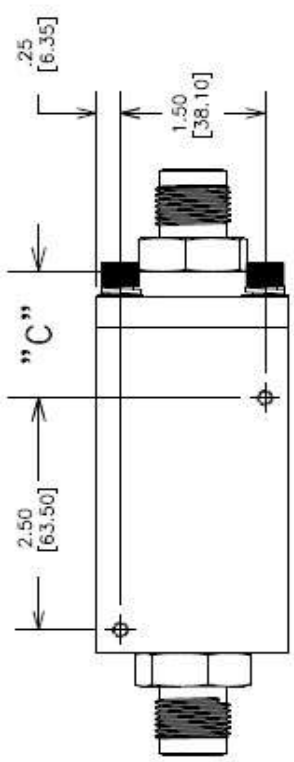
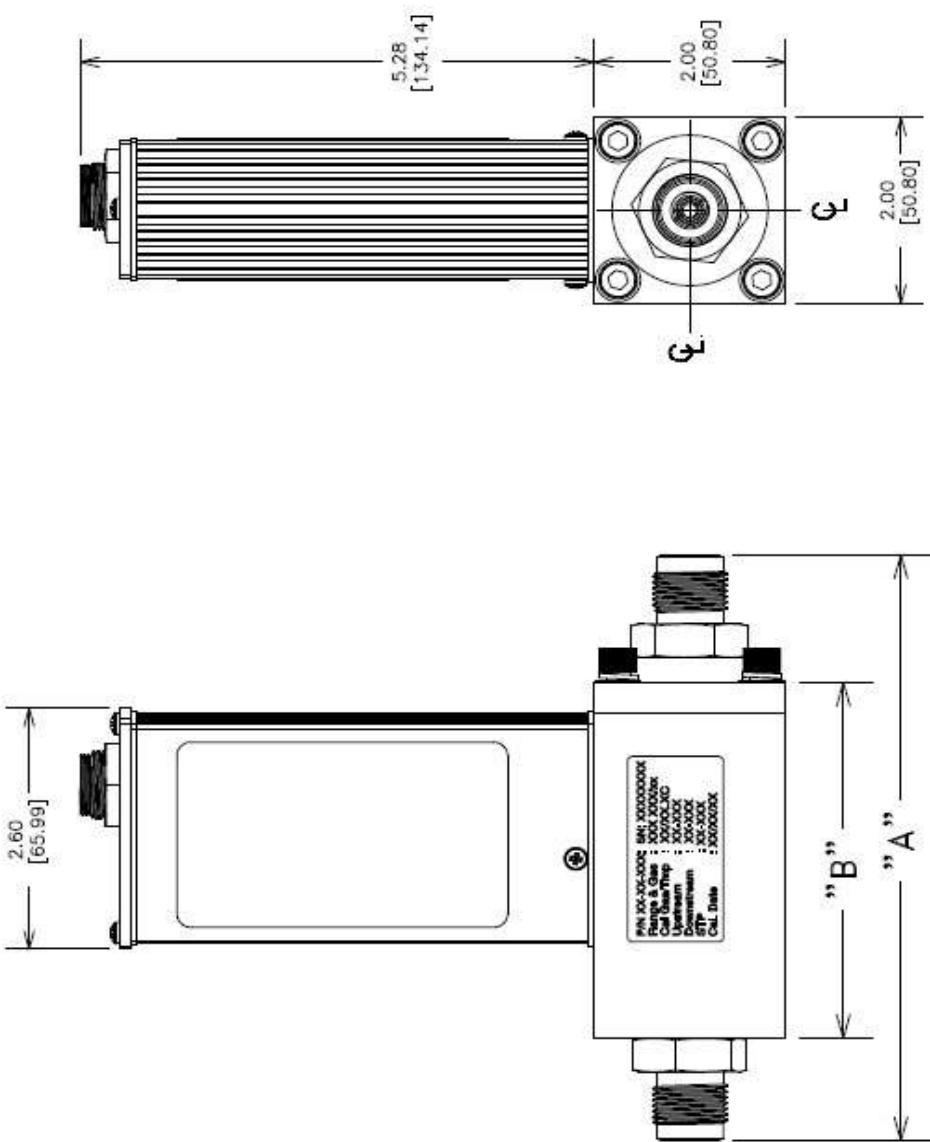


| FITTING TYPE      | DIM <sup>W/A</sup> |
|-------------------|--------------------|
| 1 1/16"-12 FEMALE | 4.31 [109.47]      |
| SWAG. 3/4" W NUT  | 6.99 [177.95]      |
| SWAG. 3/4" BARE   | 6.19 [157.23]      |
| VCO FACE 3/4"     | 6.59 [167.39]      |
| 20MM SWAGelok     | 6.95 [176.53]      |
| 3/4" VCR Face     | 7.52 [191.06]      |
| DIM "B"           | 4.06 [103.12]      |
| DIM "C"           | 1.56 [39.87]       |

| FITTING TYPE     | DIM "A"       |
|------------------|---------------|
| 3/4"-16 FEMALE   | 4.11 [104.39] |
| SWAG. 1/2" W NUT | 6.31 [160.27] |
| SWAG. 1/2" BARE  | 5.73 [145.54] |
| WCO FACE 1/2"    | 6.17 [156.72] |
| WCR FACE 1/2"    | 6.55 [166.37] |
| 3/8" MALE NPT    | 5.98 [151.89] |
| 1/2" MALE NPT    | 6.31 [160.27] |
| 10mm SWAGELOK    | 6.35 [161.29] |
| 12mm SWAGELOK    | 6.53 [165.86] |
| 3/8" SWAGELOK    | 6.11 [155.19] |
| DIM "B"          | 4.06 [103.12] |
| DIM "C"          | 1.36 [34.59]  |



Outline Drawings HFM-D-301 A Series w/ IP-67



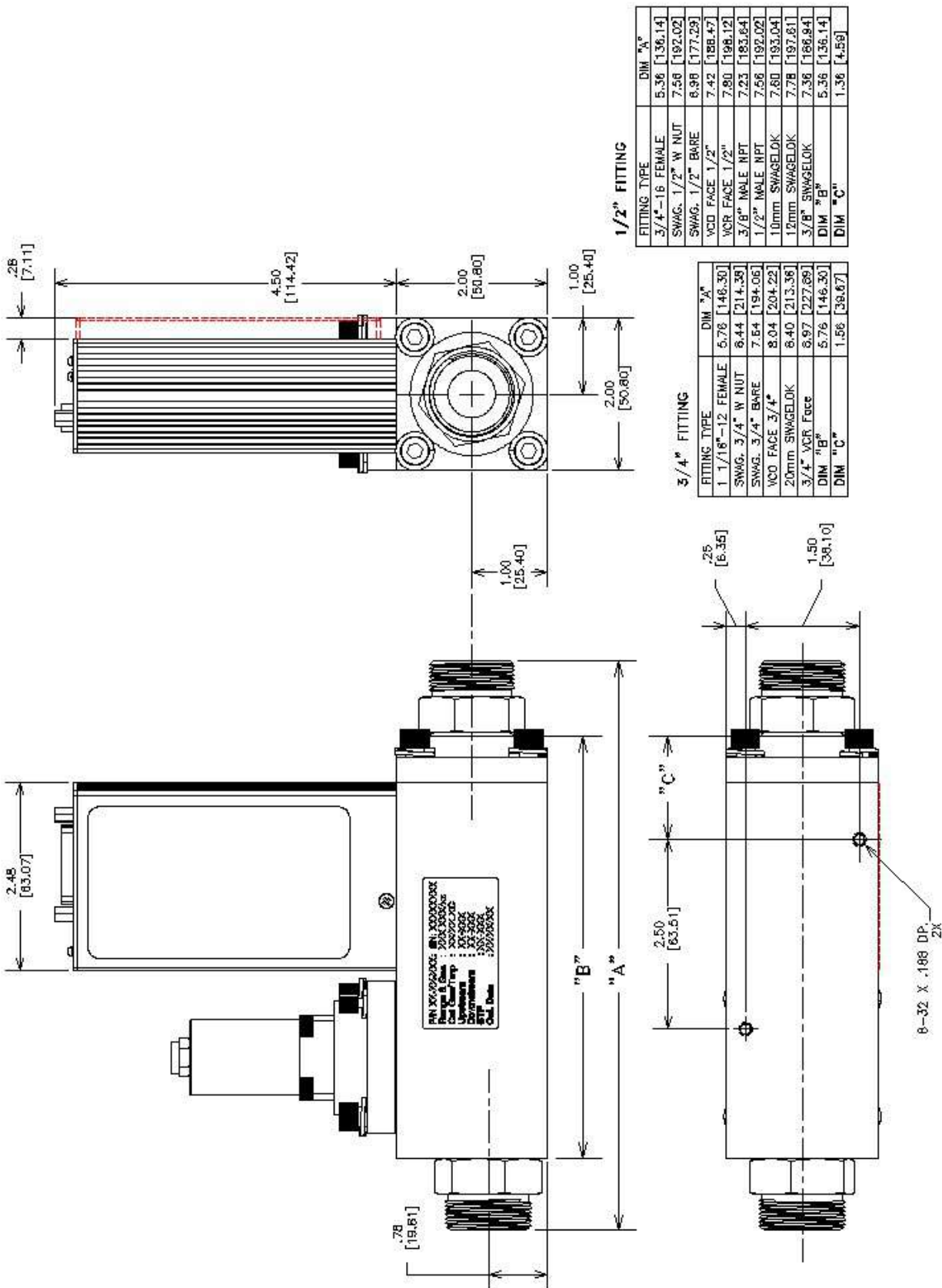
1/2 FITTINGS

| FITTING TYPE     | DIM "A"       |
|------------------|---------------|
| 3/4"-16 FEMALE   | 4.11 [104.39] |
| SWAG. 1/2" W NUT | 6.31 [160.27] |
| SWAG. 1/2" BARE  | 5.73 [145.54] |
| VCO FACE 1/2"    | 6.17 [156.72] |
| VCR FACE 1/2"    | 6.55 [166.37] |
| 3/8" MALE NPT    | 5.98 [151.89] |
| 1/2" MALE NPT    | 6.31 [160.27] |
| 10mm SWAGelok    | 6.35 [161.29] |
| 12mm SWAGelok    | 6.53 [165.86] |
| 3/8" SWAGelok    | 6.11 [155.19] |
| DIM "B"          | 4.06 [103.12] |
| DIM "C"          | 1.36 [34.59]  |

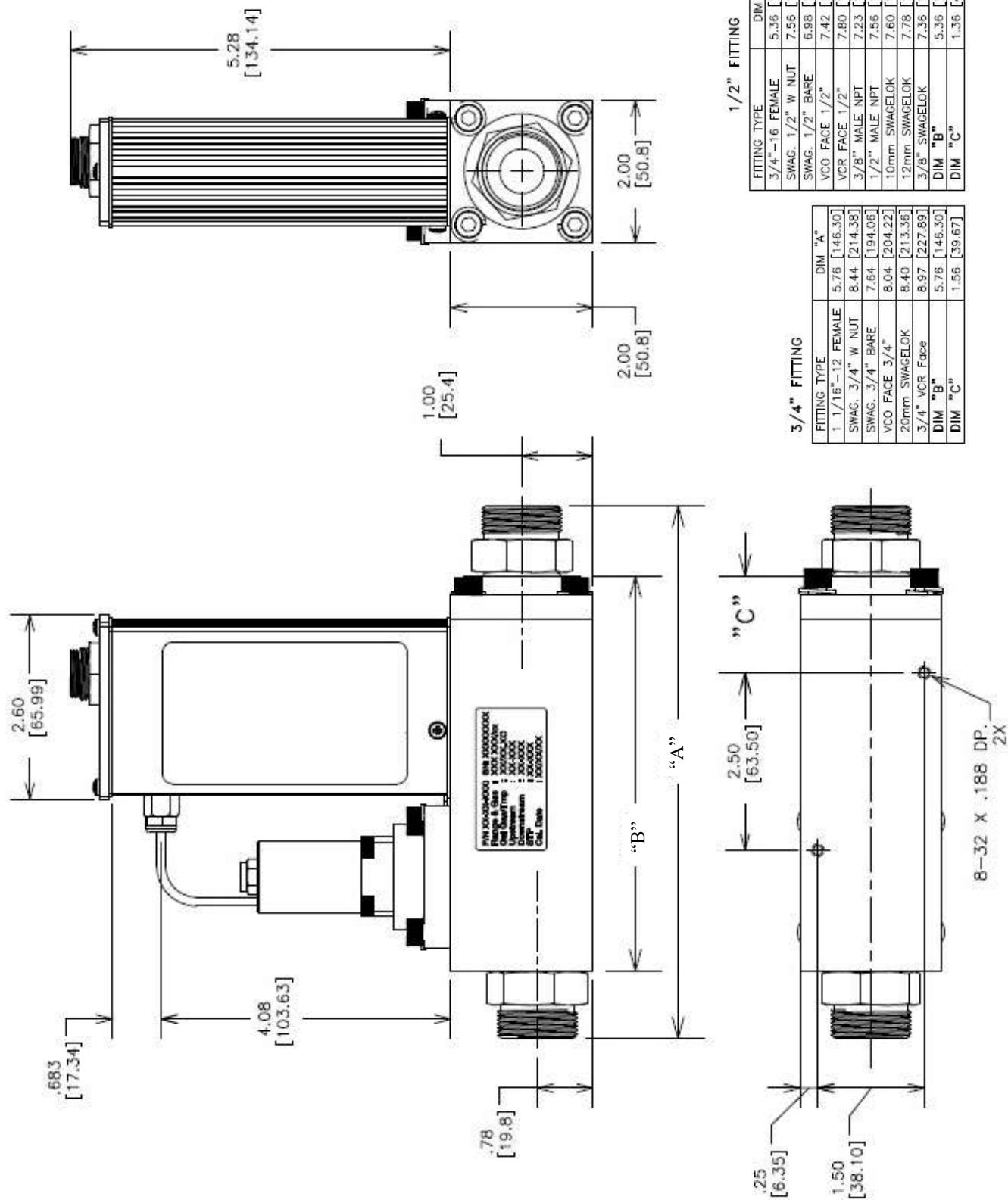
3/4 FITTINGS

| FITTING TYPE      | DIM "A"       |
|-------------------|---------------|
| 1 1/16"-12 FEMALE | 4.31 [109.47] |
| SWAG. 3/4" W NUT  | 6.99 [177.55] |
| SWAG. 3/4" BARE   | 6.19 [157.23] |
| VCO FACE 3/4"     | 6.59 [167.39] |
| 20mm SWAGelok     | 6.95 [176.53] |
| 3/4" VCR Face     | 7.52 [191.06] |
| DIM "B"           | 4.06 [103.12] |
| DIM "C"           | 1.56 [39.67]  |

Outline Drawings HFC-D-303 A & B Series

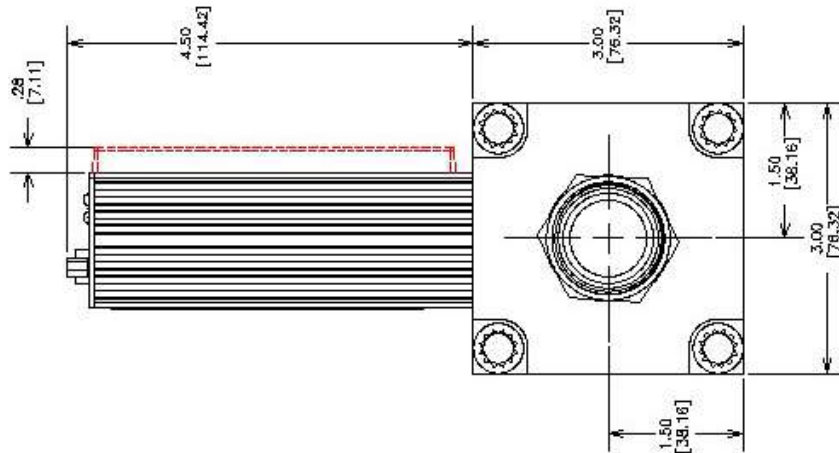


Outline Drawings HFC-D-303 A Series w/ IP-67

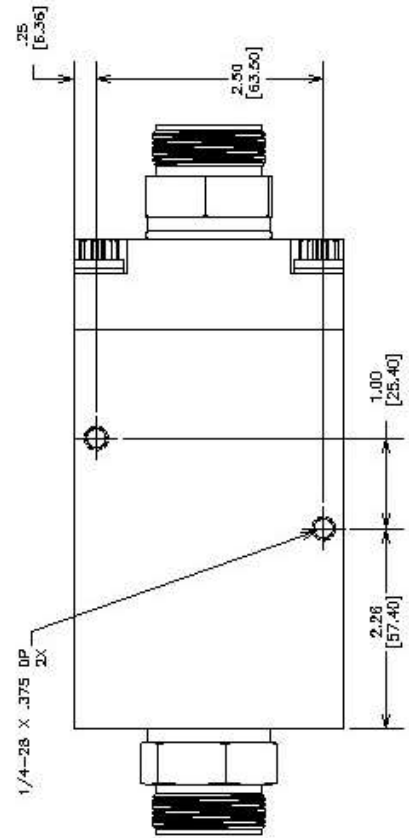
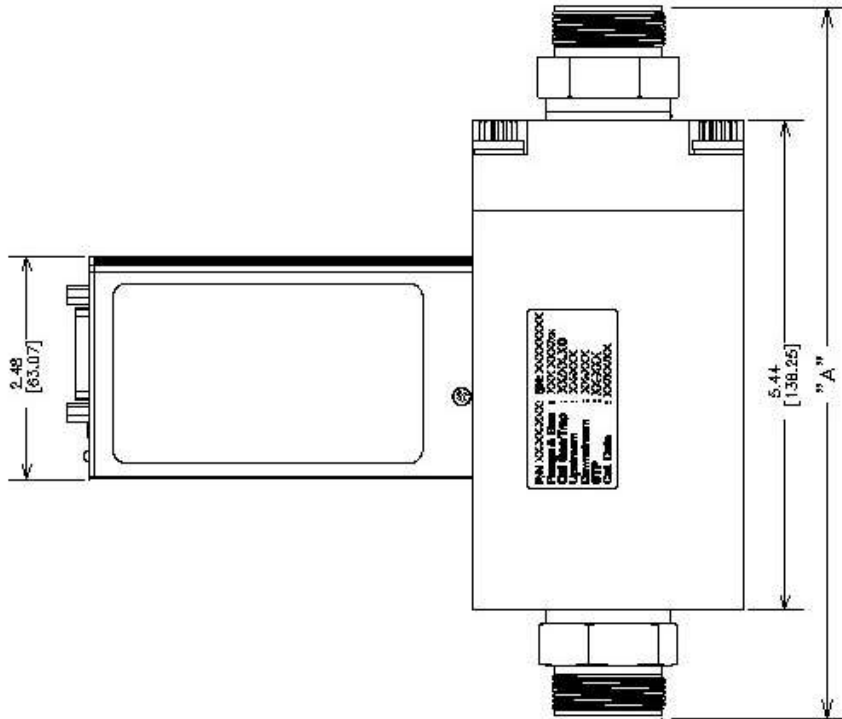


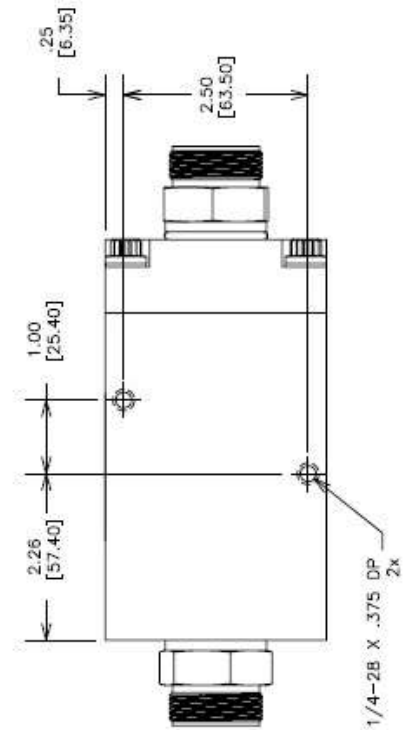


# Outline Drawings HFM-D-305 A & B Series



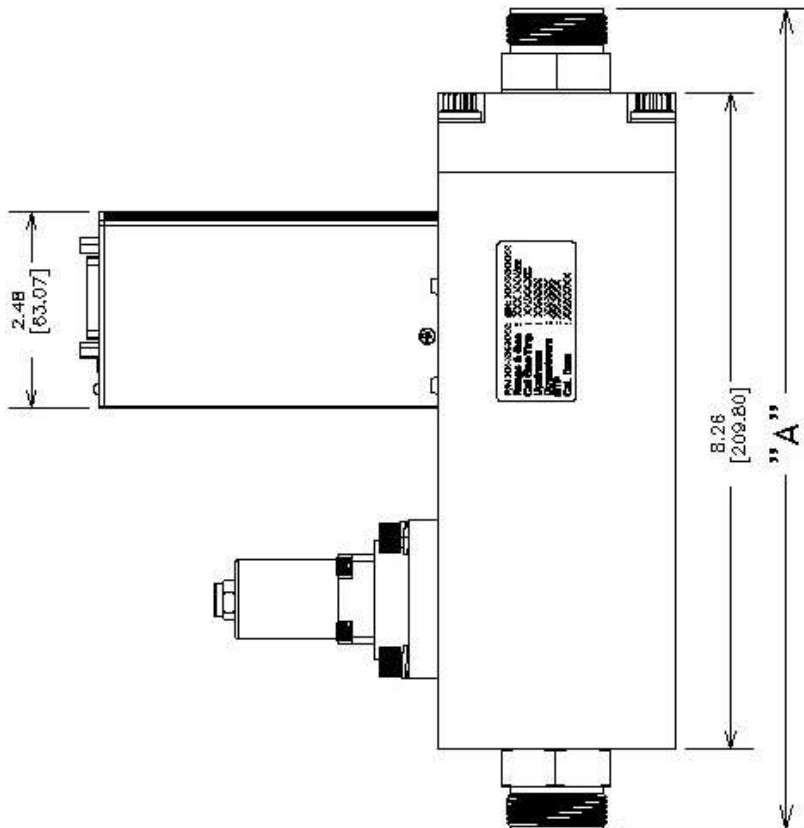
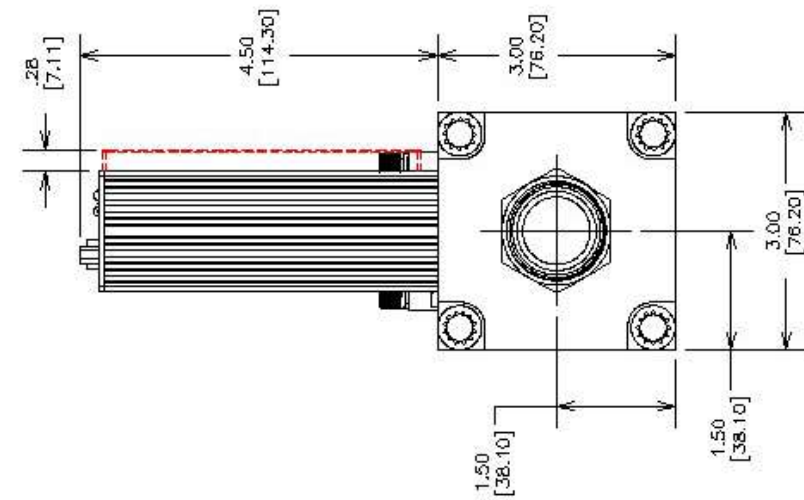
| FITTING TYPE           | DIM "A"       |
|------------------------|---------------|
| 3/4" SWAGelok          | 7.38 [187.45] |
| 1" SWAGelok            | 7.58 [192.53] |
| 3/4" MALE NPT          | 7.84 [199.14] |
| 1" MALE NPT            | 8.22 [208.79] |
| 1" VDO                 | 7.84 [199.14] |
| 1" VDO                 | 8.86 [225.04] |
| 25mm SWAGelok          | 7.59 [192.79] |
| 1" 5/16-12 FULL THREAD | 5.44 [138.18] |
| 1" FEMALE NPT          | 6.02 [203.71] |



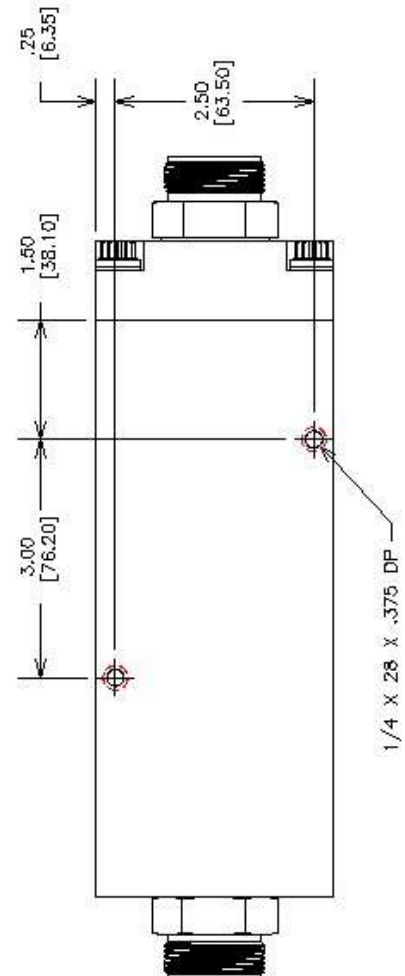


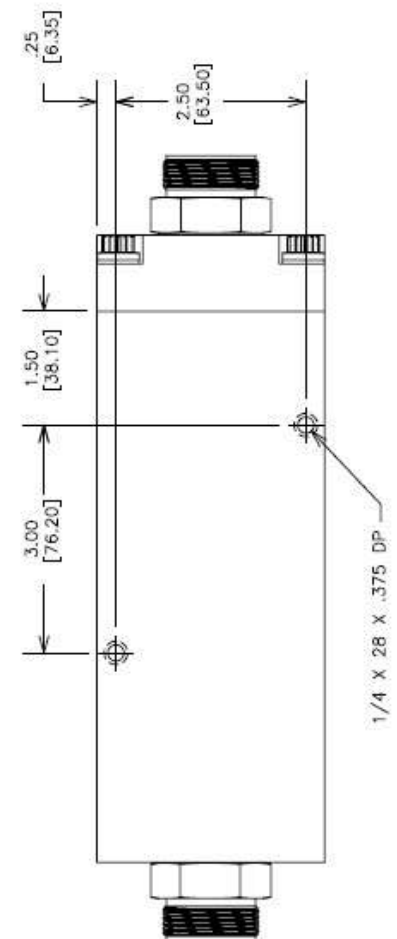
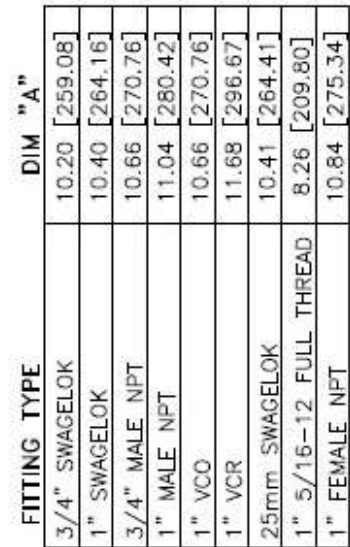
| FITTING TYPE           | DIM "A"       |
|------------------------|---------------|
| 3/4" SWAGELOK          | 7.38 [187.45] |
| 1" SWAGELOK            | 7.58 [192.53] |
| 3/4" MALE NPT          | 7.84 [199.14] |
| 1" MALE NPT            | 8.22 [208.79] |
| 1" VCO                 | 7.84 [199.14] |
| 1" VCR                 | 8.86 [225.04] |
| 25mm SWAGELOK          | 7.59 [192.79] |
| 1" 5/16-12 FULL THREAD | 5.44 [138.18] |
| 1" FEMALE NPT          | 8.02 [203.71] |

## Outline Drawings HFC-D-307 A & B Series



| FITTING TYPE           | DIM "A"        |
|------------------------|----------------|
| 3/4" SWAGELOK          | 10.20 [259.08] |
| 1" SWAGELOK            | 10.40 [264.16] |
| 3/4" MALE NPT          | 10.66 [270.76] |
| 1" MALE NPT            | 11.04 [280.42] |
| 1" VCR                 | 10.66 [270.76] |
| 1" VCR                 | 11.68 [296.67] |
| 25mm SWAGELOK          | 10.41 [264.41] |
| 1" 5/16-12 FULL THREAD | 8.26 [209.80]  |
| 1" FEMALE NPT          | 10.84 [275.34] |





## Selection Chart - HFM-D-301A & HFC-D-303A

| For Models |  | Circuit Board | Output | Fittings | Seals | Working Pressure | Calibration Options | Digital |
|------------|--|---------------|--------|----------|-------|------------------|---------------------|---------|
| HFM-D-301A |  |               |        |          |       |                  |                     |         |
| HFC-D-303A |  |               |        |          |       |                  |                     |         |

| Circuit Board |                 |
|---------------|-----------------|
| 01            | H Pin (Std)     |
| 02            | IP-67 Enclosure |

| Output |                |
|--------|----------------|
| 01     | 0-5 volt (Std) |
| 02     | 0-10 volt      |
| 03     | 4-20 mA        |
| 04     | 0-20 mA        |

| Small Base Fittings |                            |
|---------------------|----------------------------|
| 01                  | 1/2" VCR®                  |
| 02                  | 1/2" Swagelok (Std)        |
| 03                  | 1/2" VCO®                  |
| 06                  | 3/8" Male NPT              |
| 07                  | 1/2" Male NPT              |
| 08                  | 3/4"-16 Fem S. Thread      |
| 10                  | 10 mm Swagelok             |
| 12                  | 12 mm Swagelok             |
| 14                  | Surface Mount (meter only) |

| Large Base Fittings |                      |
|---------------------|----------------------|
| 04                  | 3/4" Swagelok (Std)  |
| 05                  | 3/4" VCO®            |
| 09                  | 1 1/16"-12 Female ST |
| 11                  | 3/4" VCR             |
| 13                  | 20 mm Swagelok       |

| Seals |              |
|-------|--------------|
| 01    | Viton® (Std) |
| 02    | Kalrez®      |
| 03    | Neoprene     |
| 04    | Buna-N       |

| Working Pressure |                    |
|------------------|--------------------|
| 01               | 500 psig max (Std) |
| 02               | 1000 psig          |

| Calibration Options |                                      |
|---------------------|--------------------------------------|
| 01                  | 1 Calibration Certificate (Std)      |
| 02                  | 2 NIST Traceable Calibration Reports |
| 03                  | 3 NIST Traceable Calibration Reports |
| 04                  | 4 NIST Traceable Calibration Reports |
| 05                  | 5 NIST Traceable Calibration Reports |
| 06                  | 6 NIST Traceable Calibration Reports |
| 07                  | 7 NIST Traceable Calibration Reports |
| 08                  | 8 NIST Traceable Calibration Reports |

| Digital |             |
|---------|-------------|
| 01      | RS232 (std) |
| 02      | RS485       |

**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



# Selection Chart HFM-D-301B & HFC-D-303B

| For Models | Output | Fittings | Seals | Working Pressure | Calibration Records | Digital | Calibration Type | Display |
|------------|--------|----------|-------|------------------|---------------------|---------|------------------|---------|
| HFM-D-301B |        |          |       |                  |                     |         |                  |         |
| HFC-D-303B |        |          |       |                  |                     |         |                  |         |

| Output |                |
|--------|----------------|
| 01     | 0-5 volt (Std) |
| 02     | 0-10 volt      |
| 03     | 4-20 mA        |
| 04     | 0-20 mA        |

| Small Base Fittings |                            |
|---------------------|----------------------------|
| 01                  | 1/2" VCR®                  |
| 02                  | 1/2" Swagelok (Std)        |
| 03                  | 1/2" VCO®                  |
| 06                  | 3/8" Male NPT              |
| 07                  | 1/2" Male NPT              |
| 08                  | 3/4"-16 Fem S. Thread      |
| 10                  | 10 mm Swagelok             |
| 12                  | 12 mm Swagelok             |
| 14                  | Surface Mount (meter only) |

| Large Base Fittings |                      |
|---------------------|----------------------|
| 04                  | 3/4" Swagelok (Std)  |
| 05                  | 3/4" VCO®            |
| 09                  | 1 1/16"-12 Female ST |
| 11                  | 3/4" VCR             |
| 13                  | 20 mm Swagelok       |

| Seals |              |
|-------|--------------|
| 01    | Viton® (Std) |
| 02    | Kalrez®      |
| 03    | Neoprene     |
| 04    | Buna-N       |

| Working Pressure |                    |
|------------------|--------------------|
| 01               | 500 psig max (Std) |
| 02               | 1000 psig          |

| Calibration Records |                                      |
|---------------------|--------------------------------------|
| 01                  | 1 Calibration Certificate (Std)      |
| 02                  | 2 NIST Traceable Calibration Reports |
| 03                  | 3 NIST Traceable Calibration Reports |
| 04                  | 4 NIST Traceable Calibration Reports |
| 05                  | 5 NIST Traceable Calibration Reports |
| 06                  | 6 NIST Traceable Calibration Reports |
| 07                  | 7 NIST Traceable Calibration Reports |
| 08                  | 8 NIST Traceable Calibration Reports |

| Digital |             |
|---------|-------------|
| 01      | RS232 (std) |
| 02      | RS485       |

| Calibration Type |                    |
|------------------|--------------------|
| 01               | NIST 5 Point (std) |
| 02               | NIST 10 Point      |
| 03               | NIST 20 Point      |

| Display |                     |
|---------|---------------------|
| 01      | Touchscreen Display |
| 02      | No Display (std)    |

## 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

## Selection Chart - HFM-D-305A & HFC-D-307A

| For Models |  | Circuit Board | Output | Fittings | Seals | Working Pressure | Calibration Type | Digital |
|------------|--|---------------|--------|----------|-------|------------------|------------------|---------|
| HFM-D-305A |  |               |        |          |       |                  |                  |         |
| HFC-D-307A |  |               |        |          |       |                  |                  |         |

| Circuit Board |                 |
|---------------|-----------------|
| 01            | H Pin (Std)     |
| 02            | IP-67 Enclosure |

| Output |                |
|--------|----------------|
| 01     | 0-5 volt (Std) |
| 02     | 0-10 volt      |
| 03     | 4-20 mA        |
| 04     | 0-20 mA        |

| Fittings |                   |
|----------|-------------------|
| 01       | 1" VCR®           |
| 02       | 1" Swagelok (Std) |
| 03       | 1" VCO®           |
| 04       | 25 mm Swagelok    |

| Seals |              |
|-------|--------------|
| 01    | Viton® (Std) |
| 02    | Kalrez®      |
| 03    | Neoprene     |
| 04    | Buna-N       |

| Calibration Type |                                           |
|------------------|-------------------------------------------|
| 01               | 1 NIST Traceable Calibration Report (Std) |
| 02               | 2 NIST Traceable Calibration Reports      |
| 03               | 3 NIST Traceable Calibration Reports      |
| 04               | 4 NIST Traceable Calibration Reports      |
| 05               | 5 NIST Traceable Calibration Reports      |
| 06               | 6 NIST Traceable Calibration Reports      |
| 07               | 7 NIST Traceable Calibration Reports      |
| 08               | 8 NIST Traceable Calibration Reports      |

| Digital |             |
|---------|-------------|
| 01      | RS232 (std) |
| 02      | RS485       |

| Working Pressure |                    |
|------------------|--------------------|
| 01               | 500 psig max (Std) |

**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

## Selection Chart - HFM-D-305B & HFC-D-307B

| For Models |  | Output | Fittings | Seals | Working Pressure | Calibration Records | Digital | Calibration Type | Display |
|------------|--|--------|----------|-------|------------------|---------------------|---------|------------------|---------|
| HFM-D-305B |  |        |          |       |                  |                     |         |                  |         |
| HFC-D-307B |  |        |          |       |                  |                     |         |                  |         |

| Output |                |
|--------|----------------|
| 01     | 0-5 volt (Std) |
| 02     | 0-10 volt      |
| 03     | 4-20 mA        |
| 04     | 0-20 mA        |

| Fittings |                   |
|----------|-------------------|
| 01       | 1" VCR®           |
| 02       | 1" Swagelok (Std) |
| 03       | 1" VCO®           |
| 04       | 25 mm Swagelok    |

| Seals |              |
|-------|--------------|
| 01    | Viton® (Std) |
| 02    | Kalrez®      |
| 03    | Neoprene     |
| 04    | Buna-N       |

| Working Pressure |                    |
|------------------|--------------------|
| 01               | 500 psig max (Std) |

| Calibration Records |                                      |
|---------------------|--------------------------------------|
| 01                  | 1 Calibration Certificate (Std)      |
| 02                  | 2 NIST Traceable Calibration Reports |
| 03                  | 3 NIST Traceable Calibration Reports |
| 04                  | 4 NIST Traceable Calibration Reports |
| 05                  | 5 NIST Traceable Calibration Reports |
| 06                  | 6 NIST Traceable Calibration Reports |
| 07                  | 7 NIST Traceable Calibration Reports |
| 08                  | 8 NIST Traceable Calibration Reports |

| Digital |             |
|---------|-------------|
| 01      | RS232 (std) |
| 02      | RS485       |

| Calibration Type |                         |
|------------------|-------------------------|
| 01               | NIST 5 Point (Standard) |
| 02               | NIST 10 Point           |
| 03               | NIST 20 Point           |

| Display |                       |
|---------|-----------------------|
| 01      | Touchscreen Display   |
| 02      | No Display (Standard) |

| Range Information for all Instruments                                                                                                                      |       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Each calibration will require the following information:                                                                                                   |       |
| Range                                                                                                                                                      | _____ |
| Flow Units                                                                                                                                                 | _____ |
| Gas                                                                                                                                                        | _____ |
| For the HFC Instruments also                                                                                                                               |       |
| Upstream Pressure                                                                                                                                          | _____ |
| <i>(maximum &amp; minimum)</i>                                                                                                                             |       |
| Downstream Pressure                                                                                                                                        | _____ |
| <i>(maximum &amp; minimum)</i>                                                                                                                             |       |
| Does the downstream pressure change with flowrate? Y/N                                                                                                     | _____ |
| For volumetric units the standard temperature and pressure of the unit is also required<br>0°C & 760 Torr will be used when other values are not specified |       |

## Power Supplies & Accessories



### THCD-100 Single Channel Power Supply Meter

**THCD-100**

Includes brackets, connectors, and backshells



### 24 VDC Switching Power Supply

**12-01-169**

For use with "B" Series or THCD-100  
(Please specify AC Input Clip)



### Connects Hastings Power Supply (15-pin) to 300 "A" Series (15-pin)

**AF-8-AM**

8' Cable (~2.4m) Other lengths available



### Connects Hastings Power Supply (15-pin) to 300 "B" Series (9-pin)

**CB-AF-8-24VM**

8' Cable (~2.4m) Other lengths available



### "A" Series—IP-67 Cables

**CB-12PCF-8-LDS** (Bare Leads)  
**CB-12PCF-8-AM** (Hastings Power Supply)

8' Cable (~2.4m) Other lengths available



### "B" Series—Serial Communication Cable

**CB-RS232-TRRS**

RS232 Cable (9-pin "D" Female to Male TRRS)  
6' Cable (~1.8m)



### "A" Series—Serial Communication Cable

**CB-RS232-RJ12**

RS232 Cable (9-pin "D" Female to RJ12)  
14' (~4.3m)