Low Flow

0~25 SLM Digital Mass Flow Meter / Controller

HFM-D-300B Mass Flow Meter / HFC-D-302B Mass Flow Controller



Digital HFM 300B / HFC 302B 는
Teledyne Hastings 사의 300 시리즈 센서를 사용합니다.
0~5 sccm 부터 0~25 slm(N_2) 구간에서
높은 정확도 ±(0.5% Rd + 0.2% F.S)를 구현합니다.
전면부의 컬러 터치 스크린 디스플레이로
유량을 측정 및 제어 할 수 있습니다.
24 VDC Jack 에 간단히 전원만 공급하면,
가스 유량의 측정 및 제어가 가능합니다.
Power Supply 및 Display 장치, Lead Line 등이
필요없이 단일 제품만으로도 사용이 가능합니다.
Data Logging Software 를 기본 제공해 드립니다.

Features (특징)

- Range 0~5 sccm to 0~25 slm (N_2 Equivalent)
- All-Metal Seals
- Touchscreen Display /Control Option
- Status LEDs
- Auto-Zero (HFC-D-302 Controller Only)
- Totalizer
- Large Diameter Sensor Tube (Low dp)
- Low Wetted Surface Area
- Operating Pressures to 500 psi or higher
- NIST Traceable Calibration

Applications and Industries (응용 분야)

- Leak Testing
- High Purity Gas Delivery
- Thin Film Deposition
- Gas Blending
- Pharmaceutical
- Fuel Cell R&D
- Environmental Monitoring
- Medical Research

Flow Unit (유량 단위)

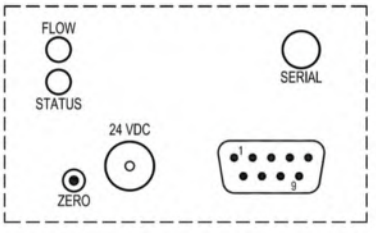
기준 STP : 0℃ & 760 Torr / N_2

SLM	0.005 ~ 25
SCCM	5 ~ 25,000
SCFH	0.01 ~ 52.97
Kg/Hr	~ 1.87
SM3/H	~ 1.5
Mole/Hr	0.01 ~ 66.92

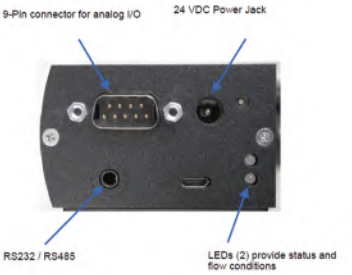
Specifications

	HFM-D-300B (Meter)	HFC-D-302B (Controller)
Range	0~5 sccm to 0~25 slm (N_2)	0~5 sccm to 0~25 slm (N_2)
Accuracy	±(0.5% of reading +0.2% of full scale)	±(0.5% of reading +0.2% of full scale)
Repeatability	±0.15% of F.S	±0.15% of F.S
Maximum Working Pressure	500 psig (optional 1000 psig)	500 psig (optional 1000 psig)
Operating Temperature	-20~70℃	-20~70℃
Warm up time	30 min for optimum accuracy (typical)	30 min for optimum accuracy (typical)
	6min within rated accuracy (typical)	6min within rated accuracy (typical)
Settling Time	Typically ≤ 1 seconds	Typically < 1~2 seconds
Temperature Coefficient of Zero	<±0.2% / ℃ of full scale max (-20~70℃)	N/A for controller with auto-zero enabled
Temperature Coefficient of Span	<±0.1% / ℃ of full scale max (-20~70℃)	<±0.1% / ℃ of full scale max (-20~70℃)
Attitude Sensitivity of Zero	<1.4% of full scale (N_2 @ 50 psig)	<1.4% of full scale before autozero
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, 304 SS, 302 SS	316L SS, Nickel 200, 304 SS, 302 SS, Kalrez® (valve seat)
Weight (approx.)	2.2 lb. (1.0kg)	2.7 lb. (1.2kg)
Analog Connector	9 Pin D-sub	9 Pin D-sub
Digital Connector	Bayonet, 4-conductor TRRS 3.5mm jack	Bayonet, 4-conductor TRRS 3.5mm jack
Power Requirements (w/ display)	11~36 VDC @ 4.6 Watt (max)	11~36 VDC @ 8.2 Watt (max)*
	Unipolar or Bipolar (e.g.±15 VDC, ±12 VDC)	Unipolar or Bipolar (e.g.±15 VDC, ±12 VDC)
		*15 VDC min reqd. for 0~20 & 4~20 mA operation

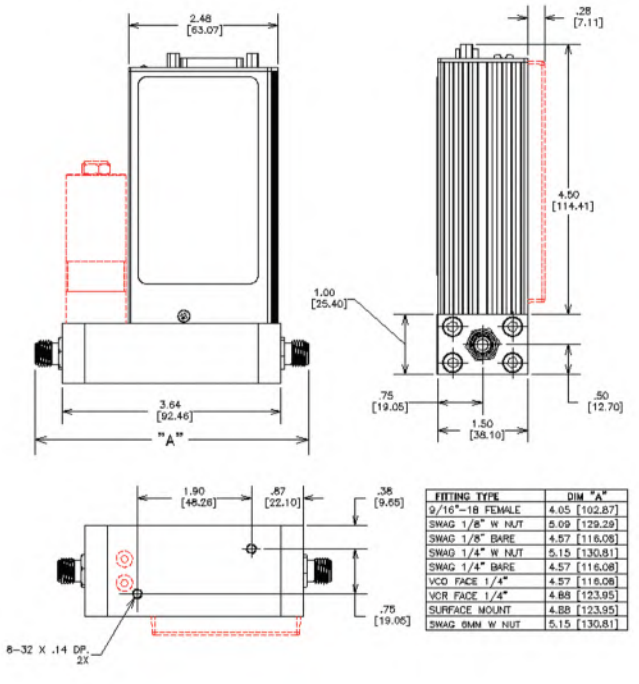
Pin Map



Pin #	
1	External Input
2	Signal Output
3	Set point Input
4	Power Common
5	NC
6	Valve Override
7	24V Power
8	Signal Common
9	Ground

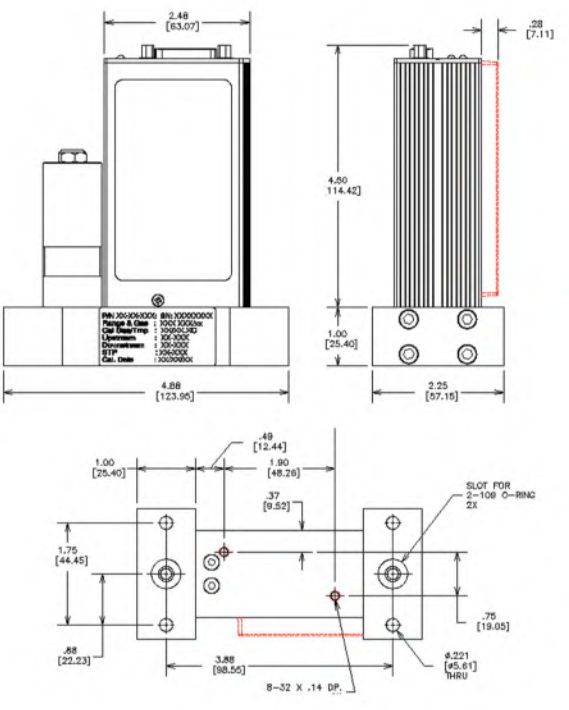


Outline Drawings



FITTING TYPE	DIM "A"
9/16"-18 FEMALE	4.05 [102.87]
SWAG 1/8" W NUT	5.09 [129.29]
SWAG 1/8" BARE	4.57 [116.08]
SWAG 1/4" W NUT	5.15 [130.81]
SWAG 1/4" BARE	4.57 [116.08]
VCO FACE 1/4"	4.57 [116.08]
VCR FACE 1/4"	4.88 [123.95]
SURFACE MOUNT	4.88 [123.95]
SWAG 6MM W NUT	5.15 [130.81]

Outline Drawings (Surface Mount)



Selection chart

Input/Output	
01	0-5 VDC (Std)
02	0-10 VDC
03	4-20 mA
04	0-20 mA

Working Pressure	
01	500 psig (Std)
02	1000 psig (1500 proof)

Digital	
01	RS232 (Std)
02	RS485

Display	
01	Touchscreen Display
02	No Display (Std)

Fittings	
01	1/4" VCR®
02	1/4" Swagelok (Std)
03	1/8" Swagelok
04	1/4" VCO®
05	9/16 - 18 Female ST
06	Surface mount
07	6mm Swagelok (non-weld)

Calibration Records	
01	1 NIST Traceable Cal Reports
02	2 NIST Traceable Cal Reports
03	3 NIST Traceable Cal Reports
04	4 NIST Traceable Cal Reports
05	5 NIST Traceable Cal Reports
06	6 NIST Traceable Cal Reports
07	7 NIST Traceable Cal Reports
08	8 NIST Traceable Cal Reports

Calibration Type	
01	NIST 5 Point (Std)
02	NIST 10 Point
03	NIST 20 Point

Model No.	Input / Output	Fittings	Working Pressure	Cal Records	Digital	Cal Type	Display
HFM-D-300B HFC-D-302B							