

High-Flow Gas Mass Flow Meters with Digital Display

FEATURES

- Direct monitoring of mass flow rate eliminates need for ancillary pressure and temperature sensing
- Digital display of mass flow rate on flow body or remote version for panel mounting
- Aluminum flow body accommodates most gases in flow rates up to 175 slpm
- Electronic output of mass flow rate available for control or data-logging
- Large, straight sensor tube reduces contamination and maintenance down-time
- Platinum sensor eliminates zero-drift and ensures long-term repeatability
- Primary standard calibration ensures starting point accuracy and NIST traceability
- CE Approved

826/827
TopTrak[®]



DESCRIPTION

Sierra Instruments' 826/827 High-Flow TopTrak[®] accurately measures the mass flow rate of most clean gases. Available in flow ranges from 0 to 75 slpm up to 0 to 175 slpm. Wetted surfaces are anodized aluminum with Viton[®] "O" rings, and all are corrosion-resistant.

The 826/827 measures and displays the mass flow rate directly in sccm or slpm. The instrument is available with or without a digital display, which is tiltable over 180° for easy viewing and can be removed for remote panel mounting. A 0 to 5 VDC or 4 to 20 mA output signal linearly proportional to gas mass flow rate is provided for recording, data-logging or control. A 9-pin "D" connector for the output signal, input power, and remote display drive is standard.

TopTrak's performance is unsurpassed: accuracy is 1.5% of full scale over a wide temperature and pressure range, and time response is two seconds to within 2% of final flow. This device is widely used in a variety of flow validation and calibration applications, by dozens of instrument OEMs, and in a multitude of laboratory, test and analytical operations.



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PERFORMANCE SPECIFICATIONS

Accuracy

+/- 1.5% of Full Scale under calibration conditions including linearity over 59°F to 77°F (15°C to 25°C) and 5 to 60 psia (0.3 to 4 bara)

Operating Pressure			
Inlet Pressure Deviation ²	50 psig	100 psig	150 psig
± 1 psig	± 1.5% of full scale	± 1.5% of full scale	± 1.5% of full scale
± 5 psig	± 3.8% of full scale	± 4.5% of full scale	± 5.3% of full scale
± 10 psig	± 6% of full scale	± 7.5% of full scale	± 9% of full scale

Repeatability

+/- 0.5% of full scale

Temperature Coefficient

0.08% of full scale per °F (0.15% of full scale per °C), or better

Pressure Coefficient

0.01% of full scale per psi (0.15% of full scale per bar), or better

Response Time

800 ms time constant; six seconds (typical) to within +/- 2% of final value over 25 to 100% of full scale

OPERATING SPECIFICATIONS

Gases

Most gases; check compatibility with wetted materials; specify when ordering

Mass Flow Rates

0 to 75 up to 0 to 175 slpm; flow range is for an equivalent flow of nitrogen at 760 mm Hg and 21°C (70°F); other ranges in other units are available (e.g., scfh or nm³/h)

Gas Pressure

150 psig (10 barg) maximum
20 psig (1.4 barg) optimum

Pressure Drop

15.0 mbar at 75 slpm
67.8 mbar at 175 slpm

Gas & Ambient Temperature

32 to 122°F (0 to 50°C)

Leak Integrity

1 X 10⁻⁴ atm cc/sec of helium maximum

Power Requirements

12 to 18 VDC, 15 VDC nominal, 100 mA maximum
24 VDC optional

Output Signal

Linear 0 to 5 VDC, 1000 ohms minimum load resistance
Linear 4 to 20 mA, 500 ohms maximum loop resistance

Display

3.5 digit LCD (0.6 in H); removable for remote mounting

OPERATING SPECIFICATIONS

Wetted Material

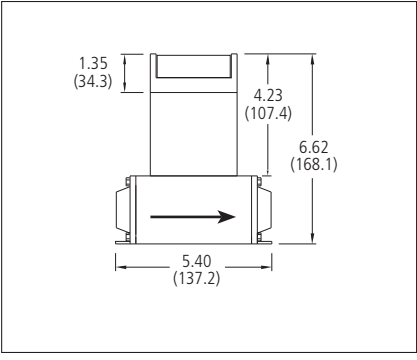
Anodized aluminum, 316 stainless steel, nickel plating, Viton® "O"-rings standard; Neoprene and 4079 Kalrez® "O"-rings optional

Straight Pipe Length Requirements (In Number of Internal Diameters, D)	
1/2 inch Female NPT, minimum, upstream	10 D
1/2 inch Female NPT, minimum, downstream	5 D

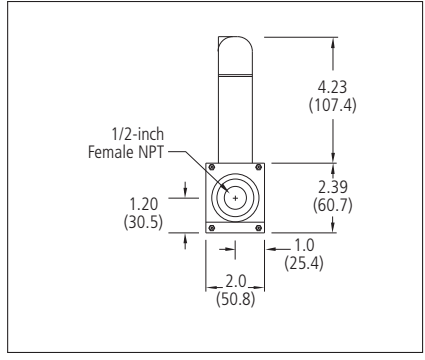
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DIMENSIONS

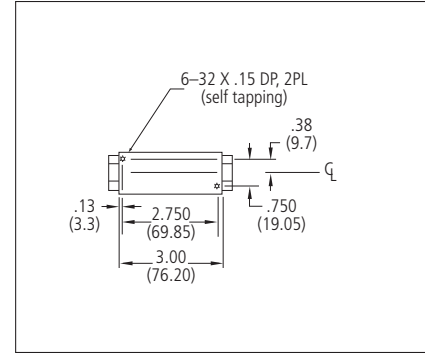
826—Side View



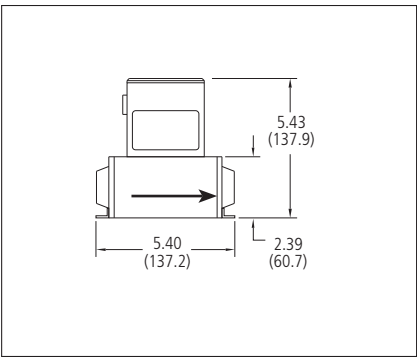
826—Outlet View



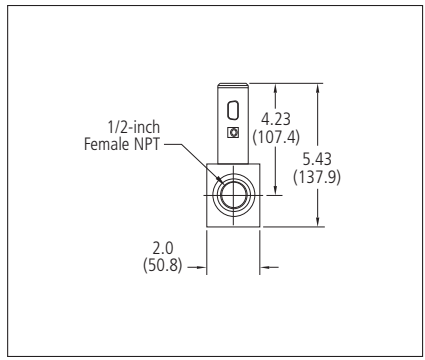
826—Bottom View



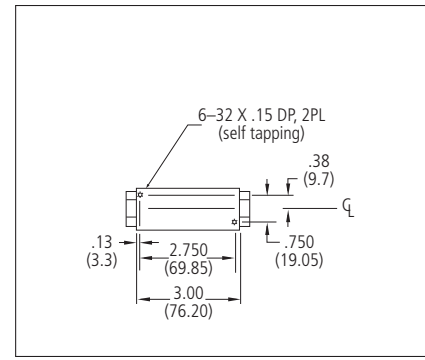
827—Side View



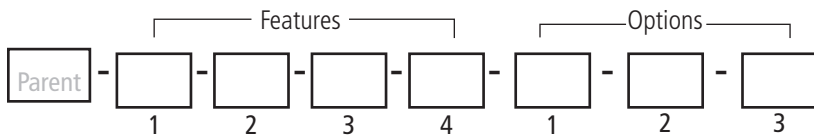
827—Outlet View



827—Bottom View



All dimensions are inches and in parentheses are millimeters. Certified drawings are available on request.



Instructions: To order the 826/827 please fill in each number block by selecting the codes from the corresponding features below and following pages.

Parent Number	
826	TopTrak® Hi-Flow Mass Flow Meter with Display Remember this meter requires 10 diameters up-stream and 5 downstream for optimum performance. Flow body constructed of aluminum, with Viton® "O" rings and 316 stainless steel sensor. 3.5 digit LCD display. Linear, 0-5 VDC output signal; input power 12-15 VDC. 1/2-inch FNPT inlet/outlet fittings. 9-pin "D" mating connector. Calibrated for flow ranges from 0-75 slpm up to 0-175 slpm equivalent nitrogen flow; +/- 1.5% full scale accuracy; maximum temperature 122°F (50°C); maximum pressure 150 psig (10.3 barg). CE Approved.
827	TopTrak® Hi-Flow Mass Flow Meter. Same as above with no display.

Note: All slpm flow ranges also available in nlpm. You must select Low Flow Calibration under "Options" for 0-20 sccm full scale flow range or less. Model 826 and 827 require upstream and downstream straight, non restricted 1/2" pieces of pipe. See Instruction Manual for specifics on straight run requirements for the Models 826 and 827 only.

Feature 1 : Fittings	
1	1/8-inch compression for 822, 824 (maximum flow 5 slpm)
2	1/4-inch compression for 822, 824 (maximum flow 50 slpm)
3	3/8-inch compression for 822, 824
5	1/4-inch VCO for 822, 824 (maximum flow 50 slpm)
8	1/4-inch VCR for 822, 824 (maximum flow 50 slpm)
10	6 mm compression for 822, 824 (maximum flow 50 slpm)
11	10 mm compression for 822, 824
13	1/4-inch Female NPT for 822, 824
NX	1/2-inch Female NPT for 826, 827 only

Option 3: Display	
RD()	Remote display. Maximum 100 feet available on models 822 or 826. Specify cable length in parentheses, \$1 per foot. Instruments ordered with remote display are not CE compliant.
T	Totalizer and actual flow in display

Feature 2: Elastomers	
OV1	Viton®

Feature 3: Input Power	
PV1	12-15 VDC (see accessories for optional power supply)
PV2	24 VDC (customer must supply 24 VDC power)

Feature 4: Output Signal	
V1	0-5 VDC, linear
V4	4-20 mA, linear

Option 1: Special Cals	
MP	Medium pressure calibration (40-150 psig (2.8-10.3 barg))
LF	Low flow calibration (required for 0-20 sccm full scale flow range or less)

Option 2: Certificates	
CC	Certificate of conformance