

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



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TopTrak[®] 826/827



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.

The information contained herein is subject to change without notice.

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

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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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)

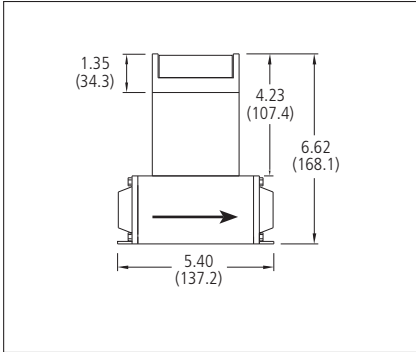
Leak Integrity

1 X 10⁻⁴ atm cc/sec of helium maximum

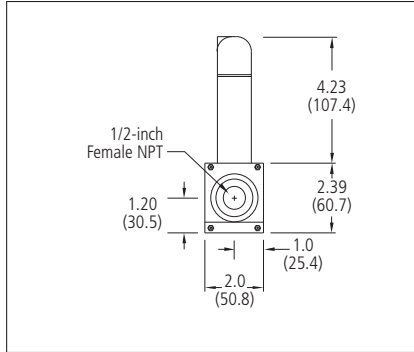
Power Requirements

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

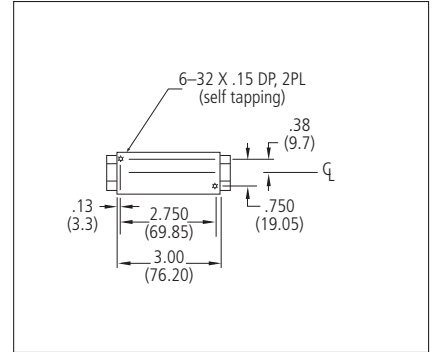
826—Side View



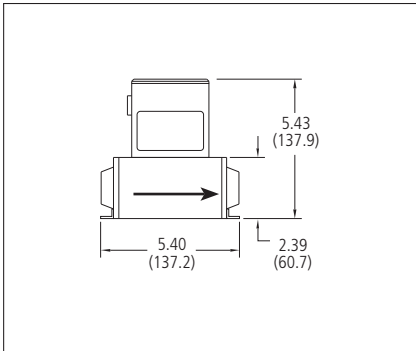
826—Outlet View



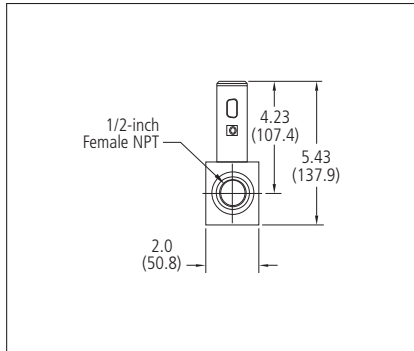
826—Bottom View



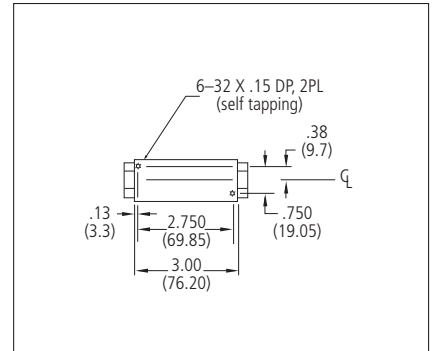
827—Side View



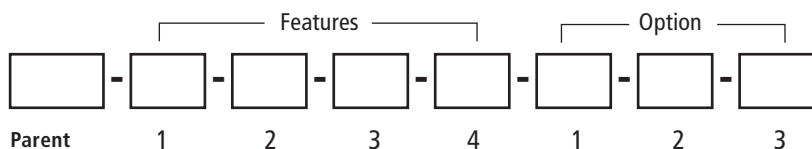
827—Outlet View



827—Bottom View



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



Instructions: To order a 826/827 UHP 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	
0	Customer supplies 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

Feature 2: Elastomers	
OV1	Viton®

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

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

Option 3: Display	
RD(50)	Remote display. Instruments ordered with remote display are not CE compliant.