Mass-Trak® Model 810C

Low-Cost Mass Flow Controllers for Gas with Digital Display

Features

- **All the performance features of a standard MFC at an affordable price!**
- **On-board display and local set point control eliminates need for external electronics**
- **Switch-selectable remote set point interfaces easily with PLC or workstation**
- **Large, straight sensor tube reduces contamination and maintenance down-time**
- **Platinum sensor eliminates zero-drift and ensures long-term repeatability**
- **Fast-response control valve provides quick response to set point changes**
- **Primary standard calibration ensures starting point accuracy and NIST traceability**
- **CE Approved**

SIERRA® INSTRUMENTS
THE MASS FLOW COMPANY

ISO REGISTERED 9001

For information online...
www.sierrainstruments.com

Description

Sierra Instruments' Model 810C Mass-Trak™ offers exceptional mass flow control capabilities at an attractive price. Available in any range from 0 to 10 sccm to 0 to 50 slpm, the Model 810C is suitable for any clean, non-corrosive gas flow control application.

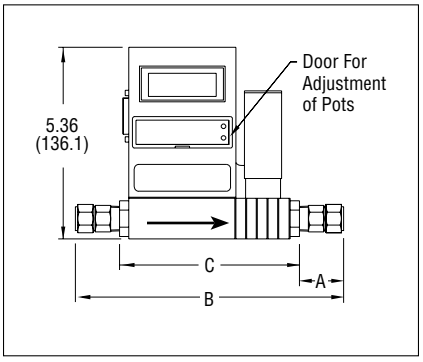
Mass-Trak's on-board display and local set point potentiometer allows for adjustment of the command signal from the face of the instrument enclosure and eliminates the need for external readout/set point electronics. The instrument also offers a switch-selectable remote set point capability from either a 4–20 mA or 0–5 VDC command signal, which can be easily interfaced with a process control system or workstation.

The instruments' built-in, electromagnetic, servo-control valve offers both a purge mode and a valve-close command from an external contact, a fast response to set point changes and a .25% repeatability specification.

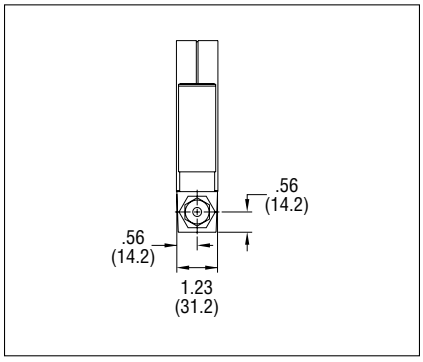
Designed to reduce costs in analytical, laboratory and OEM instrument applications, Mass-Trak™ provides all the performance features of a standard mass flow controller at an affordable price!

Dimensional Specifications

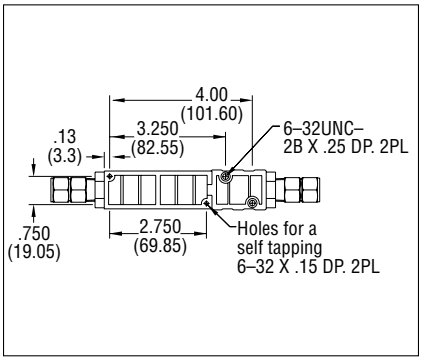
Model 810C–Side View



Model 810C–Outlet View



Model 810C –Bottom View



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

	FITTING SIZE		
	1/8-inch Compression	1/4-inch Compression	1/4-inch NPT
Dim. A	1.01 (25.7)	1.09 (27.7)	—
Dim. B	7.01 (178.1)	7.19 (182.6)	—
Dim. C	5.00 (127.00)	5.00 (127.00)	5.00 (127.00)

Performance Specifications

Accuracy
± 1.5% of full scale including linearity over 60° to 80°F (15° to 25°C) and 5 to 60 psia (0.3 to 4 bara) If the instrument is mounted with a vertical (up or down) flow path the folowing accuracy de-rating applies:

Notes: (1) Do not exceed 150 psig.

	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

(2) Difference between inlet pressure and calibrated pressure. Do not exceed ± 10 psig.

Repeatability
± .25% 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 (e.g., air, nitrogen, carbon dioxide, argon, methane, hydrogen, helium); check compatibility with wetted materials; specify when ordering

Mass Flow Rates
0 to 10 sccm to 0 to 50 slpm; flow ranges specified are 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 nm^3/h)

Gas Pressure
150 psig (10 barg) maximum;
20 psig (1.4 barg) optimum

Differential Pressure Requirement
15 to 50 psi (1.0 to 3.4 bar) optimum

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
24 VDC ±10%, 350 mA, regulated

Control Range
Calibrated for 2–100% of full scale floww
Automatic shut-off at 0.5 - 3.0% of full scale

Output Signal
Linear 0–5 VDC, 2000 ohms minimum load resistance
Linear 0–10 VDC, 2000 ohms minimum load resistance optional
Linear 4–20 mA, 1000 ohms maximum loop resistance for 24 VDC supply (500 ohms for 15 VDC supply)

Command Signal
Local . . . . . Potentiometer
Remote . . . . . Switch selectable 0–5 VDC or 4–20 mA

Controls
Local set point potentiometer
Zero potentiometer
Valve is closed when power is off

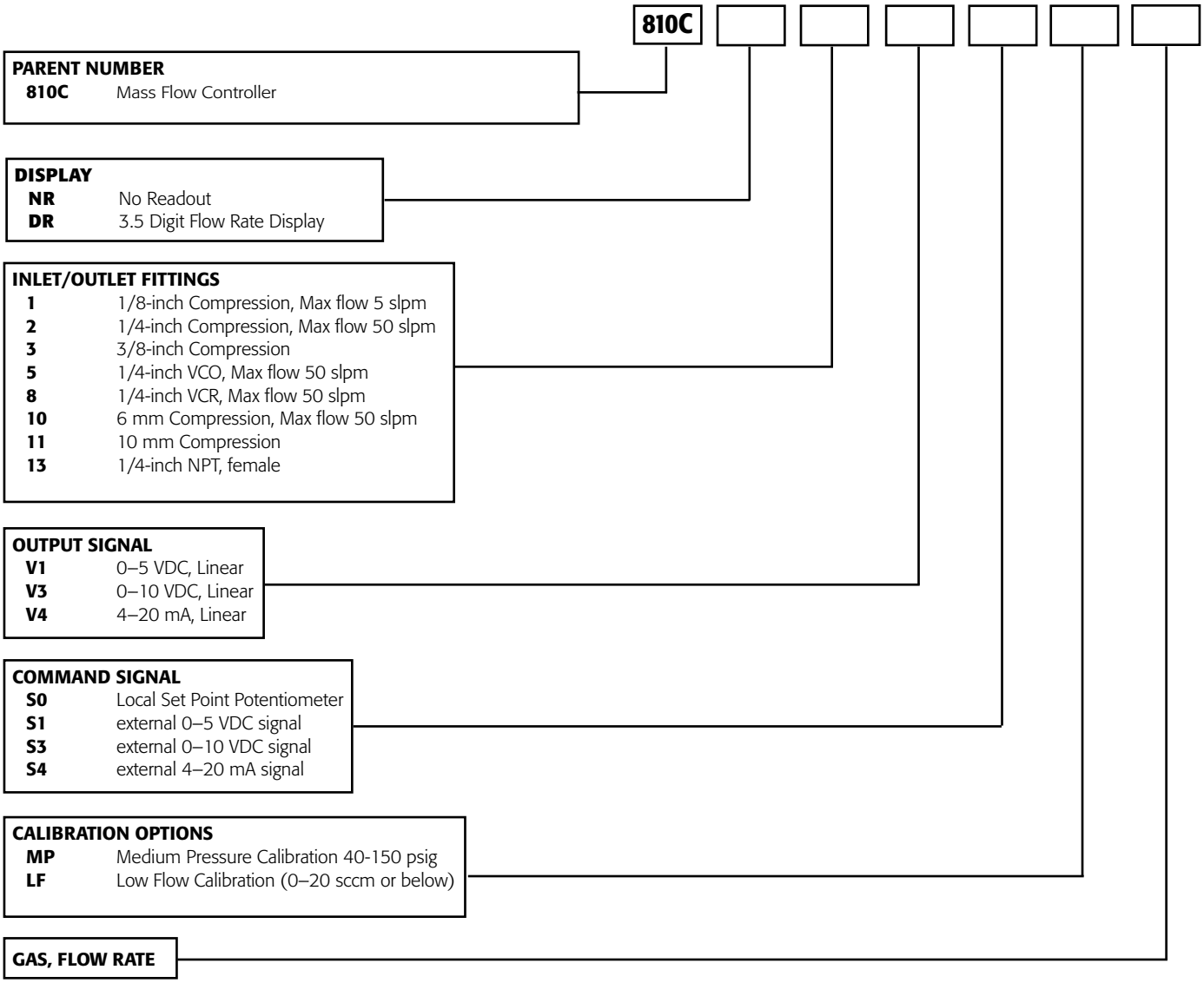
Display
3.5 digit LCD

Physical Specifications

Wetted Material
10% glass-filled Nylon® 6/6; 316 stainless steel; 430F stainless steel; nickel plating; Viton® "O"-rings

® Nylon, Viton, Neoprene, Kalrez, and Teflon are registered trademarks of DuPont.

Ordering the Model 810C



ACCESSORIES (Consult Factory)
CONNECTORS AND CABLES (Consult Factory)

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THE MASS FLOW COMPANY

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