

## 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



For information online...  
[www.sierrainstruments.com](http://www.sierrainstruments.com)

# MassTrak<sup>®</sup> 810C



### Description

Sierra Instruments' Mass-Trak<sup>®</sup> Model 810C 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.

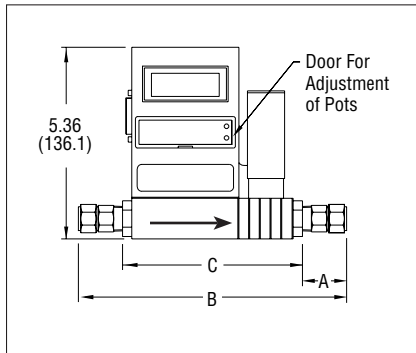
The instrument also offers a switch-selectable remote set point capability from either a 4 to 20 mA or 0 to 5 VDC command signal, which can be easily interfaced with a process control system or workstation.

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 0.25% repeatability specification.

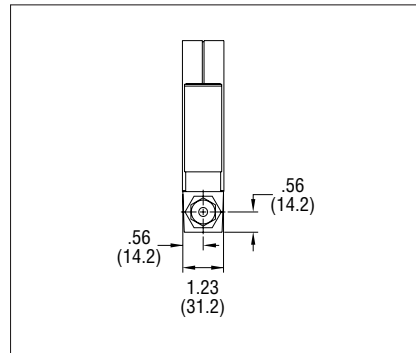
Designed to reduce costs in analytical, laboratory and OEM instrument applications, Mass-Trak provides all the performance features of a standard mass flow controller at an affordable price!

## Dimensional Specifications

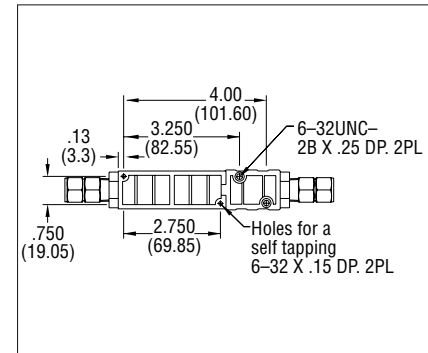
**Model 810C – Front View**



**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
<b>Dim. A</b>	1.01 (25.7)	1.09 (27.7)	—
<b>Dim. B</b>	7.01 (178.1)	7.19 (182.6)	—
<b>Dim. C</b>	5.00 (127.00)	5.00 (127.00)	5.00 (127.00)

## Performance Specifications

### Accuracy

+/- 1.5% of Full Scale under calibration conditions 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 following accuracy de-rating applies:

Inlet Pressure Deviation <sup>2</sup>	OPERATING PRESSURE		
	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

Notes:

(1) Do not exceed 150 psig.

(2) Difference between inlet pressure and calibrated pressure. Do not exceed +/- 10 psig.

### Repeatability

+/- 0.25% 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

## Operating Specifications

### Gases

Most gases (e.g., air, nitrogen, carbon dioxide, argon, methane, hydrogen, helium); check compatibility with wetted materials; specify when ordering

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

+/- 2% of final value over 25 to 100% of Full Scale

### 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<sup>3</sup>/h)

### Gas Pressure

150 psig (10 barg) maximum

20 psig (1.4 barg) optimum

### Differential Pressure Requirements (psid)

Flowrate (slpm)	Minimum	Maximum
0.01	0.186031	50
0.5	0.72252	50
1	2	50
5	5	50
10	7	50
15	8	50
50	9.1	50

### Gas & Ambient Temperature

32 to 122°F (0 to 50°C)

### Leak Integrity

1 X 10<sup>-4</sup> atm cc/sec of helium maximum

### Power Requirements

24 VDC +/-10%, 350 mA, regulated

### Control Range

Calibrated for 2 to 100% of Full Scale floww

Automatic shut-off at 0.5 to 3.0% of Full Scale

### Output Signal

Linear 0 to 5 VDC, 2000 ohms minimum load resistance

Linear 0 to 10 VDC, 2000 ohms minimum load resistance optional

Linear 4 to 20 mA, 1000 ohms maximum loop resistance for 24 VDC supply

### Command Signal

Local . . . . . Potentiometer

Remote . . . . . Switch selectable 0 to 5 VDC or 4 to 20 mA

### Controls

Local set point potentiometer

Zero potentiometer

Valve is closed when power is off

### Display

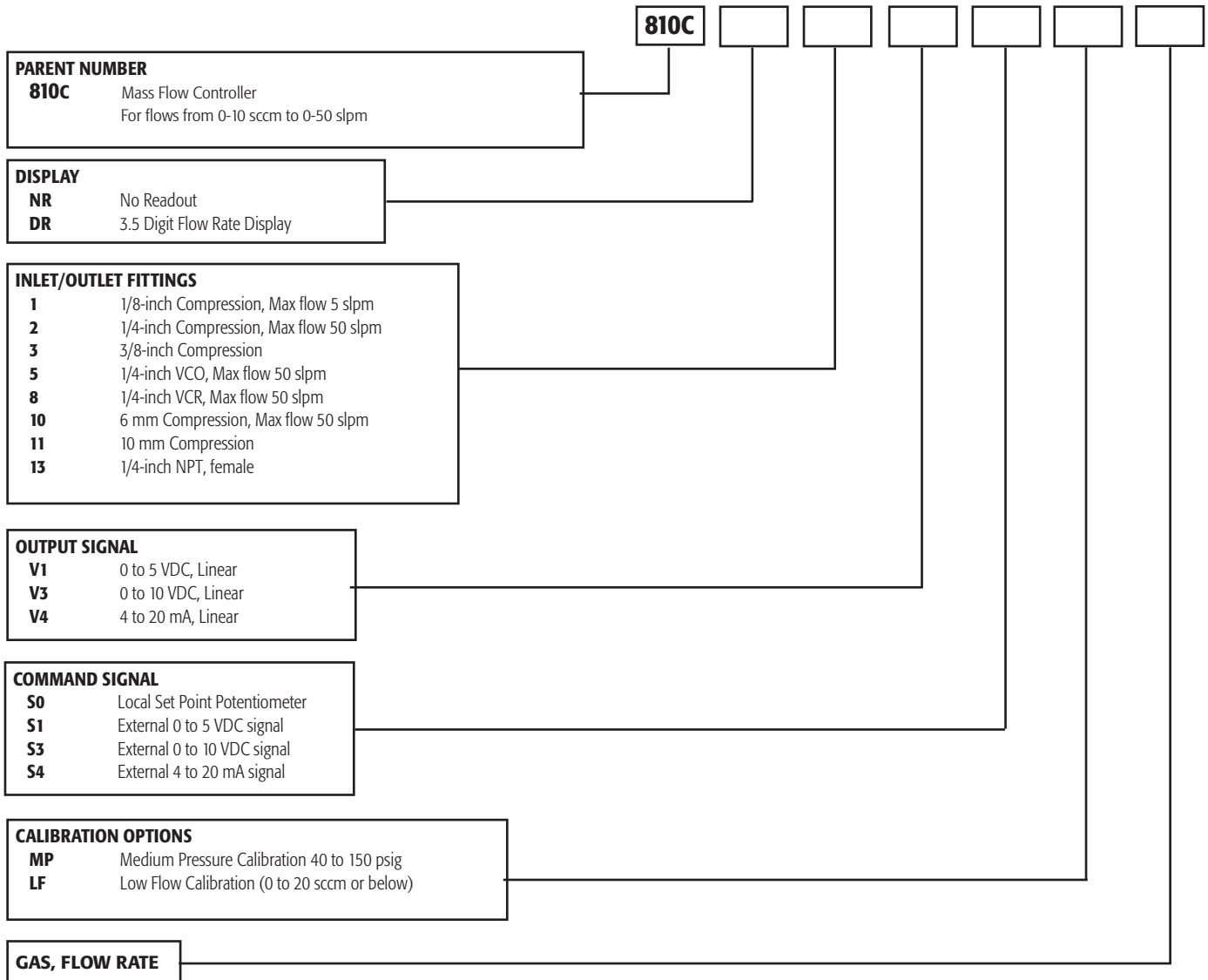
3.5 digit LCD

## Physical Specifications

### Wetted Material

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

## Ordering the Model 810C



ACCESSORIES (Consult Factory)

CONNECTORS AND CABLES (Consult Factory)

