

Fast Response, High-Performance, Smart Insertion Gas Mass Flow Meter

Features

- Fast response flow meter optimized for natural gas or propane measurement applications
- Programmable pulse output for remote totalization
- Optional Modbus communication
- Smart electronics permit field adjustment of critical flow meter settings
- Field validation of flow meter calibration
- 200 millisecond response to changes in flow rate
- Outstanding rangeability
- 2 x 12 backlit LCD display totalizer values along with instantaneous flow display
- Minimal flow blockage and low pressure drop
- CE approved



BOILER-TRAK™

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Description

Sierra Instruments' Boiler-Trak™ Smart Insertion Mass Flow Meter provides an optimized solution for natural gas or propane flow measurement applications. Boiler-Trak is designed to provide an economical solution to new regulations for the burning of natural gas in heaters and boilers. The meter's sensor offers long-term reliability and a 200 millisecond response to changes in flow rate.

The versatile microprocessor-based transmitter integrates the functions of flow-range adjustment, meter validation and diagnostics in a probe-mounted NEMA 4X (IP65) housing. Mass flow rate and totalized flow, as well as other configuration variables, are displayed on the meter's 2 x 12 backlit LCD panel.

The meter also provides an optical/galvanic isolated 4-20 mA output and two alarm outputs along with a programmable pulse output for remote totalization. An optional Modbus Communications package is also available. The programmable transmitter is easily configured via RS 232 and Sierra's Smart Interface™ Windows™-based software or three push buttons in the device. Boiler-Trak is suitable for pipes or ducts from 1.25 to 6 inches.

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Performance Specifications

Accuracy of Point Velocity

± 1% of full scale (actual gas calibration)
 ± 1% of full scale ± 3% of reading (correlation)

Repeatability

± 0.2% of full scale

Temperature Coefficient

± 0.02% of reading per °F within ± 50°F of customer specified conditions
 ± 0.03% of reading per °F within ± 50°F to 100°F of customer specified conditions
 ± 0.04% of reading per °C within ± 25°C of customer specified conditions
 ± 0.06% of reading per °C within ± 25°C to 50°C of customer specified conditions

Pressure Coefficient

.02% per psi for natural gas

Response Time

200 milliseconds to 63% of final velocity value

Operating Specifications

Gases

Natural gas, Propane, Methan c

Gas Pressure

0 psig to 30 psig *Note: actual gas calibration limited to 30 psig

Pressure Drop

Negligible

Gas & Ambient Temperature

Gas 50°F to 100°F *Note: actual gas calibration limited to 50°F to 100°F
 Ambient 32° to 120°F

Power Requirements

15 to 18 VDC (regulated), 625 mA maximum

*Note: no other option available due to safety consideration

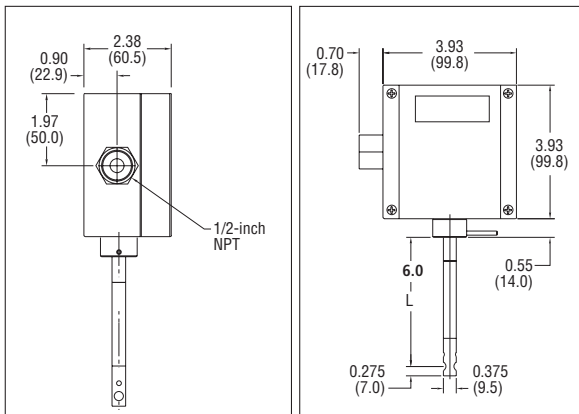
Output Signal

Linear 0–5 VDC and 4–20 mA proportional to mass flow rate. *Modbus Optional

Dimensional Specifications

NEMA 4X–Side View (EN2)

NEMA 4X–Front View (EN2)



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

Maximum Allowable Calibrated Flow Rates

In various sizes of schedule 40 piping - STP= 70°F, 1 atm	
1.25"	80 SCFM
1.5"	110 SCFM
2"	185 SCFM
2.5"	265 SCFM
3"	410 SCFM
4"	705 SCFM
6"	1600 SCFM

Note: Desired flow rate must be less or equal to above rates

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Operating Specifications (cont.)

Alarms

Hard contact user-adjustable high and low
 Dead band adjustable with Smart Interface™ software
 Relay ratings Maximum 42 VAC or 42 VDC, 140 mA

Displays

Alphanumeric 2 x 12 digit backlit LCD
 Adjustable variables via on-board switches (password protected)
 or with Smart Interface™ software
 Adjustable variables. . Full scale (50 to 100 %)
 Time Response (1 to 7 seconds)
 Correction factor setting (0.5 to 5)
 Zero and span

Totalizer

Eight digits (9,999,999) in engineering units
 Resettable by software, on-board switches or external magnet

Software

Smart Interface™ Windows™-based software
 Minimum 8 MB of RAM, preferred 16 MB of RAM
 RS 232 communication
 Additional features. . . Alarm dead band adjustment
 Low flow cut-off adjustment
 Linearization adjustment
 Save / Load configurations
 Flow meter validation

Physical Specifications

Wetted Material

Probe. 316SS
 Sensor. 304SS, glass coating epoxy

Enclosure

NEMA 4X (IP65) powder-coated cast aluminum

Electrical Connections

One 1/2-inch female NPT

Mounting

3/8-inch tube compression fitting with 1/2-inch male NPT

Certifications

CE approved

Physical Specifications

