

# Natural Gas & Propane Immersible Thermal Gas Mass Flow Meter

## FEATURES

- Fast response flow meter optimized for natural gas or propane measurement applications
- 200 millisecond response to changes in flow rate
- 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
- Outstanding rangeability
- 2 x 12 backlit LCD display totalizer values along with instantaneous flow display
- Minimal flow blockage and low pressure drop
- CE approved



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# BoilerTrak™ 620S-BT



## DESCRIPTION

**S**ierra Instruments' BoilerTrak™ Immersible Thermal Mass Flow Meter provides an optimized solution for natural gas or propane flow measurement applications. BoilerTrak is designed to provide an economical solution to new regulations for the burning of natural gas or propane 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 (supplied with the meter) or three push buttons in the device. Optimized natural and propane measurement for 1, 2, 3, 4 inch sch. 40 pipe sizes.

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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

0.02% of full scale per psi for natural gas / Methane / Propane

### Response Time

200 milliseconds to 63% of final velocity value

## Operating Specifications

### Gases

Natural gas, Propane, Methane

### Gas Pressure

0 psig to 120 psig (0 to 8 barg) Note: actual gas calibration limited to 30 psig (2 barg)

### Pressure Drop

Negligible

### Gas & Ambient Temperature

Gas . . . -40°F to 176°F (-40°C to 80°C)

Note: actual gas calibration limited to 50°F to 100°F (10°C to 38°C)

Ambient . . . -40°F to 120°F (-40°C to 50°C)

### Power Requirements

15-18 VDC (regulated), 625 mA draw maximum - Standard operating input voltage to allow for up to 12,000 SFPM flows

15-24VDC Extended operating input voltage to allow for up to 17,000 SFPM flows at Power input of 18VDC or greater, at <18VDC max flow is 12,000 SFPM.

Note: BoilerTrak is not available in other power configurations due to safety concerns. Older BoilerTraks, which operated at 15-18VDC, must stay at 15-18VDC. You can power our NEW BoilerTraks from 15-24VDC, but you cannot power an old 15-18VDC BT from >18-24VDC or damage will occur.

## Standard Calibrated Flow Rates

In various sizes of schedule 40 piping - STP = 70°F, 1atm (21°C, 101.3 kpa)

1.25"	80 SCFM (2.1 NM <sup>3</sup> /min)
1.5"	110 SCFM (2.9 NM <sup>3</sup> /min)
2"	185 SCFM (4.9 NM <sup>3</sup> /min)
2.5"	265 SCFM (7.0 NM <sup>3</sup> /min)
3"	410 SCFM (10.8 NM <sup>3</sup> /min)
4"	705 SCFM (18.5 NM <sup>3</sup> /min)
6"	1600 SCFM (42.1 NM <sup>3</sup> /min)

## (L) DIMENSIONS

Code	L
L04	4.0 (101.6)
L06	6.0 (152.4)
L09	9.0 (228.6)
L13	13.0 (330.2)

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

## Operating Specifications (cont.)

### Output Signal

Linear 0–5 VDC and 4-20 mA proportional to mass flow rate.

Modbus RTU Digital Communication

### 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 (99,999,999) in engineering units

Resettable by software or on-board switches

### 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 . . . . . glass coating epoxy

### Enclosure

NEMA 4X (IP65) powder-coated cast aluminum

### Electrical Connections

One 1/2-inch female NPT

### Mounting

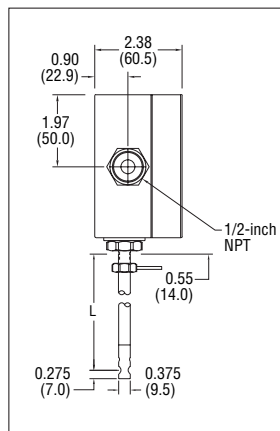
3/8-inch tube compression fitting with 1/2-inch male NPT

### Certifications

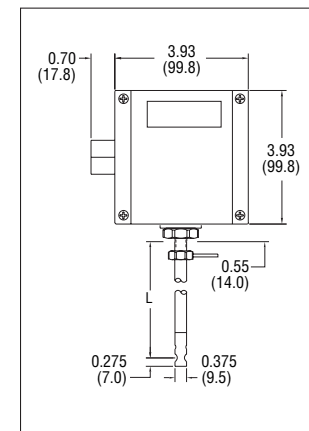
CE approved

## 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.



