Natural Gas & Propane Immersible Thermal Gas Mass Flow Meter

BOILER-TRAK™

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**

SIERRA®

EXPERIENCE OUR PASSION FOR FLOW!

ISO REGISTERED 9001

For information online...

www.sierrainstruments.com

Description

Sierra Instruments' Boiler-Trak™ Immersible Thermal 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 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. Boiler-Trak is suitable for pipes or ducts from 1-inch to 6-inches.

Windows is a registered trademarks of Microsoft.
The information contained herein is subject to change without notice.

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 7 kpa 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 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

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^3/min)
1.5"	110 SCFM (2.9 NM^3/min)
2"	185 SCFM (4.9 NM^3/min)
2.5"	265 SCFM (7.0 NM^3/min)
3"	410 SCFM (10.8 NM^3/min)
4"	705 SCFM (18.5 NM^3/min)
6"	1600 SCFM (42.1 NM^3/min)

Tables

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.)

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 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 . . . . . 304SS, glass coating epoxy

Enclosure
NEMA 4X (IP65) powder-coated cast aluminum

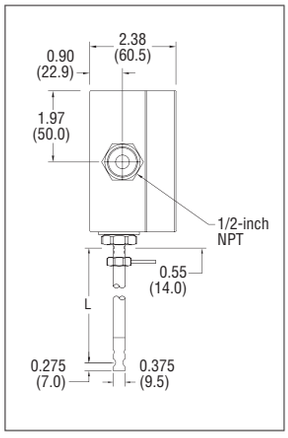
Electrical Connections
One 1/2-inch female NPT

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

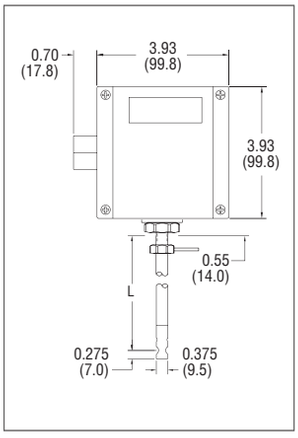
Certifications
CE approved

Dimensional Specifications

NEMA 4X–Side View (EN2)

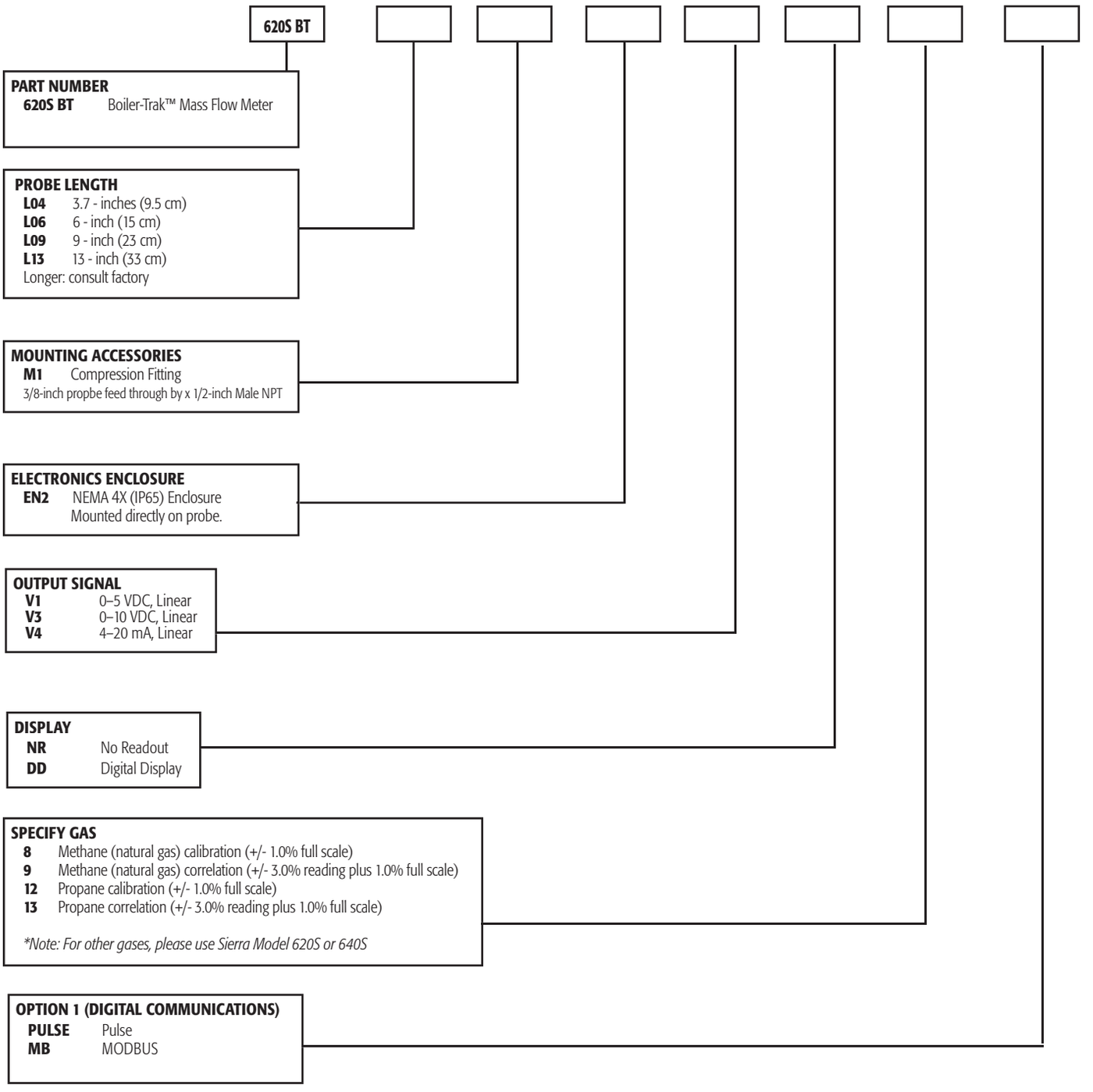


NEMA 4X–Front View (EN2)



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

Ordering the 620S BT



SIERRA® INSTRUMENTS
THE MASS FLOW COMPANY

BOILER-TRAK™

Sierra Instruments, North America • 5 Harris Court, Building L • Monterey, California • (800) 866-0200 • (831) 373-0200 • Fax (831) 373-4402 • www.sierrainstruments.com
Sierra Instruments, Europe • Bijlmansweid 2 • 1934RE Egmond aan den Hoef • The Netherlands • +31 72 5071400 • Fax: +31 72 5071401
Sierra Instruments, Asia • Rm.618, Tomson Centre, Bldg. A • 188 Zhang Yang Road • Pu Dong New District • Shanghai, P.R. China 200122 • +8621 5879 8521/22 • Fax: +8621 5879 8586

B Trak D 2/09