

# Fast Response, High-Performance, Immersible Thermal Gas Mass Flow Meter

## FEATURES

- Fast response flow meter ideal for gas mass flow measurement applications
- 200 millisecond response to changes in flow rate
- Smart electronics permit field adjustment of critical flow meter settings
- Field validation of flow meter calibration
- Outstanding rangeability
- Optional 2 x 12 backlit LCD display
- Minimal flow blockage and low pressure drop
- CE approved
- Optional Modbus RTU

# FASTFLO 620S



## DESCRIPTION

**S**ierra Instruments' FastFlo™ 620S Immersible Thermal Mass Flow Meter provides an economical solution for gas flow measurement applications. The meter's sensor offers long-term reliability and 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, can be displayed on the meter's optional 2 x 12 backlit LCD panel.

The meter also provides an optical/galvanic isolated 4-20 mA output and two alarm outputs. The programmable transmitter is easily configured via RS-232 and Sierra's Smart Interface™ Windows™ based software or three push buttons in the device. Modbus RTU is also supported. The 620S is suitable for pipes or ducts from 1-inch to 48-inches (DN50 to DN1200).

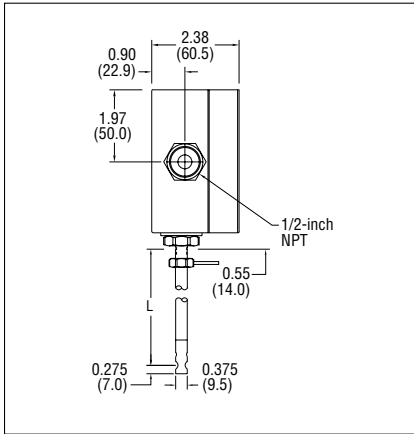


[www.sierrainstruments.com](http://www.sierrainstruments.com)

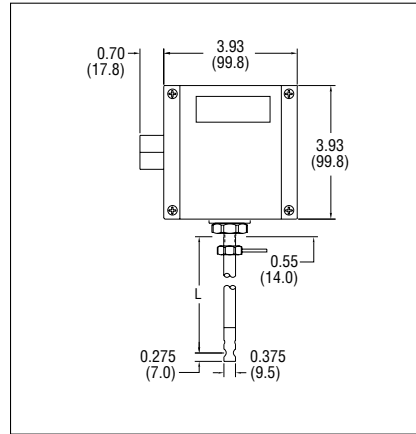


## DIMENSIONAL SPECIFICATIONS

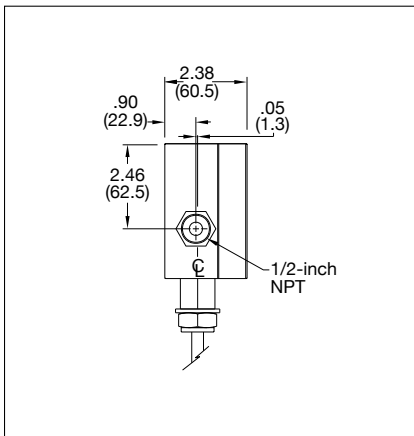
NEMA 4X—Side View (EN2)



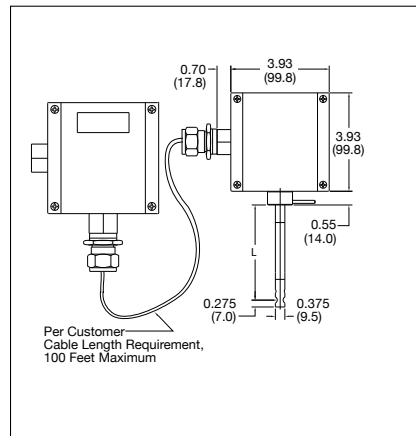
NEMA 4X—Front View (EN2)



NEMA 4X with Junction Box—Side View (EN4)



NEMA 4X with Junction Box—Front View (EN4)



## TABLES

Length Chart

Code	Rating
L04	4.0 (101.6)
L06	6.0 (152.4)
L09	9.0 (228.6)
L13	13.0 (330.2)
L18	18.0 (457.2)
L24	24.0 (609.6)

## PERFORMANCE SPECIFICATIONS

### Accuracy of Point Velocity

+/- 1% of full scale

### 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 air, consult factory for other gases

### Response Time

200 milliseconds to 63% of final velocity value

## OPERATING SPECIFICATIONS

### Gases

Most non-corrosive gases

### Gas Pressure

150 psig (10.34 barg) maximum design pressure

### Pressure Drop

Negligible

### Gas & Ambient Temperature

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

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

### Power Requirements

18 to 30 VDC (regulated), 625 mA draw maximum,  
625 mA maximum operating current at 24 VDC and full scale flow.  
Maximum in rush current of 2 Amps at 24 VDC. Consult factory for other conditions.

### Output Signal

Linear 0–5 VDC or 0-10 VDC, 1000 ohms minimum load resistance or  
Linear 4–20 mA proportional to mass flow rate,  
700 ohms maximum resistance power supply dependent  
User-selectable. Active non-galvanically separated or  
passive galvanically separated (loop power required)

## DIGITAL COMMUNICATION

Modbus RTU

## OPERATING SPECIFICATIONS (CONTINUED)

### 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, 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 (optional)

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

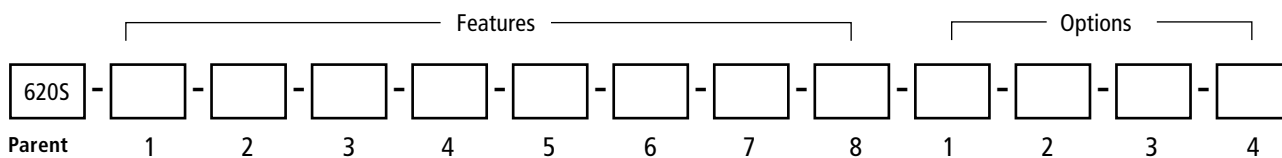
Weldolet

Flat Duct Bracket

Curved Duct Bracket

### Certifications

CE approved



Instructions: To order the 620S please fill in each number block by selecting the codes from the corresponding features below and following pages.

Parent Number	
<b>620S</b>	FastFlo™ Insertion Mass Flow Meter. 18-30 VDC input power with a 3/8-inch in diameter probe. Includes "Smart Electronics" with PC configuration software, calibrated temperatures up to 176°F (80°C) and pressures up to 150 psig (10.34 barg). 200 msec response. CE approved. 4-20 mA, 0-10 VDC or 0-5 VDC linear output

NOTE: ALL slpm flow ranges also available in nlpm. \* Flow bodies are sized for nitrogen flow rates. Other gases must be converted to equivalent nitrogen flow. Use K-factor and size accordingly.

Feature 1: Probe Length	
<b>L04</b>	3.7-inches (9.5 cm)
<b>L06</b>	6-inch (15 cm)
<b>L09</b>	9-inch (23 cm)
<b>L13</b>	13-inch (33 cm)
<b>L( )</b>	Special Length - Specify length in parentheses. Maximum 24-inch (61 cm). Minimum 3.7-inches (9.5 cm)

Note: For Digital communication options, see Option 2.

Feature 3: Electronics Enclosure	
<b>EN2</b>	NEMA 4X (IP65) Enclosure. Mounted directly on probe.
<b>EN4( )</b>	Remote NEMA 4X (IP65) Enclosure with Junction Box Mounted up to 200 feet (61m) away from the probe with junction box mounted on probe. Includes remote electronics enclosure mounting bracket and 1/2-inch Female NPT connection.

Feature 5: Display	
<b>NR</b>	No readout
<b>DD</b>	Digital display. 2 x 12 digit, backlit, LCD display indicates flow rate and totalized mass in engineering units. Simplifies configuration settings and provides system status information
<b>DD-NRT</b>	Totalizer cannot be reset in the field.

Option 1: Digital Communications	
<b>PULSE</b>	Totalizer pulse output (1 Hz max)
<b>MB</b>	Modbus communications protocol

Option 2: Certificates	
<b>MC</b>	Material certificates--US Mill certs on all wetted parts
<b>CC</b>	Certificate of conformance
<b>NACE</b>	NACE certificate for sour gas
<b>LT</b>	Leak test certificate
<b>PT</b>	Pressure test certificate

Feature 2: Mounting Accessories	
<b>M0</b>	None. Customer to supply own mounting hardware
<b>M1</b>	Compression fitting for 3/8-inch probe feed through by x 1/2-inch Male NPT
<b>M1-M2( )</b>	Compression fitting for 3/8-inch probe feed through by x 1/2-inch Male NPT including Weldolet. 1/2-inch Female NPT. Welds to pipe Specify pipe O.D. in parentheses
<b>M3</b>	Flat Duct Bracket. 3/8-inch tube compression fitting.
<b>M4( )</b>	Curved duct Bracket with 3/8-inch tube compression fitting. Specify duct O.D. in parentheses.
<b>M6</b>	Conex (Viton® compression fitting) packing gland can be used with customer supplied ball valve for live insertion or removal up to product maximum pressures. Compression fitting for 3/8-inch probe feed through by x 1/2-inch Male NPT.

Feature 4: Output	
<b>V1</b>	0-5 VDC, linear
<b>V3</b>	0-10 VDC, linear
<b>V4</b>	4-20 mA, linear

Feature 6: Gas	
<b>0</b>	Air
<b>1</b>	Argon
<b>2</b>	Carbon dioxide
<b>6</b>	Helium
<b>10</b>	Nitrogen
<b>99</b>	Other--consult factory

Option 3: Power Supplies	
<b>100-T10F ( )</b>	24 VDC Power Supply for 620S only. Supplied with fly leads, 1.5 Amps, 110-230 VAC, CE approved. Specify plug preference in parentheses: (US) for USA plug, (EU) for Euro plug, (UK) for Great Britain plug.