



Greyline

# TTFM 6.1

## Technical Specifications:

The Greyline Transit Time Flow Meter 6.1 provides non-contacting flow measurement. Ultrasonic transducers mount on the outside of pipes to measure flow rate of clean, non-aerated fluids like water, chemicals, and oils. The clamp-on transducers can be mounted without system shutdown. There is no pressure drop and no obstruction.



### GENERAL SPECIFICATIONS

<b>Operating Parameters:</b>	For clean liquids in full pipes with less than 2% solids or gas bubbles
<b>Programming:</b>	Built-in 5-button keypad with English, French, and Spanish menu language selection
<b>Electronics Enclosure:</b>	NEMA4X (IP66) polycarbonate with clear, shatterproof cover
<b>Accuracy:</b>	$\pm 1\%$ of reading from 0.5 m/s to 12.0 m/s (1.5 ft/s to 40 ft/s) and $\pm 0.0046$ m/s ( $\pm 0.015$ ft/s) for velocity below 1.5 ft/s (0.46 m/s). Repeatability & Linearity: $\pm 0.25\%$
<b>Display:</b>	White, backlit matrix — displays 5-digit flow rate with floating decimal, 14-digit totalizer, relay status, operating mode, and calibration menu
<b>Power Input:</b>	<ul style="list-style-type: none"><li>• 100-240 V AC (50/60 Hz), 10 VA maximum</li><li>• Optional: 9-32 V DC, 10 W maximum</li></ul>
<b>Analog Output:</b>	Isolated 4-20mA, 0-5 V, 1 k $\Omega$ load maximum, programmable offset
<b>Control Relays:</b>	<ul style="list-style-type: none"><li>• 2 Relays, form 'C' dry contacts rated 5 A SPDT; programmable flow alarm and/or flow proportional pulse</li><li>• Optional: 4 additional (6 total), rated 5 A SPDT</li></ul>
<b>Data Logger:</b>	Built-in 128 MB data logger with USB output and Windows software. Capacity for approx. 26 million data points
<b>Operating Temp. (Electronics):</b>	-20 °C to 60 °C (-5 °F to 140 °F)
<b>Approximate Shipping Weight:</b>	5.5 kg (12 lb)
<b>Approvals:</b>	CE, CSA/UL/EN 61010-1

### TRANSDUCER SPECIFICATIONS

<b>Pipe Diameter:</b>	<ul style="list-style-type: none"><li>• SE16B (<i>standard</i>): 50 mm to 1200 mm (2 in to 48 in)</li><li>• SE16A: 15 mm to 100 mm (0.5 in to 4 in)</li><li>• SE16C: 300 mm to 1200 mm (12 in to 48 in)</li></ul>
<b>Flow Velocity Range:</b>	$\pm 0.02$ m/s to 12 m/s ( $\pm 0.07$ ft/s to 40 ft/s)
<b>Pipe Materials:</b>	Any metal or plastic sonic conducting material including carbon steel, stainless steel, ductile iron, concrete-lined ductile iron, cast iron, PVC, HDPE, PVDF, fiberglass, copper, brass, aluminum, and pipes with bonded liners including epoxy, rubber, and Teflon
<b>Operating Frequency:</b>	<ul style="list-style-type: none"><li>• SE16B (<i>standard</i>): 1.28 MHz</li><li>• SE16A: 2.56 MHz</li><li>• SE16C: 640 kHz</li></ul>
<b>Operating Temperature:</b>	-40 °C to 150 °C (-40 °F to 300 °F)
<b>Transducer Mounting Kit:</b>	<ul style="list-style-type: none"><li>• SE16B: Includes set of stainless steel transducer brackets, clamps, alignment bar, and coupling compound.</li><li>• SE16A: Includes stainless steel track with pipe clamps, built-in ruler, and coupling compound.</li><li>• SE16C: Includes set of stainless steel transducer brackets, clamps, alignment bar with built-in ruler, and coupling compound.</li></ul>
<b>Transducer Cables:</b>	Triaxial, 7.6 m (25 ft) with BNC connectors and seal jackets (extendable up to 150 m (500 ft))
<b>Hazardous Locations:</b>	<ul style="list-style-type: none"><li>• Non-incendive for Class 1 Div 2, Groups A,B,C,D</li><li>• Optional: Intrinsically safe for Class 1 Div 1, Groups A, B, C, D</li></ul>

## POPULAR OPTIONS

### Industrial Automation Protocols:

Modbus RTU via RS-485 or HART (field selectable)

### Transducer Cables:

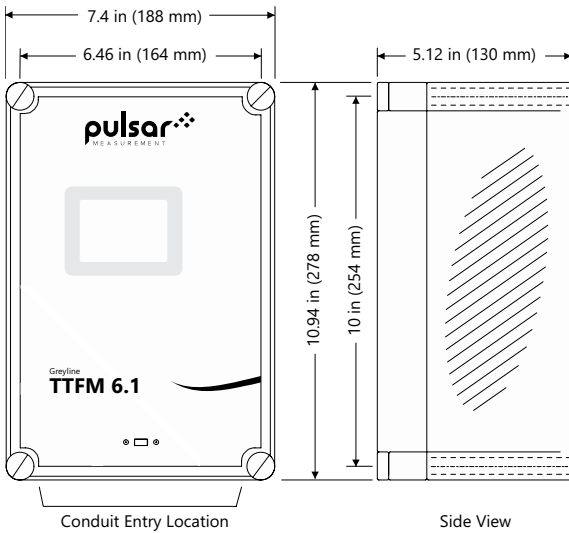
- 15 m (50 ft) triaxial with BNC connectors and seal jackets
- 30 m (100 ft) triaxial with BNC connectors and seal jackets

### Enclosure Heater:

Thermostatically controlled to -40 °C (-40 °F) — recommended for temperatures below 0 °C (32 °F)

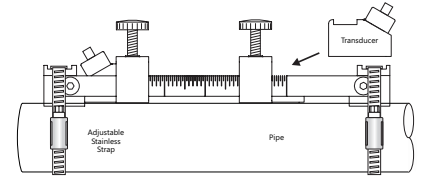
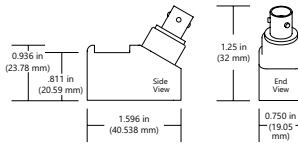
### Sunscreen:

Enclosure sunscreen for outdoor installations

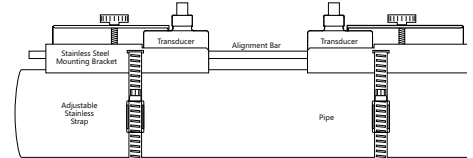
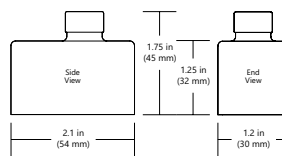


Greyline TTFM 6.1 drawing front and side

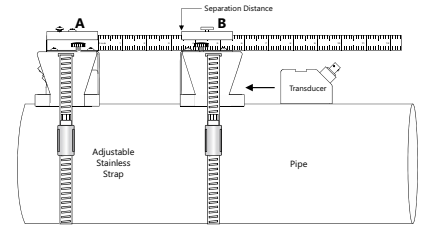
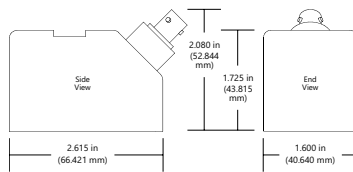
#### SE16A TRANSDUCERS



#### SE16B TRANSDUCERS



#### SE16C TRANSDUCERS



SE16A, SE16B, & SE16A Transducers & Mounting



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