

# TTFM 6.1

## Technical Specifications:

With the TTFM 6.1, you never need to be an expert in contactless flow measurement to get the best results in your application. It's easy to choose with three transducer sizes that work on all common pipe materials. It's easy to use and maintain with standard installation hardware and intuitive setup menu. It's easy to get assistance with real-time sales and applications support. Great things come in threes, the meter made to make your life easy...



### GENERAL SPECIFICATIONS

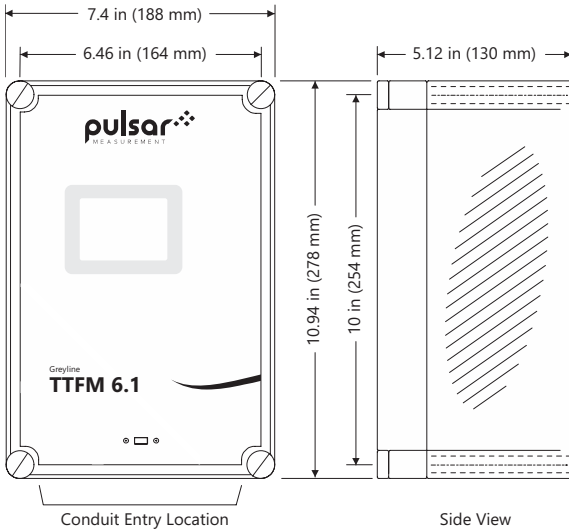
<b>Operating Parameters:</b>	For clean liquids in full pipes with less than 2% solids or gas bubbles
<b>Programming:</b>	Built-in 5-button keypad with English, French, and Spanish menu language selection
<b>Electronics Enclosure:</b>	NEMA4X (IP66) polycarbonate with clear, shatterproof cover
<b>Flow Velocity Range:</b>	+/- 0.02 m/s to 12.2 m/s (+/- 0.07 ft/s to 40 ft/s)
<b>Accuracy:</b>	±1% of reading from 0.46 to 12.2 m/s (1.5 to 40 ft/s); ±0.0046 m/s (±0.015 ft/s) for velocities below 0.46 m/s (1.5 ft/s). Repeatability & Linearity: ±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 kΩ load maximum
<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

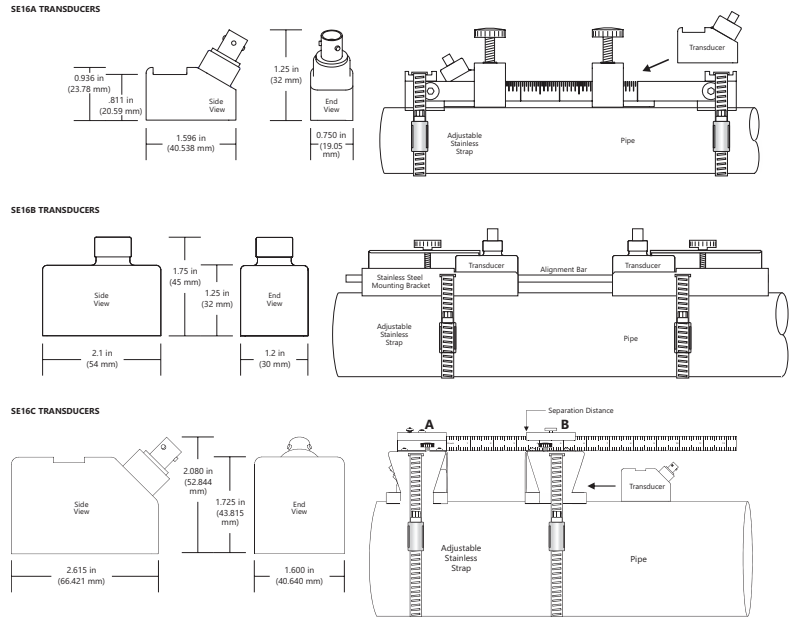
<b>Pipe Diameter, Nominal:</b>	SE16A: Recommended for 15 mm to 40 mm (0.5 in to 1.5 in), Possible for up to 150 mm (6 in) SE16B: Recommended for 50 mm to 250 mm (2 in to 10 in), Possible for up to 1,200 mm (48 in) SE16C: Recommended for 300 mm to 1,200 mm (12 in to 48 in), Possible for down to 100 mm (4 in)
<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>	SE16A: 2.56 MHz SE16B: 1.28 MHz SE16C: 640 kHz
<b>Operating Temperature:</b>	-40 °C to 150 °C (-40 °F to 300 °F)
<b>Transducer Mounting Kit:</b>	SE16A: Includes stainless steel track with pipe clamps, built-in ruler, and coupling compound. SE16B: Includes set of stainless steel transducer brackets, clamps, alignment bar, and coupling compound. SE16C: Includes set of stainless steel transducer brackets, clamps, alignment bar with built-in ruler, and coupling compound.
<b>Transducer Cables:</b>	Triaxial, 7.6 m (25 ft) with BNC connectors and seal jackets (extendable up to 152.4 m (500 ft))
<b>Ingress Protection:</b>	SE16A & SE16B: IP67 when seal jackets properly installed SE16C: IP68 (3m max depth, 3 hours max duration)
<b>Hazardous Locations:</b>	Standard: Certified Non-incendive for Class I, Div 2, Groups A, B, C, D Optional: Certified Intrinsically safe for Class I, Div 1, Groups C, D; Class II, Groups E, F, G; Class III; Encl. Type 4 Optional: Certified Intrinsically Safe for sensor mounting in ATEX/IECEx Zone 0, Ex ia IIB T4 Ga, hazardous locations

## POPULAR OPTIONS

<b>Industrial Automation Protocols:</b>	Modbus RTU via RS485 or HART (field selectable)
<b>Transducer Cables:</b>	<ul style="list-style-type: none"> <li>• 15.2 m (50 ft) triaxial with BNC connectors and seal jackets</li> <li>• 30.5 m (100 ft) triaxial with BNC connectors and seal jackets</li> </ul>
<b>Enclosure Heater:</b>	Thermostatically controlled to -40 °C (-40 °F) — recommended for temperatures below 0 °C (32 °F)
<b>Sunscreen:</b>	Enclosure sunscreen for outdoor installations



TTFM 6.1 drawing front and side



SE16A, SE16B, & SE16C Transducers & Mounting

## TRANSDUCER NOMINAL PIPE SIZE RANGES



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