pulsar
MEASUREMENT

Greyline
PTFM 1.0

The PTFM 1.0 Portable Transit-Time Flowmeter is ideal to measure flow rate of clean, non-aerated fluids in full pipes.

Accurate Flow Measurement of Clean Liquids with Non-Contacting Transducers

Non-Contacting Flow Measurement

Recommended for fluids like water, glycol, oil, and most chemicals. The PTFM 1.0 ultrasonic transducers strap-on the outside of pipes from 50.2 mm to 1.2 m (2 in to 4 ft) diameter. The ultrasonic signal works through all common metal and plastic pipe materials. Transducers can be mounted without shutting down flow and there is no obstruction or pressure drop.

User-Friendly Operating System

Calibration is easy with the on-screen menu system. Just enter the pipe diameter, wall thickness, and pipe material. The PTFM 1.0 is powered by an internal, rechargeable NiMH battery or can be operated continuously with an AC power adapter. Each PTFM 1.0 includes a watertight carry case, transducer set, cables, and mounting clamps.

Measures Clean Liquids in Full Pipes

The PTFM 1.0 Portable Transit-Time Flow Meter is designed to measure clean, non-aerated liquids like water, chemicals, and oils with less than 2% solids or bubbles The ultrasonic transducers can be mounted on vertical or horizontal pipes.

THE RIGHT METER FOR

- Treated Water
- Raw Water
- Cooling Water
- Chemicals
- Hydraulic Oil
- Demineralized Water
- Water/Glycol Solutions
- Diesel & Fuel Oils

Measures Flow from the Outside of Pipes

The PTFM 1.0 Portable Transit-Time Flow Meter works by measuring the "transit-time" or "time of flight" for ultrasonic sound pulses transmitted from one transducer to another. The transit-time in the direction of flow is faster than the transit-time against the flow. By comparing these differences with precision timing circuits, the PTFM 1.0 can accurately calculate the flow rate.

The choice of V, Z, or W mounting method depends on the application and pipe diameter. V-mount is the most common method while Z-mount is used for larger pipes or weak signal applications and W-mount for smaller pipes.

V-Mount
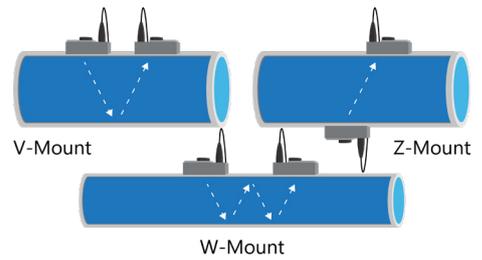
Z-Mount

W-Mount

Works with Common Pipe Materials

Mount the ultrasonic transducers on the outside of metal or plastic pipes including carbon steel, stainless steel, ductile iron, cast iron, PVC, PVDF, fiberglass, copper, brass, aluminum, and pipes with bonded liners including epoxy, rubber, and Teflon. Avoid pipes made with porous materials (e.g. wood or concrete) or with loose insertion liners.

Simple Menu System for Easy Start-up & Calibration

Calibration and start-up can be done in a few minutes. Use the built-in 5-button keypad to enter the pipe material and OD, wall thickness, and fluid type. The PTFM 1.0 will display the correct transducer separation distance. Secure the stainless steel pipe clamps and align the mounting brackets on the outside of the pipe. Put the coupling compound (included) on the transducer faces and insert them into the mounting brackets. The PTFM 1.0 will immediately begin to display, transmit, and totalize flow.

Built-in Data Logger with Windows Software Included

Set up the 300,000 point data logger to store time and date-stamped flow readings from 10-second to 5-minute intervals. View the convenient on-screen 'Flow Report' where total, minimum, maximum, and average flow rates are stored in a 24-hour daily summary.

Transfer flow logs to your PC or laptop through the PTFM 1.0's USB output. Greyline Logger software (included) displays data in both graph and table formats with one-click export to Microsoft Excel, images, or CSV files for use in other programs.

Easy to Install

The Greyline PTFM 1.0 Portable Transit-Time Flow Meter is designed to measure clean liquids in full pipes It works by injecting sound through the pipe wall and into the flowing liquid.

The battery-powered flow meter, transducers, mounting clamps, and accessories are supplied with a rugged watertight carrying case. Use it for troubleshooting, flow studies, and testing calibration of inline flow meters.

The PTFM 1.0 works on metal and plastic pipes and measures forward or reverse flow. A built-in data logger and Windows software are included.

Easy to Calibrate

Use the 5-button keypad and menu system to set up the flowmeter by entering the pipe material, diameter, and wall thickness. The PTFM 1.0 calculates the transducer separation distance and mounting method automatically.
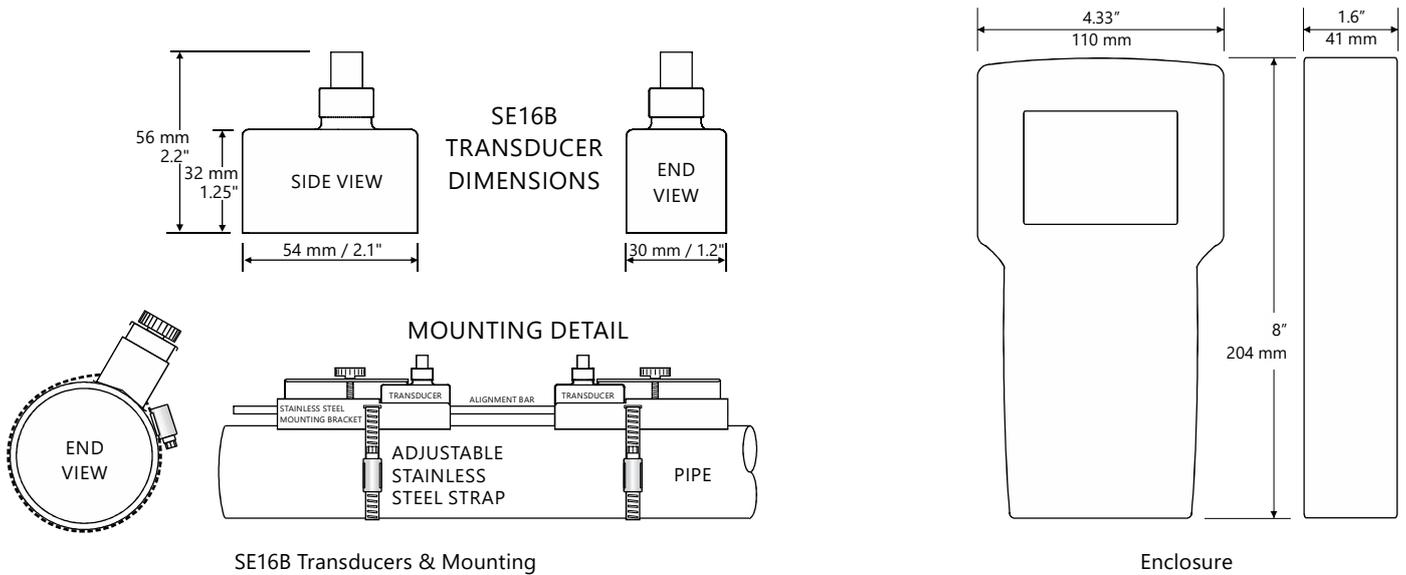
Technical Specifications

GENERAL SPECIFICATIONS

Operating Parameters:	For clean liquids in full pipes with less than 2% solids or gas bubbles
Calibration:	Built-in 5-key calibrator with English, French, and Spanish menu language selection
Electronics Enclosure:	Portable, ABS
Accuracy:	• ±1% of reading or 30 mm/s (1.2 in/s), whichever is greater • Repeatability & Linearity: ±0.25%
Power Input:	• Built-in NiMH battery for up to 18 hours continuous operation • External charger with 100-240 V AC 50/60 Hz input
Display:	White, backlit matrix — displays 5-digit flow rate with floating decimal, 14-digit totalizer, calibration menu, and daily flow report
Outputs:	• 4-20mA (500 Ω) when AC powered • USB for Data Log transfer by direct PC connection
Data Logger:	Programmable 300,000 data point capacity, time and date stamped or formatted flow reports including total, average, minimum, maximum, and times of occurrence
PC Software:	Greyline Logger for Windows 98 or higher. Retrieves, displays and saves data log files.
Operating Temp. (Electronics):	-20 °C to +60 °C (-5 °F to +140 °F)
Carry Case:	Rated IP67 with protective molded foam inserts
Language Selection:	English, French, Spanish
Approvals:	AC Charger is CE and UL approved
Approximate Shipping Weight:	5.5 kg (12 lb)

TRANSDUCER SPECIFICATIONS

Pipe Diameter:	**SE16B:** Recommended for 50 mm to 250 mm (2 in to 10 in), Suitable for 50 mm to 1,200 mm (2 in to 48 in)
Pipe Materials:	Any metal or plastic sonic conducting material including carbon steel, stainless steel, ductile iron, cast iron, PVC, PVDF, fiberglass, copper, brass, aluminum, and pipes with bonded liners including epoxy, rubber, and Teflon
Flow Velocity:	±0.021 m/s to 11.9 m/s (±0.07 ft/s to 39 ft/s) typical
Operating Frequency:	1.28 MHz
Operating Temperature:	-40 °C to +150 °C (-40 °F to +300 °F)
Transducer Mounting Kit:	**SE16B:** Includes set of stainless steel transducer brackets, clamps, alignment bar, and coupling compound.
Transducer Cable:	RG-58 coaxial, 3.4 m (12 ft) with BNC connectors and seal jackets

POPULAR OPTIONS

Sensor Cable:	15.2 m (50 ft) coaxial pair with BNC connectors and seal jackets

SE16B TRANSDUCER DIMENSIONS

SIDE VIEW

56 mm
2.2"

32 mm
1.25"

54 mm / 2.1"

END VIEW

30 mm / 1.2"

END VIEW

MOUNTING DETAIL

STAINLESS STEEL MOUNTING BRACKET

TRANSDUCER

ALIGNMENT BAR

TRANSDUCER

ADJUSTABLE STAINLESS STEEL STRAP

PIPE

SE16B Transducers & Mounting

4.33"
110 mm

1.6"
41 mm

8"
204 mm

Enclosure

Delivering the Measure of Possibility

Pulsar Measurement offers worldwide professional support for all of our products, and our network of global partners all offer full support and training. Our facilities in Malvern, UK and Largo, USA are home to technical support teams who are always available to answer your call or attend your site when required. Our global presence, with direct offices in the UK, USA, Canada, and Malaysia, allows us to create close relationships with our customers and provide service, support, training, and information throughout the lifetime of your product.

By taking a step forward in echo processing technology, Pulsar Measurement addresses applications previously thought to be beyond the scope of ultrasonic measurement. This technology improves signal processing at the transducer head which has made it possible to increase resistance to electrical noise, enabling the transducer to 'zone in' on the true echo.

For more information, please visit our website:

www.pulsarmeasurement.com

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