Portable Transit Time Flowmeter

Measure flow of clean fluids from Outside a Pipe

Portable Transit Time Flow Meter

Portaflow SE

Displays, Datalogs
Transmits and Totalizes
Flow in Closed Pipes

Strap-on Ultrasonic Sensors
Easy Calibration and Set-up
50,000 point Data Logger
4-20mA Output
Built-in Rechargeable Battery

Accurate Flow Measurement of clean fluids from outside plastic or metal pipes

Clamp-on Ultrasonic Sensors

Recommended for clean fluids like water, glycol, oil and most chemicals. Portaflow ultrasonic sensors strap-on the outside of pipes from 2" to 40" (50 to 1000 mm) diameter. The ultrasonic signal penetrates all common metal and plastic pipe materials. Sensors can be mounted without shutting down flow and there is no obstruction or pressure drop.

Simple Calibration Menu System

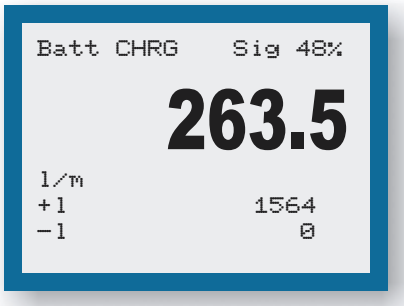
Calibration is easy with the onscreen menu system. Enter the pipe diameter, wall thickness and pipe material, and the Portaflow indicates the optimum mounting method and separation distance for the sensors. Calibration parameters can be stored for up to twenty different sites so that operators can recall calibration setups from the Portaflow memory.

New! Portable Ultrasonic Flowmeter

- **Non Invasive - works from Outside the Pipe**
- **Ideal for Spot Checks and to Balance Flow**

Each Portaflow SE includes:

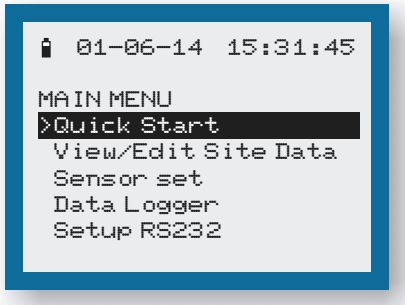
- ☑ Hand-Held, Battery-powered Flow Meter with LCD display and Keypad
- ☑ Pair of Ultrasonic Sensors and Cables
- ☑ Acoustic Couplant Gel
- ☑ Stainless Steel Mounting Track and Pipe Clamps
- ☑ Stainless Steel Pipe Clamps for Large Pipes
- ☑ Universal AC Battery Charger
- ☑ RS232 Cable
- ☑ Rugged Carrying Case



Large Display with User-friendly Calibration Menu

Flow rate and total flow are displayed continuously along with battery status, signal strength, plus any error messages. Press one key to instantly change the units of flow measurement (eg. from gallons to litres). Real time flow can be displayed in large numeric values or as a graph.

Calibration is easy with the PORTAFLOW menu system. Use the “Quick Start” menu to enter pipe OD, wall thickness, pipe material, fluid type and temperature. The flowmeter will prompt with the correct mounting method and sensor separation distance and begin reading flow as soon as the sensors are mounted.



Measures, Totalizes and Transmits Flow in <u>both</u> Directions

Forward flow is displayed on the PORTAFLOW as a positive value and reverse flow is shown as a negative value. Separate 12-digit totals for both forward and reverse flow are also displayed. The 4-20mA output can be configured with 4mA as zero flow, or with 4mA as a negative value and 20mA as a positive value.

Stores Calibration Set-up for Multiple sites

Calibration data can be stored for up to 20 different sites or applications. If you regularly return to the same pipe location for flow readings, this is a real time-saver. You can enter a site name (up to 16 characters) and all your calibration parameters are automatically saved. When you return to that pipe location, simply recall the site name/number from the set-up menu, mount the sensors and start reading flow.

Built-in Data Logger

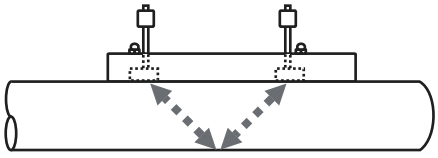
Stores up to 50,000 data points at programmable intervals from 5 seconds to 1 hour. Scroll through stored data or view log files as a graph on the PORTAFLOW display. Use the RS232 output to download log files to your PC for analysis and printing. Log files can be saved as text files and imported into database or spreadsheet programs like Microsoft Excel.

4-20mA Output

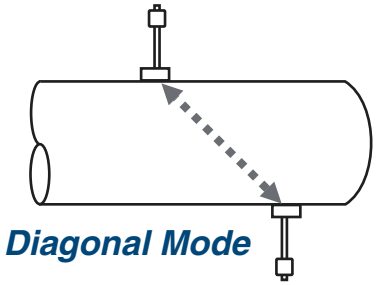
Connect the PORTAFLOW to external displays, recorders, data loggers or controllers. Install sensors without cutting pipe so you can use the Portaflow as a spare or emergency transmitter when in-line flow meters fail. The analog output can be configured for 4-20mA or 0-20mA signal output.

Portaflow SE – Specifications

General Specifications	Greyline Portaflow SE Portable Transit Time Flow Meter
Fluid/Application:	Recommended for clean liquids with less than 2% solids or gas bubbles
Flow Rate Range:	0.65 to 40 ft/sec (0.2 to 12 m/sec)
Pipe Size:	Ultrasonic sensors mount on any pipe from 2" to 40" ID (50 mm to 1000 mm)
Pipe Materials:	Any sonic conducting material including carbon steel, stainless steel, PVC, PVDF, fiberglass, galvanized steel, mild steel, glass, copper, brass and pipes with bonded liners including epoxy, rubber and Teflon
Display:	Backlit LCD matrix. Displays flow rates in m^3, liters, or gallons (per minute or hour), and flow velocity in feet per second or meters per second. Displays positive and negative flow and data log files in graphic or text modes.
Totalizer:	12 digits - displays separate forward and reverse flow totals
Power Inputs:	Built-in rechargeable NiMH battery powers the Portaflow for 6-10 hours continuously. The external charger operates from 100-240 VAC power input
Outputs:	4-20mA (750 ohm), Serial RS232-C with adjustable baud rates for data transfer to a PC
Data Logger:	programmable, 50,000 data point capacity, time and date stamped values
Electronics Operating Temperature:	32° to 122°F (0° to 50°C). Storage Temperature: 14° to 140°F (-10° to 60°C)
Electronics Enclosure:	Portable, ABS enclosure with lockable carrying case
Accuracy:	±2% of reading, Repeatability: ±0.5%
Calibration:	Built-in 16-key programming with user-friendly calibration menu. Stores calibration parameters for up to 20 different sites.
Approvals:	CE (conforms to EN50081-1 emission and EN50082-1 immunity standards). Charger is CE, CSA and UL approved. The Portaflow SE is *not* certified for use in hazardous rated locations.
Sensor Specifications	
Transducer Model PTSE1:	Clamp-on 1 MHz ultrasonic for pipes from 2" to 40" ID (50 mm to 1000 mm).
Transducer Mounting Kit:	Includes stainless steel guide rail, mounting chains and coupling compound
Operating Temperature:	-4° to 257°F (-20° to 125°C)



Reflex Mode



Diagonal Mode

Sensor Mounting

Sensors can be mounted on vertical or horizontal pipe. The pipe must be full.

Choice of “Reflex” or “Diagonal” operating modes depends on the application and pipe diameter. Through the PORTAFLOW calibration menu you are prompted to enter: pipe OD, pipe wall thickness and lining thickness, pipe material, fluid type and temperature. Once these values are entered into the calibration menu, the PORTAFLOW indicates the transducer mounting mode and correct sensor separation distance. In most applications Reflex mode mounting will be used for pipes 10" (250 mm) diameter or less, and Diagonal mounting will be used for pipes greater than 10" (250 mm) diameter.

The PORTAFLOW’s stainless steel guide rail includes spring-loaded clamps for easy mounting. An acoustic gel (supplied) is used between the sensors and the outside of the pipe to ensure that sound is conducted from the sensors through the pipe wall.

Portaflow Portable Ultrasonic Flow Meter for Clean Fluids in Full Pipes

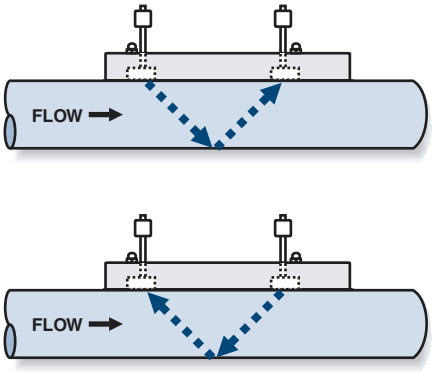
- **Strap-on Sensors work from Outside the Pipe**
- **Simple, user-friendly calibration system**

Recommended For:

- ☑ potable water
- ☑ river water
- ☑ cooling water
- ☑ demineralized water
- ☑ water/glycol solutions
- ☑ hydraulic oil
- ☑ diesel and fuel oils
- ☑ chemicals

The Portaflow SE is ideal to measure flow rate of clean, non-aerated fluids in full pipes. Works best on fluids that have less than 2% particulate or gas bubbles.

How it Works



The PORTAFLOW is a Transit Time ultrasonic flow meter. It measures flow by injecting sound from a transmitting sensor, through the pipe wall into the flowing liquid and then to a receiving sensor. The elapsed time between transmitted and received signals is very precisely calculated by the flow meter.

Then the sensors trade functions. The original receiving sensor now becomes the transmitting sensor and the ultrasonic signal is transmitted in the opposite direction. Again the elapsed time between transmitted and received signals is calculated.

The transit time in the direction of flow is faster than the transit time against the flow. By comparing these time differences the PORTAFLOW is able to accurately calculate the flow rate. Because the ultrasonic signal is forced to cross the pipe, an average of the flow profile is calculated. So compensation for laminar or turbulent flow is automatic.

The Portaflow Transit Time flow meter is designed for clean, non-aerated liquids (<2% by volume). High concentrations of solids or gas bubbles will attenuate the ultrasonic signal and sound will not be able to cross the pipe. A Greyline Doppler-type flow meter is recommended for applications with solids or bubbles (eg. wastewater or slurries).

How to Order

Contact a Greyline sales representative in your area or phone one of our sales engineers. Describe your requirements and receive our prompt quotation.

Applications Support

Take advantage of Greyline's applications experience. Phone toll free 1-888-473-9546 for advice and information on applications, installation or service for Greyline instruments.

No Risk Appraisal

The PORTAFLOW Transit Time Flow Meter must meet your requirements. Discuss your application with a Greyline representative to arrange a performance test.

The Greyline Guarantee

Quality of Materials and Workmanship - Each instrument manufactured by Greyline is warranted against defects in materials and workmanship for a period of one year from date of purchase. Refer to our limited warranty included with each product.

Greyline instruments inc.

RELIABLE MEASUREMENT AND CONTROL

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