

PORTABLE ULTRASONIC FLOWMETER KITS

Portable, Non-Invasive and Data Logging Option

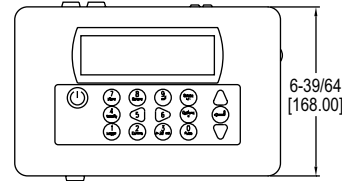
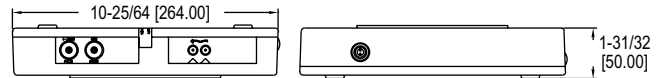
CALIBRATION SERVICES AVAILABLE



PUB



PUF



The **Series PUB & PUF Portable Ultrasonic Flowmeter Kits** utilize the transit-time difference for measuring flow rates in pipes non-invasively. Units offer flow rate local display with analog and pulsed outputs. The Series PUF offers the same features plus data logging capability.

BENEFITS/FEATURES

- Non-invasive pipe measurement
- Compact and lightweight
- Incorporate the latest electronics and signal processing technologies realizing high performance and easy operation
- Ideal for on-the-go flow monitoring, capable of 20 hours continuous operation with built-in, rechargeable battery
- Easy to read graphic display with convenient backlight for visual comfort
- Efficient layout of the function keys for easy to use programming
- PUB features rugged carrying case with molded foam inserts
- PUF boasts an IP67 rated case to hold and protect all equipment conveniently

APPLICATIONS

- Water treatment
- Industrial systems
- Irrigation applications
- Treated water flow
- River water
- Sea water
- Potable water
- Demineralized water
- Glycol/water mix
- Hydraulic system
- Diesel oil
- Water use data logging

KIT INCLUDES

- Converter
- Set of transducers
- Transducer holders
- Set of transducer cables (6.56' (2 m))
- 4-20 mA communication cables
- 12 VDC power supply
- Ultrasonic coupling grease
- Set of chains
- Ruled guide rail
- Test block
- Carrying case

MODEL CHART - STANDARD VERSION

Model	Pipe Size Range in (mm)
PUB-10	0.5 to 4.5 (13 to 115)
PUB-20	2 to 40 (50.7 to 1016)

MODEL CHART - DATA LOGGING VERSION

Model	Pipe Size Range in (mm)
PUF-1001	0.5 to 78 (13 to 2000)
PUF-1002	0.5 to 4.5 (13 to 115)
PUF-1003	2 to 78 (50 to 2000)

OPTIONS

Use order code:	Description
NISTCAL-FU	NIST traceable calibration certificate

SPECIFICATIONS

Service: Homogeneous liquids that do not contain air bubbles capable of ultrasonic wave propagation.

Inputs: Lemo connector cable from sensors.

Range: 0.33 to 65.62 ft/s (0.1 to 20 m/s).

Display: 240 x 64 pixel graphic display, high contrast black on white with backlight; Languages: English, French, German, Swedish, Italian, Spanish, Portuguese, Russian, Norwegian, and Dutch; 5.2" W x 1.5" H.

Accuracy: ± 0.5 to 2% of flow reading for flow rate > 0.66 ft/s (0.2 m/s) and pipe ID > 2.95 in (75 mm); $\pm 3\%$ of flow reading for flow rate > 0.66 ft/s (0.2 m/s) and pipe ID in range 0.512 to 2.95" (13 to 75 mm); $\pm 6\%$ of flow reading for flow rate < 0.66 ft/s (0.2 m/s).

Power Requirements: 9-24 VDC, (1) 5-Cell NiMH battery, internal, factory replaceable (continuous operation time: 20 hours with back-light and output off) (recharging time: 6.5 hours, power adaptor used).

Power Consumption: 10.5 W.

Power Adaptor: 110/240 VAC adaptor. UK, US, European adaptors included.

Temperature Limits: -4 to 275°F (-20 to 135°C).

Outputs: Analog: 1 opto-isolated output: 4-20 mA, 0-16 mA or 0-20 mA (selectable); Error current: 0-26 mA (selectable); Load resistance: 620 Ω max; Pulse: 1 opto-isolated MOSFET relay, 150 mA max, 500 pps max, 200 Hz max.

Serial Communications: USB; RS-232 (PUF only).

Enclosure Rating: Converter: IP54; Transducers: IP51.

Materials: Flame retardant injection molded ABS plastic.

Repeatability: $\pm 0.5\%$ of measured value or ± 0.066 ft/s (0.02 m/s).

Electrical Connections: Multi-pin Lemo plugs.

Turbidity: $< 3\%$ by volume of particulate content.

Permissible Air Content: $< 3\%$ by volume.

Response Time: < 500 ms.

Weight: Unit without accessories: 2.3 lb (1.06 kg); Unit with accessories in carrying case: 13.23 lb (6.0 kg).

Compliance: CE.

ADDITIONAL SPECIFICATIONS

Applicable Pipe Material: Carbon steel, SS, copper, UPVC/PVDF, concrete, galvanized steel, mild steel, glass, brass.

Applicable Pipe Lining: Rubber, glass, concrete, epoxy, steel, other*.

Pipe Wall Thickness: 0.04 to 3" (1 to 75 mm).

Pipe Lining Thickness: $< 1"$ (< 25 mm).

*Selectable option for special material with known propagation rate of lining material.

USA: California Proposition 65

WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.