

# PORTABLE ULTRASONIC FLOWMETER KIT

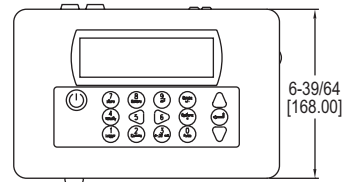
Portable, Non-Invasive and Data Logging Option



PUB



PUF



The **SERIES PUB & PUF** Portable Ultrasonic Flowmeter Sets 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.

**FEATURES/BENEFITS**

- 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 to 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)

**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); ±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); ±6% of flow reading for flow rate < 0.66 ft/s (0.2 m/s).  
**Power Requirements:** 9 to 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 adapter used).  
**Power Consumption:** 10.5 W.  
**Power Adapter:** 110/240 VAC adapter. UK, US, European adapters included.  
**Temperature Limits:** -4 to 275°F (-20 to 135°C).  
**Outputs:** Analog: 1 opto-isolated output: 4 to 20 mA, 0 to 16 mA or 0 to 20 mA (selectable); Error current: 0 to 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:** ±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).  
**Agency Approvals:** 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.

**OPTIONS**

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

USA: California Proposition 65  
 ⚠WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

Flow Transmitters, Ultrasonic, Portable