PORTABLE ULTRASONIC FLOWMETER KIT
Portable, Non-Invasive and Data Logging Option

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
• Deionized water
• Glycol/water mix
• Hydraulic system
• Diesel oil
• Water use data logging

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 backlight and output off) (recharging time: 6.5 hours, power adapter used).
Power Consumption: 10.5 W.
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 in to 3" (1 to 75 mm).
Pipe Lining Thickness: < 1/16" (< 25 mm).

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

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

MODEL CHART - STANDARD VERSION

<table>
<thead>
<tr>
<th>Model</th>
<th>Pipe Size Range in (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUB-10</td>
<td>0.5 to 4.5 (13 to 115)</td>
</tr>
<tr>
<td>PUB-20</td>
<td>2 to 40 (50.7 to 1016)</td>
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</tbody>
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MODEL CHART - DATA LOGGING VERSION

<table>
<thead>
<tr>
<th>Model</th>
<th>Pipe Size Range in (mm)</th>
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</thead>
<tbody>
<tr>
<td>PUF-1001</td>
<td>0.5 to 78 (13 to 2000)</td>
</tr>
<tr>
<td>PUF-1002</td>
<td>0.5 to 4.5 (13 to 115)</td>
</tr>
<tr>
<td>PUF-1003</td>
<td>2 to 76 (50 to 2000)</td>
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</tbody>
</table>

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