Doppler Flow Meter
UFX Hand-Held Battery-Powered Meter

DESCRIPTION
The UFX Doppler Flow Meters feature ultrasonic measuring technology, providing accurate and reliable flow velocity readings for aerated liquids and liquids with suspended particles. The UFX flow meter is a cost-effective, portable flow measurement system for closed full pipes size 1/4 in. (6 mm) and above.

OPERATION
The UFX flow meter uses two piezoelectric crystals contained within one transducer to transmit ultrasonic energy into the fluid stream and receive reflected energy off discontinuities, suspended particles or entrained gases, within the moving liquid. When the fluid is flowing in the pipe (with the discontinuities traveling at the same speed), there will be a shift in frequency from the transmitted ultrasound wave to the received ultrasound wave. The difference between these ultrasound wave frequencies is the Doppler frequency shift and is proportional to fluid velocity.

FEATURES
• Non-invasive, hand-held transducer and battery-powered electronics packaged in a NEMA 4 (IP65) rated enclosure
• Measures fluid velocities from 0.3…30 FPS (0.1…9 MPS)
• Reliable readings on nearly all liquid applications containing a minimum of 100 ppm of 100 micron size suspended solids or entrained gases
• Optional CE approved version for pipes size 1 in. (25 mm) and above
• Large four-digit LCD display provides velocity readout in user selected units (FPS or MPS)
• Easy to use flow verification instrument for industrial and municipal applications including concrete slurries, dredging, primary sludge and waste activated sludge

SPECIFICATIONS
<table>
<thead>
<tr>
<th>Liquid Requirements</th>
<th>100 ppm of 100 micron size suspended solids or entrained gases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipe Sizes</td>
<td>Std. 1” (25 mm) and greater Small pipe 1/4”…1” (6…25 mm)</td>
</tr>
<tr>
<td>Flow Range</td>
<td>0.3…30 fps (0.1…9 mps)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±2% of full scale</td>
</tr>
<tr>
<td>Display</td>
<td>Single line, four digit LCD readout of velocity, signal strength, measuring units, and low battery indication</td>
</tr>
<tr>
<td>Enclosure Rating Dimensions</td>
<td>NEMA 4 (IP65) ABS plastic; 1.5 lb (0.7 kg) 4” W × 7.7” H × 1.7” D (101.6 mm × 195.6 mm × 43.2 mm)</td>
</tr>
<tr>
<td>Transducer Material</td>
<td>Plated body; Ultem® 1000 sensor material</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>–28…140° F (–20…60° C)</td>
</tr>
<tr>
<td>Liquid Temperature</td>
<td>–40…180° F (–40…82° C)</td>
</tr>
<tr>
<td>Humidity</td>
<td>0…95% non-condensing</td>
</tr>
<tr>
<td>Supply Voltage</td>
<td>Battery powered; non-rechargeable alkaline, four AA cells; providing greater than 30 hours of continuous operation</td>
</tr>
<tr>
<td>Cable</td>
<td>6.6 feet (2 m) cable and connector</td>
</tr>
<tr>
<td>Mounting Method</td>
<td>Hand-held with acoustic couplant compound</td>
</tr>
</tbody>
</table>

Figure 1: UFX operation

Badger Meter
DPP-DS-01612-EN-02 (May 2015)
Doppler Flow Meter, UFX Hand-Held Battery-Powered Meter

DIMENSIONS

![UFX flow meter dimensions](image)

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 ft (2 m)</td>
<td>7.70 in. (195.6 mm)</td>
<td>9.57 in. (243.1 mm)</td>
<td>4.0 in. (101.6 mm)</td>
<td>2.87 in. (72.4 mm)</td>
<td>2.32 in. (58.9 mm)</td>
<td>0.75 in. (19.1 mm)</td>
<td>1.70 in. (43.2 mm)</td>
<td>1.38 in. (35.1 mm)</td>
<td>3.24 in. (82.3 mm)</td>
<td>1.38 in. (35.1 mm)</td>
<td>4.38 in. (111.3 mm)</td>
<td>1.91 in. (48.3 mm)</td>
</tr>
</tbody>
</table>

PART NUMBER CONSTRUCTION

Model: Hand Held Doppler Ultrasonic Flow Meter DUFX

Transmitter Type: Battery Powered Hand Held 1

Transducer Types: Small Pipe (1/4...1 inch) B1
Standard Pipe (Over 1 Inch) D1
Both Small Pipe and Standard Pipe | B1 and D1 |

Approvals: None (Leave blank when no approvals are required)

CE Generic Light Industrial Approval | Only D1 |

NOTE: The UFX meter is shipped with acoustic couplant, velocity slide chart, batteries and a carrying case.

![Velocity-to-volumetric conversion slide chart included](image)

PARTS AND ACCESSORIES

- Nylon Mounting Strap 30” (750 mm) D002-2007-002
- Couplant, Silicone (for temporary mounting) D002-2011-001
- SS Identification Tag D001117
- UFX Standard Pipe Transducer DTUFX-D1
- UFX Small Pipe Transducer DTUFX-B1
- UFX Carrying Case D003-1009-005
- Velocity Conversion Slide Chart D003-0913-002

Control. Manage. Optimize.

DYNASONICS is a registered trademark of Badger Meter, Inc. Other trademarks appearing in this document are the property of their respective entities. Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists. © 2015 Badger Meter, Inc. All rights reserved.

www.badgermeter.com

Legacy Document Numbers: 06-DPP-BR-00402-EN