

## HAND HELD DOPPLER FLOW METER

The Series UFX Doppler Flow Meter features an advanced ultrasonic measuring technology, providing accurate and reliable flow velocity assessments in closed piping systems. The UFX utilizes a non-invasive, hand held transducer which is placed on the outside of the pipe. Within seconds, the large 0.7 inch (18 mm) LCD provides stable readings in feet per second or meters per second. This product operates on metal or plastic pipes containing liquids with greater than 100 ppm of 100 micron size suspended solids or entrained gases.

The Series UFX flow meter is a cost-effective flow measurement system for closed full pipes size ¼" (6 mm) and above. The easy to use hand held transducer provides accurate flow readings on applications such as dredging systems, crude oil, sludges, and waste slurries.



### FEATURES

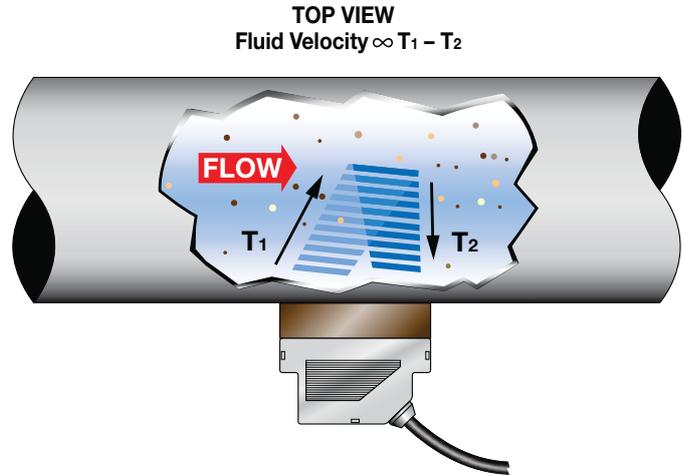
- Utilizes a non-invasive, hand held transducer and NEMA 12X, battery operated enclosure.
- Measures fluid velocities from 0.3 to 30 FPS (0.1 to 9 MPS).
- Reliable readings on nearly all liquid applications containing a minimum of 100 ppm of 100 micron size suspended solid or entrained gases.
- Optional CE Approval transducer for pipes size 1" and above.
- Low cost unit with accurate readings on closed full pipes size ¼" (6 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 paper pulp stock, concrete slurries, dredging applications, primary sludge and waste activated sludge.





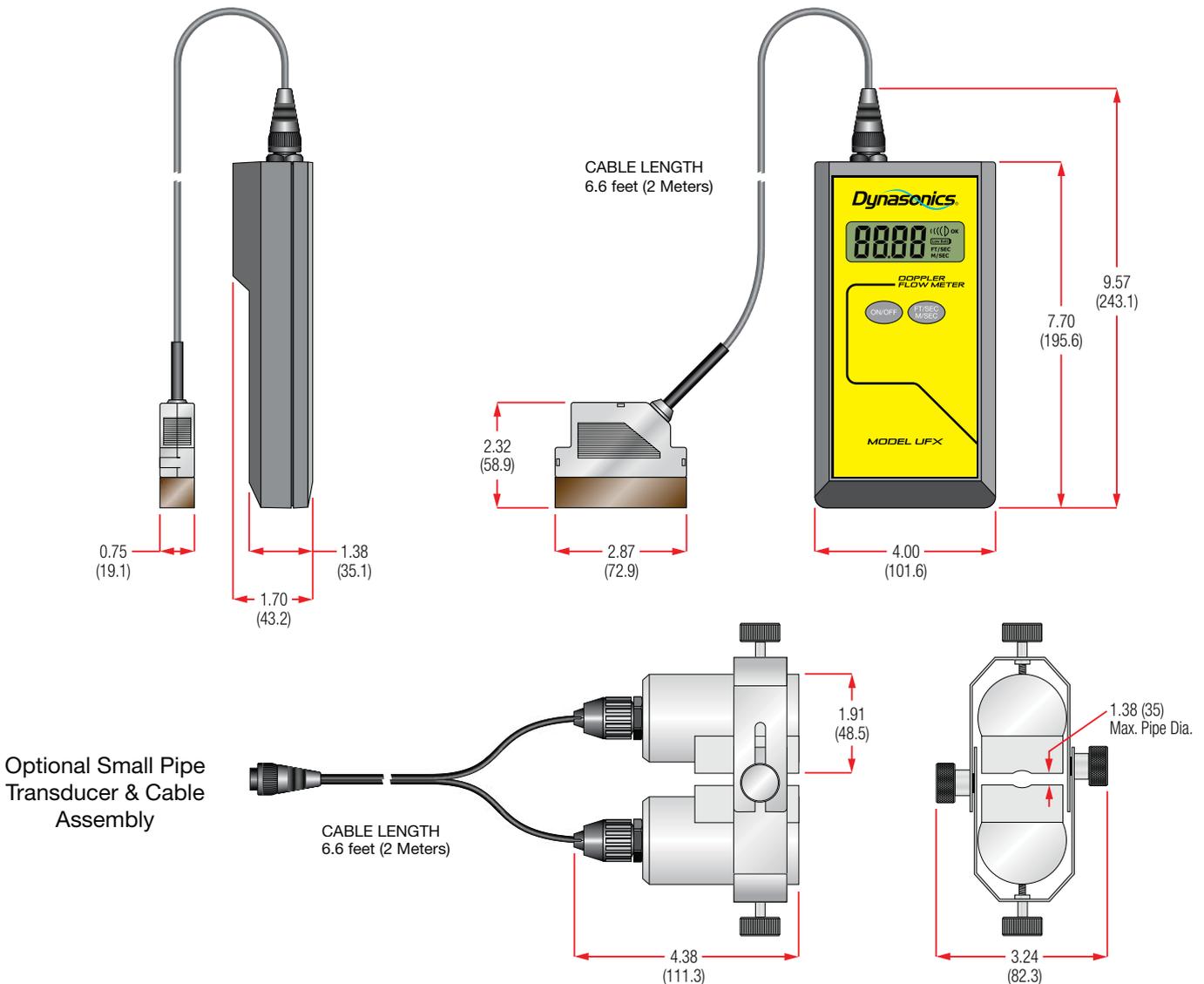
## OPERATING PRINCIPLE

The Series UFX flow meter utilizes an advanced ultrasonic measuring technique, providing accurate, non-invasive, fluid velocity assessment without opening the pipe. The UFX utilizes 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. Transformations that result from the energy reflections are processed and converted to fluid velocity by the UFX's sophisticated software algorithm. The processor also controls all operations of the instrument from its ultra efficient battery management circuitry to a proprietary FIR (Finite Impulse Response) filtration program.



## DIMENSIONAL SPECIFICATIONS

### MECHANICAL DIMENSIONS: INCHES (MM)



## SPECIFICATIONS

<b>Liquid Requirements</b>	100 PPM of 100 micron size suspended solids or entrained gases
<b>Pipe Sizes</b>	(Std) 1" (25 mm) and above (Small pipe) ¼" to 1" (6 to 25 mm)
<b>Flow Range</b>	0.3 to 30 FPS (0.1 to 9 MPS)
<b>Accuracy</b>	±2% of full scale
<b>Display</b>	Single line – four digit LCD readout of velocity (0.7 inches (18 mm) high digits), signal strength, measuring units, and low battery indication
<b>Enclosure Rating Dimensions</b>	NEMA 12X ABS plastic; 1.5 lbs. (0.7 kg) 7.7" H x 4" W x 1.7" D (195.6 mm x 101.6 mm x 43.2 mm)
<b>Transducer Material</b>	Plated body; Ultem® 1000 sensor material
<b>Ambient Temperature</b>	-28 °F to +140 °F (-20 °C to +60 °C)
<b>Liquid Temperature</b>	-40 °F to +180 °F (-40 °C to +82 °C)
<b>Humidity</b>	0 to 95% non-condensing
<b>Supply Voltage</b>	Battery powered; non-rechargeable alkaline, four AA cells; providing over 30 hours of continuous operation
<b>Cable</b>	6.6 feet (2 m) cable and connector
<b>Mounting Method</b>	Clamp-on style with Dow 111 coupling compound

## PART NUMBER CONSTRUCTION

**DUFX1** -   -

### Transducer Type

**B1)** Small Pipe, ¼" to 1" (6 to 25 mm)

**D1)** Std. Pipe, 1" (25 mm) and above

**F1)** Both B1 and D1

### Approvals

\***CE)** CE Generic Light Industrial  
(Leave blank if no approvals are required)

\*CE available with Std. Pipe transducer only.

**Note:** Includes carrying case, one tube silicone couplant (for temporary mounting), and four AA batteries

## SPARE PARTS AND ACCESSORIES

Description	Part Number
Nylon Mounting Strap 30" (750 mm)	D002-2007-002
Couplant, Silicone (for temporary mounting)	D002-2011-001
SS Identification Tag	D003-0825-001
Series DUFX Standard Pipe Transducer	DTUFX-D1
Series DUFX Small Pipe Transducer	DTUFX-B1
Series DUFX Operations Manual	DUFX O&M
UFX Carrying Case	D003-1009-005

Velocity to Volumetric  
Flow Calculator included



## TECHNOLOGY SELECTION GUIDE

### Liquid Type (in order of increasing % of suspended solids)

- Ultrapure Liquids
- Deionized Water
- Water Filter-Bed Effluent
- 
- Chiller Water
- Hydraulic Oil
- 
- Refined Hydrocarbons
- Beverages
- Well Water
- Reclaimed Water
- 
- Cooling Tower
- Ground Water
- 
- Raw Sewage
- Gray Water
- 
- Beverages - Carbonated
- 
- Waste Activated Sludge
- Return Activated Sludge
- 
- Mining Slurries
- 
- Filter Backwash
- 
- Paper Pulp Stock
- 
- Preprocessed Crude Oil
- 
- Primary Sludge
- Lime Sludge
- Digested Sludge
- Dredging Applications
- 
- Concrete



Transit Time

Enhanced Doppler

Doppler

This guide provides general rules for the selection of an appropriate Dynasonics ultrasonic technology – it is neither exhaustive nor absolute. System factors such as temperature, pipe materials, suspended solid composition and liquid velocity can influence product selection. It is best to present application information to a Dynasonics Sales Representative or to the Dynasonics factory for evaluation.

Dynasonics offers the most comprehensive line of ultrasonic transit time and Doppler flow meters in the world. These meters include clamp-on, non-invasive flow meters that require a good acoustical path between the outside of the pipe and the liquid inside. In some instances, such as non-saturated concrete pressure pipe, ultrasonic energy will not readily pass. For these installations, Dynasonics offers an insertion Doppler probe.

Please consult a Dynasonics Sales Representative or the Dynasonics factory to discuss Dynasonics products in your flow measurement application.



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