



# UltraFlo™ UFDD

ULTRASONIC CLAMP-ON FLOW METER



## DESCRIPTION

The UltraFlo™ UFDD Clamp-On Ultrasonic Flow Meter is the ideal flow meter with accurate, easy-to-use, easy-to-install digital doppler technology. The UltraFlo™ UFDD is offered in a portable flow meter design or permanent mount installation. Both are extremely rugged, reliable and durable. The flow meters are housed in a NEMA 4X fully sealed enclosure to withstand the most severe conditions. The patented Digital Doppler technology will measure just about any liquid or fluid from potable water to 30% thickened sludge and fly ash slurries. The easy to read LCD alpha-numeric display, versatile AC & DC power operation, digital communications, batch control and data log events are all packaged in an affordable industrial design. Because the UltraFlo™ UFDD sensors are clamped onto the outside of the pipe, the installation costs are a fraction of installed costs of traditional in-line flow meters. Plus, the sensors and electronics are immune to the process conditions regardless of process pressures, temperatures and build-up or scaling conditions. The Digital Doppler transducers will mount to just about any size pipe regardless of pipe wall thickness.

## FEATURES & BENEFITS

- AC or DC operation, isolated, regulated, module.
- Smart LCD screen featuring high-resolution, 32 character, 2-line alphanumeric providing rate and totalization simultaneously - in Metric & English units.
- Splash proof NEMA 4X case protected from moisture and caustic chemicals.
- Easy configuration for setup and operation with on-screen prompting, quick scrolling menus, display panel keypad, and color coded LED's.
- Non-invasive, submersible, clamp-on transducers
- Standard transducers fit pipe sizes 3/4" and larger pipe O. D.
- RS232 Data Transfer Via DB9 Port or USB Terminal
- Batch Control – Scalable Pulse 12 VDC Nominal Isolated @ 50mA.
- Internal 12 VDC battery (Solar Panel optional).
- Portable & Fixed models available (Provided in NEMA 4X enclosures).
- Data Logger 2-32 Gb Flash Drive with cable and software (optional).

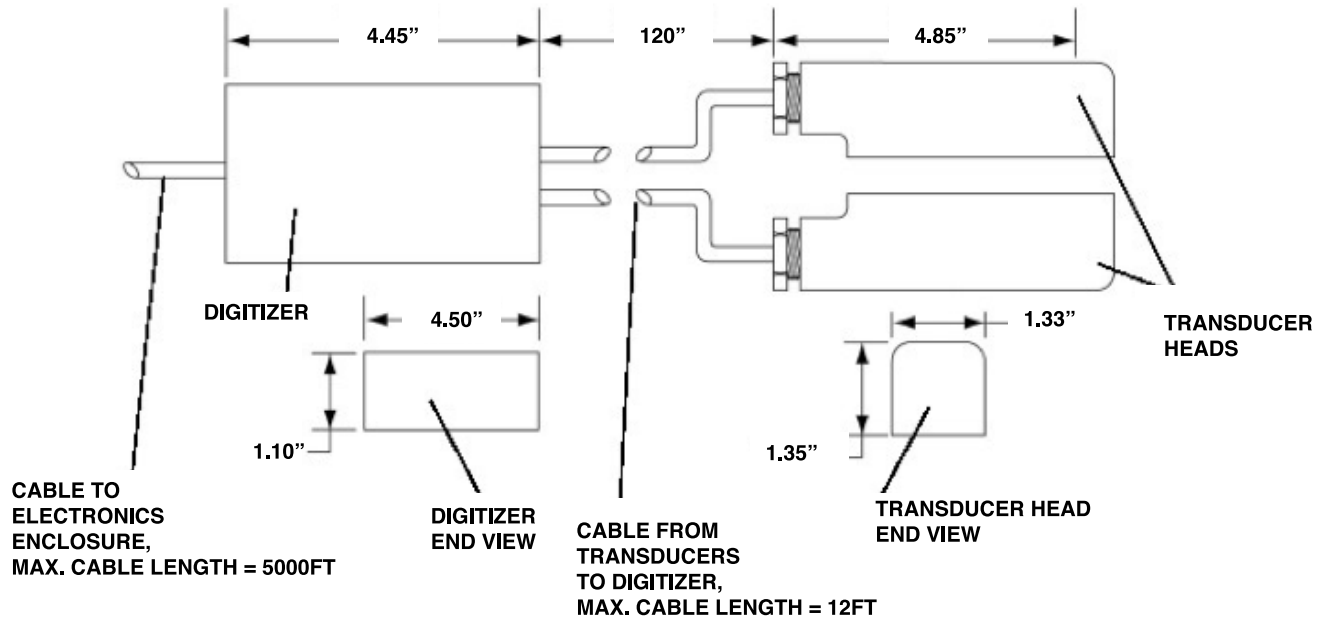


## SPECIFICATION

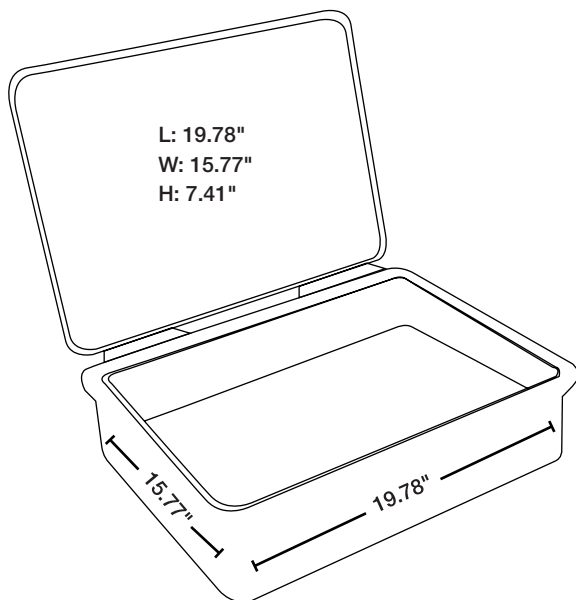
<b>Power</b>	Nominal 150mA 220/117 VAC/12 VDC	<b>Dimensions</b>	Portable: 19 x 15 x 7 Fixed: 10 x 8 x 6
<b>Outputs</b>	4-20mA (Max. z 1000 ohm) Digital Pulse Train (0-12V), Hi & Lo limit Alarms, RS232 & Batch Control	<b>Weight</b>	Portable: 15 Lbs. Fixed: 6 Lbs.
<b>Flow Range (velocity) Volume Determined by Pipe ID</b>	0.50 to 50.0 feet per second	<b>LED Indicators</b>	Green – Power Yellow – Echo Red – Hi/Low Alarm
<b>Accuracy</b>	+/- 1 %	<b>Display</b>	NEMA – 4X hinged (+4° F to +140° F)
<b>Particle Limitations</b>	Min: 35 ppm ; Max: 30% sludge	<b>Transducer</b>	Submersible – Potted, PVDF (-70° F to +300° F)
<b>Max. Pressure</b>	Based on Pipe Specification	<b>Totalizer</b>	12 digit LCD Lifetime Memory Backup.
<b>Max. Temperature</b>	300°F	<b>Rate Meter</b>	4 digit LCD Digital Bar Graph
<b>Pipe ID Range</b>	½" - 999" Doppler	<b>Cable Length</b>	0 to 5000 ft. 25 ft standard
<b>Standard Transducers</b>	Fit pipe sizes 3/4" and larger pipe O.D.	<b>Engineering Units</b>	English & Metric
<b>Linearity</b>	+/- 0.5 %		
<b>Repeatability</b>	+/- 0.1 %		

*Specifications are subject to change without notice.*

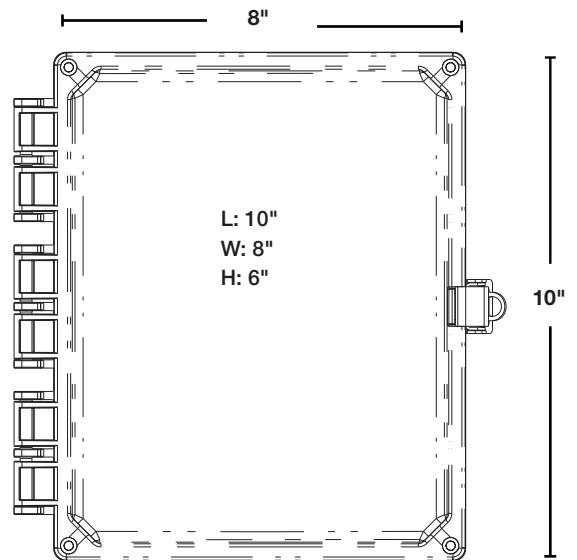
**DIMENSIONS inches**



**PORTABLE UNIT**



**FIXED UNIT**



## THEORY OF OPERATION

The UltraFlo™ Doppler ultrasonic flow meter measures flow velocity by sensing signals from reflective materials within a liquid and measuring the frequency shift due to the motion of these reflective materials. The Doppler effect states that the received frequency is a function of the transmitted frequency and the relative motion between transmitter and the receiver. The classic example of the Doppler effect is the train whistle increasing in pitch to the listener at the station as the train approaches, then decreasing in pitch as the train moves away from the station. To the person riding on the train, the pitch remains the same. The increasing pitch is due to phase-front compression and the decreasing pitch is due to phase-front expansion. The Doppler flow meter uses this effect to measure the velocity of a liquid through a pipe wall.

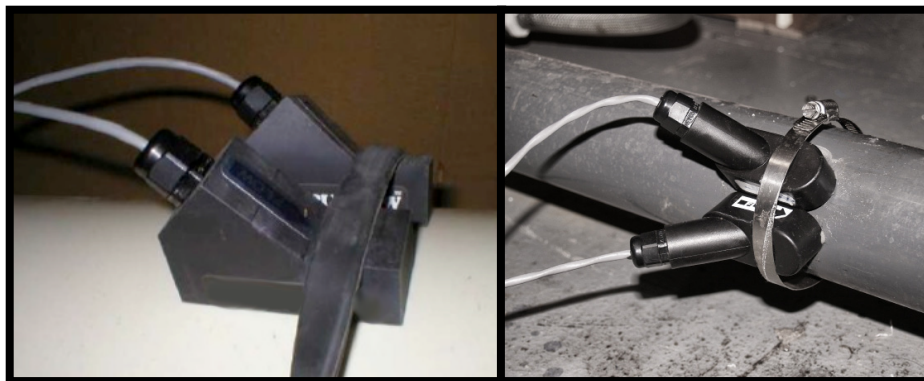
PORTABLE UNIT

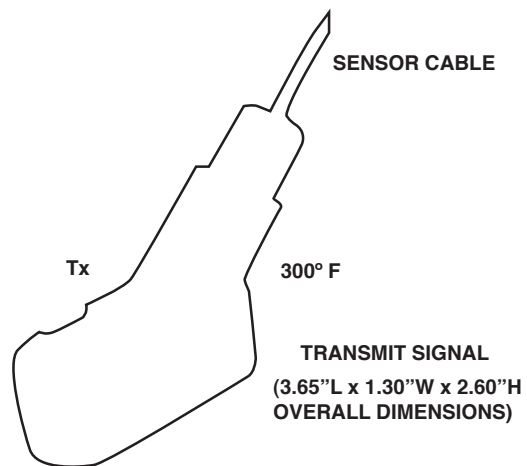
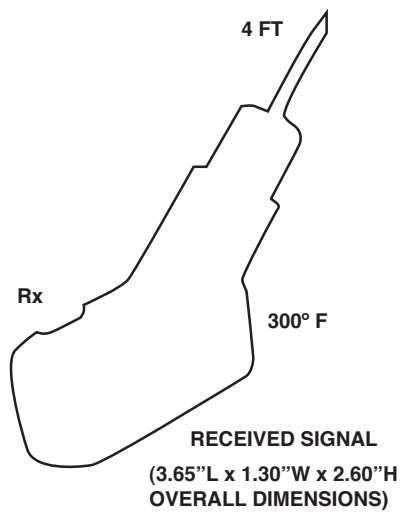
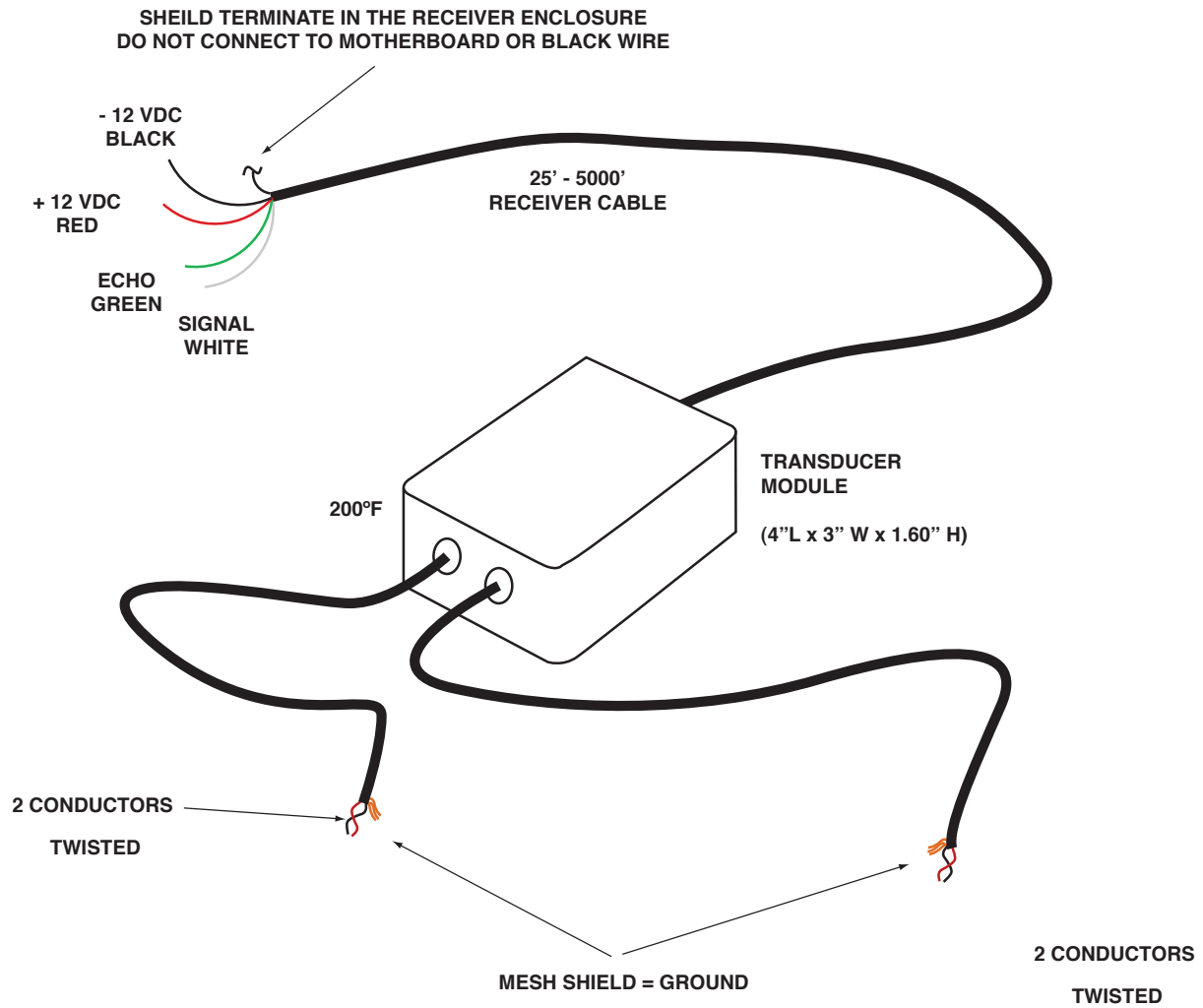


FIXED UNIT



TRANSDUCERS





## Ordering Information

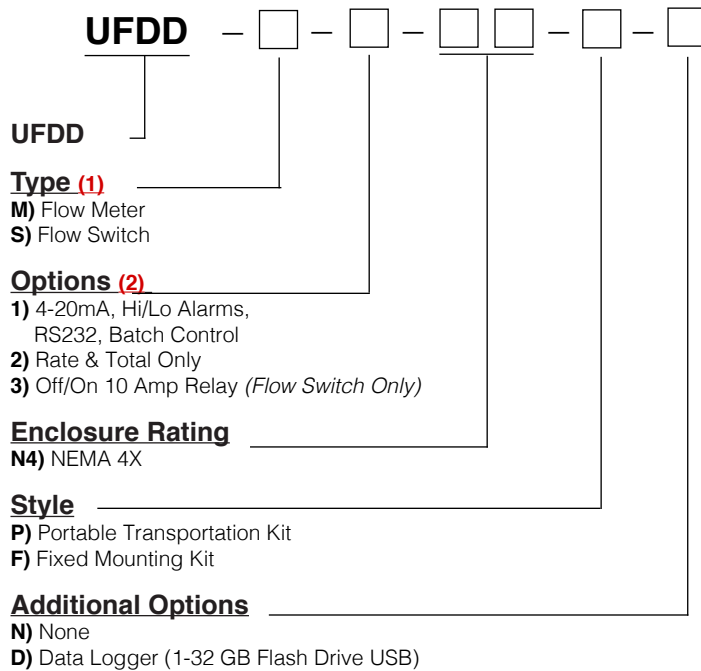
### FLO-CORP MODEL NUMBER BUILDER

For Assistance Call **877.356.5463**

Use the diagram below, working from left to right to construct your FLO-CORP Model Number.  
Simply match the category number to the corresponding box number.

**Example: UFDD-M-1-N4-P-N**

UltraFlo™ Ultrasonic Doppler Flow Meter with 4-20mA, Hi/Lo Alarms, RS232 and Batch Control options in a NEMA 4X enclosure with a Portable Transportation Kit and no additional options.



*Portable Transportation Kit*



*Fixed Mounting Kit*

**Ordering Notes:**

- (1)** Select the best configuration based on your requirements
- (2)** Option (3) "Off/On 10 Amp Relay" can only be selected with the Flow Switch.