

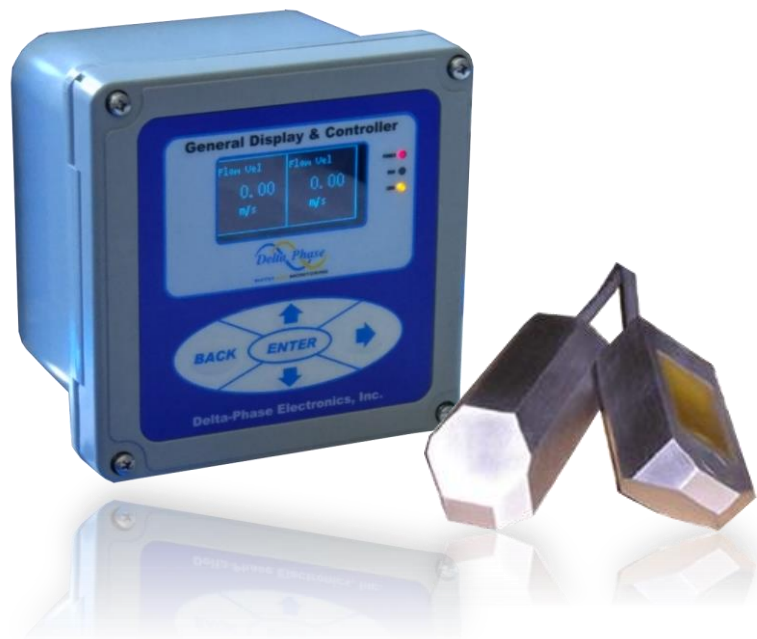
## ULTRASONIC FLOW

# Alpha2000: Ultrasonic Doppler Flowmeter

Digital technology for optimized measures

### TYPICAL APPLICATIONS

- Water, sea water, river water.
- Waste water, sludge.
- Brine solutions, slurries.
- Other applications with liquids having at least 50 PPM and 30-micron size suspended particles.



The Alpha2000 is an ultrasonic Doppler Flowmeter consisting of a transmitter, a pair of clamp-on transmit/receive sensors or an insertion sensor. The transmitters' electronics is specifically designed to analyze, separate and reject noise frequencies. For clamp-on sensor, the ultrasonic sound waves are coupled from the sensor, through the pipe walls and are reflected off the particles in the fluid and back through the pipe walls to the sensor

### Other Features Include:

- No moving parts to wear out.
- Simple installation.
- Low cost unit with IP66 enclosure.
- Stable readings are assured with a design immune to vibrations and temperature changes.
- Unique ultrasonic sensors & circuitry using Doppler technique.
- Typical field performance is  $\pm 0.5\%$  for repeatability and up to  $\pm 2\%$  of velocity depending on fluid conditions.
- Optional: Insertion Sensor and Spool Piece or flow tube fabrication

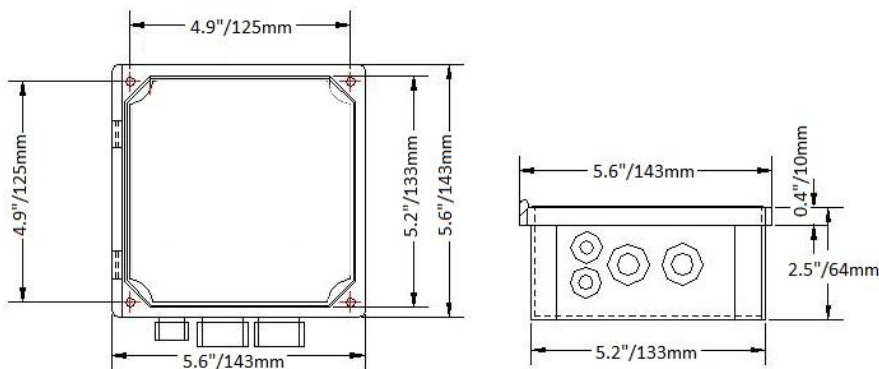
**DELTA-PHASE ELECTRONICS, INC.**

1502 E. Warner Ave., Suite B, Santa Ana, CA 92705 U.S.A. TEL: (714) 866-8070 [www.delta-phase.us](http://www.delta-phase.us)

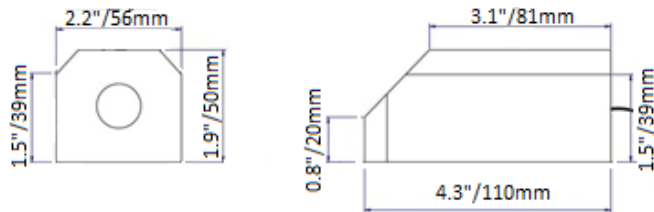
## SPECIFICATIONS

Alpha2000 Ultrasonic Doppler Flowmeter	
Measure principle	Ultrasonic Doppler method
Accuracy	For flows at 1 FPS (0.3 m/s) or greater to $\pm 2\%$ of velocity reading for Reynolds #'s above 100,000 depending on fluid conditions. To $\pm 5\%$ of velocity reading for Reynolds #'s 10,000 -100,000 (3:1 any range approximately) depending on fluid conditions. Linearity and repeatability to $\pm 0.5\%$ under the same pumping conditions.
Flow Range	0.3 to 40 FPS (0.09 to 12.19 m/s) liquids. 50 parts per million (PPM) of a minimum of 30 micron size suspended solids, turbulence or bubbles to ensure accurate, repeatable flow measurement.
Pipe Size	0.5' (13mm) to 100' (2.5m)
Operating Temp.	-40 to 122 °F (-40 to 50 °C) Transmitter; 14 to 158 °F (-10 to 70 °C) Sensors
Humidity	0 to 100% R.H.
Power Supply	18 to 36VDC or 90 to 240VAC 50/60Hz
Outputs	Analog: 4 to 20 mA, Max 600 $\Omega$ ; Pulse, Two SPDT Relay 5A@250VAC / 5A@30VDC
Digital Interface	RS485 Modbus RTU
Display	OLED Screen, Display Parameter, Value, % and Unit
Enclosure	polycarbonate material for transmitter, IP66 Aluminum for clamp-on and 316SS for insertion sensors, IP68

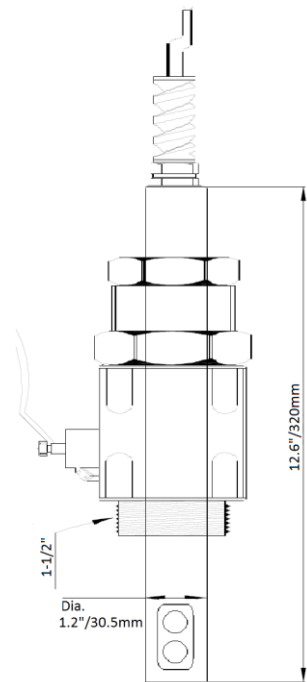
## DIMENSION



Transmitter



Clamp-On Sensor



Insertion Sensor



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