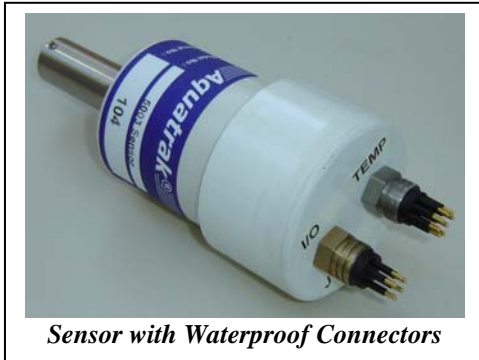


Aquatrak®

A Proven Instrument for Absolute Liquid Level Measurement

Aquatrak® 5000 Series Sensor



Sensor with Waterproof Connectors



Sensor with Watertight Connectors

Applications

- Tide and Sea State
- River Stage
- Groundwater
- Head/Tail Water
- Tank Ullage

Technology

Unique patented means of ratiometric time comparisons of sequential sonic/pressure pulses. Environmentally protected within a small diameter ranging tube. Aquatrak instruments reliably provide performance unequalled in the industry.

Accuracy

Self-calibrated measurement correction for ambient temperature, pressure, and gas density within the calibrated range(s); yields accuracy of better than $\pm 3\text{mm}$.

Reliability

Non-mechanical implementation with no bushings, bearings, gears, floats, or immersed active elements. Aquatrak sensors have a field-proven reliability record of better than 1,000,000 hours MTBF.

Versatility

The all-digital 5000 Sensor with internal microcomputer relieves the host system of level measurement routines. RS-232 and SDI-12 interfaces make it compatible with commonly-used data loggers, computers, controllers, and modems.

Product Enhancements

The Aquatrak 5000 Series continues the tradition of accuracy and reliability of its predecessors. Added capabilities and features include:

- Repackaged as a single integrated unit. The electronics is now in the sensor head.
- Reduced power consumption.
- Field programmability – applications code loadable via the RS-232 port.
- Includes three external temperature probes.
- Concurrent Measurements.

Battery Powered

The sensor is designed for continuous long-term unattended operation; it draws less than 9 ma operating, less than 7 ma quiescent.

Durability

The sensor and electronics are integrated into a single unit and are enclosed and sealed in a durable shock resistant PVC housing.

Economical

The lightweight sensor and range tube assembly is easily mounted at any angle from which the tube is immersed to the lowest significant level with minimal site preparation. Sensor to Data Collection Platform separation up to 1,000 feet can be accommodated.

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A SMART INSTRUMENT

The Aquatrak 5000 Sensor calculates the true average level even in the presence of waves and surging liquid surfaces. The Sensor can be configured via its communication ports for virtually any site-unique conditions. The sample rates, number of samples averaged, and data requested are selectable. Continuous measurements or exclusive data sets without outlier bias are standard operating modes.

WAVES AND SEA STATE

The US NOS standard averaging algorithm is used to determine the standard deviation for each data set. This value may be used in post processing to determine the average wave height during the sample period. Optionally, Aquatrak can provide specific programming for the 5000 Sensor to directly provide this information.

Technical Specifications

Measurement		Accuracy	
Dynamic Range		Calibration	
Standard	>35 feet (10 meters)	Standard	±0.025%
Optional	>50 feet (15 meters)	Optional	±0.01%
Special	75 feet (23 meters)	Nonlinearity	±0.02%
Rate of Change	±10 feet (±3 m/sec)	Precision, Repeatability	±0.01%
Units	English or Metric	Stability, Drift, 1 year	0
Resolution	0.0033 feet (1 mm)	Temperature Drift	<1 ppm/°C
Rate Proportionate	1.2 – 2.4 per sec		
Sample Rate Averaged	1.0 per sec	ASCII Serial Communication	
over 2 to 255 Samples		Selectable Baud Rate (RS-232)	300 to 9600
Interval	Host Determined	Format	Serial ASCII
Electrical		RS-232	N-8-1
Input Voltage	12.5 ±2 volts DC	SDI-12 (1200 Baud only)	E-7-1
Operating Current	9 ma		
Quiescent Current	7 ma	Physical	
Environmental		Sensor Assembly	
Operating Temperature	-40 to +55 °C	Diameter	3.25 in (8.25 cm)
Storage Temperature	-55 to +60 °C	Height	9 in (22.8 cm)
Humidity	0 to 100%	Weight	2.5 lb (1.14 kg)
		Shipping Weight (1 Carton)	5 lb (2.3 kg)

Aquatrak Corporation is committed to maintaining the high quality levels that this product has provided. Nearly 2000 Aquatrak instruments for hydrographic, hydrologic, and industrial tank gauging applications have been delivered. They have earned a worldwide reputation as the most accurate and reliable instruments for acquiring long term level measurements for

boundary determination, dredge surveys, dam safety, and hostile chemical tank control.

At the conclusion of seven years of comparative laboratory and field testing by the US National Ocean Services, the Aquatrak was selected by the US NOAA and the Australian National Tidal Facility to be their Primary Standard Instrument for tidal programs.

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