

AQUATRAK ABSOLUTE LIQUID LEVEL SENSOR & CONTROLLER



APPLICATIONS

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



TECHNOLOGY

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

ACCURACY

Self-calibrated measurement correction for ambient temperature, pressure, and gas density within the calibrated range(s), yields an accuracy of better than ± 3 mm. The 4100 controller is enclosed in a gasketed, epoxy coated cast aluminum box, the stainless steel transducer is sealed in silicone within shock resistant PVC.

RELIABILITY

Non-mechanical implementation without bushings, bearings, gears, floats, or immersed active elements. Aquatrak sensors have a field proven reliability record of better than 1,000,000 hours MTBF. 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. Controller to transducer separation up to 1,000 feet can be accommodated.

VERSATILITY

The all digital Aquatrak 4100 controller with its internal microcomputer relieves the host system of the liquid level measurement routines. RS-232 and SDI-12 or EIA 485 interfaces make it compatible with the most commonly used data loggers, computers, controllers, and modems.

BATTERY POWERED

All CMOS circuitry draws less than 40 milliamps operating, under one milliamp quiescent. These products were designed specifically for continuous long term unattended data acquisition.

DURABILITY

The 4100 controller is enclosed in a gasketed, epoxy coated cast aluminum box, the stainless steel transducer is

sealed in silicone within shock resistant PVC.

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. Controller to transducer separation up to 1,000 feet can be accommodated.

A SMART INSTRUMENT

The Aquatrak 4100 calculates the true average level even in the presence of waves and surging liquid surfaces. The 4100 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 routines.

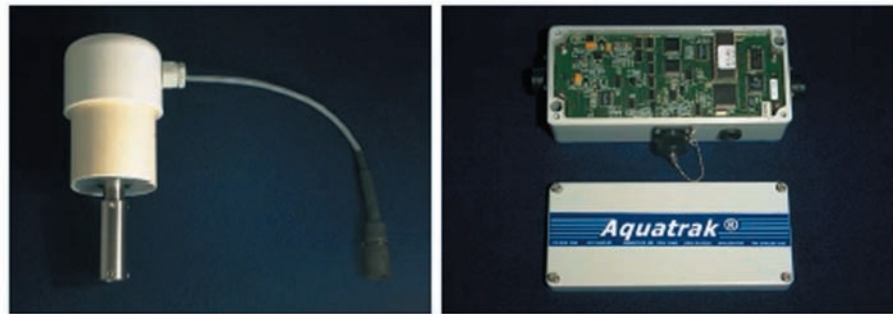
WAVES AND SEA STATE

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 4100 to directly provide this information.

ORDERING

5600-0161	Aquatrak, Acoustic Water Level Transducer (also requires Controller, p/n 5100-0404)
5100-0404	Aquatrak, Acoustic Water Level Controller

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SUTRON

SPECIFICATIONS			
MEASUREMENT		ACCURACY	
Dynamic Range		Calibration	
Standard	>35 feet (10 meters)	Standard	± 0.025%
Optional	>59 feet (15 meters)	Optional	± 0.01%
Special	75 feet (23 meters)	Non-linearity	± 0.02%
Rate of Change	± 10 feet (± 3 m/sec.)	Precision, Repeatability	± 0.01 %
Units	English (Metric)	Stability, Drift, 1 year	0
Resolution	0.001 feet (1 mm)	Temperature Drift	< 1 ppm/°C
Rate Proportionate	1.2 - 2.4 per sec.		
Rate Averaged 2 to 255	1.0 per second		
Interval	Host Determined		
ELECTRICAL		ASCII SERIAL COMMUNICATION	
Voltage DC	12.5 ± 2 volts	Selectable Baud Rate	300 to 9600
Operating Current	< 40 mA	RS-232	N-8-1
Quiescent Current	< 1 mA	SDI-12	E-7-1
Average Power	20 mW (4 sample average)	EIA-485	Consult Factory
ENVIRONMENTAL		PHYSICAL	
Operating Temperature	-40 to 55 °C	Controller 4100	
Storage Temperature	-55 to 60 °C	Size	9 x 3.5 x 2.5 inch (23 x 9 x 6 cm)
Humidity	0 to 100%	Weight	1.5 lbs. (0.68 kg.)
		Sensor	
		Size	4 inch dia. 8 inch ht. (9 cm dia. 21 cm ht.)
		Weight	2.5 lbs. (1.14 kg.)
		Shipping (1 carton)	5 lbs. (2.23 kg.)

At the conclusion of seven years of comparative laboratory and field testing by the US National Ocean Services, the Aquatrak Series 3000 was selected by US NOAA and the Australian National Tidal Facility to be their Primary Standard Instrument for tidal programs.