



water monitoring instruments

BELL
Flow Systems

AQUASONDE

Multiparameter water quality data logging sondes

The AquaSonde brings built in data logging capabilities to our range of reliable multiparameter water quality testing probes. These self powered sondes can be deployed for extended periods of data collection without the need for an external data logger.



The AquaSondes are powered by internal lithium batteries to extend the duration of your deployments for as long as 180 days, model and logging rate dependent.

All AquaSondes feature an internal memory that is capable of storing up to 150,000 full data sets, that equates to over 3 years continuous data logging.

These logging devices can be deployed on their own for a discrete deployment or they can be deployed with a vented cable allowing for barometric compensation of measurements, specifically depth and % saturation of dissolved oxygen.

Each AquaSonde is supplied with a QuickDeploy Key, used to initiate the probe's logging regime and SondeLink PC software for complete logger set up, sensor calibration and data collection.

AquaSonde Quick-Deploy Key



Logging/Event/Cleaning Rates

Programmable. Fastest logging rate 0.5Hz. Slowest logging rate 120 hours.

Event testing and logging on any single parameter programmable between 1 minute and 99 hours. Programmable cleaning rate (AS-7000 only)

PC Application

SondeLink free PC application provides the following features via an integrated USB interface:

- Live data viewing
- Live data logging directly to PC
- Full calibration with calibration report generation
- Retrieval of logged data
- Logged data output to spreadsheet and text files
- Full setup utility
- Site name and GPS geotagging



SondeLink PC application



Quick Deploy Key

Each AquaSonde is supplied with a Quick Deploy Key. When fitted to the AquaSonde, this unique device performs the following tasks:

- Seals the connector
- Automatically starts the pre-programmed logging regime
- Provides instant visual indication of AquaSonde health, battery and memory condition

This allows all programming of the AquaSonde to be performed at your office using the PC application and the logging regime to be started at the precise time of deployment. It also provides peace of mind that the AquaSonde is operating correctly at the time of deployment.

Vented Data Cable Option

All models feature an internal barometric pressure sensor that is used when calculating Depth and percentage saturation of Dissolved Oxygen.

If the AquaSonde is to be deployed for more than a day at a time and accurate Depth and %DO values are required, a vented cable is recommended.

For profiling, dip testing or short-term deployment during which time the change in barometric pressure will be negligible, a vented cable is not necessary.

Vent / Data Hub

This option is a termination device for the vented cable that allows a desiccant bottle to be attached and provides a USB port for data retrieval and a visual indication of AquaSonde health, battery and memory condition.

By attaching a PC running SondeLink to the USB port, direct access can be gained to the AquaSonde allowing live data viewing, live data logging directly to PC, retrieval of logged data and full setup, all whilst the AquaSonde is submerged.



AquaSonde Physical Specifications:

	AQUASONDE-2000	AQUASONDE-5000	AQUASONDE-7000
IP	IP68 (permanent immersion)	IP68 (permanent immersion)	IP68 (permanent immersion)
Depth	Min 75mm. Max 100m*	Min 75mm. Max 100m*	Min 75mm. Max 100m*
Temperature	-5°C - +70°C	-5°C - +70°C	-5°C - +70°C
Dimensions	42 x 515mm	58 x 570mm	77 x 635mm
Weight (Inc Batt)	0.9kg	1.9kg	3.4kg
Batteries **	2x 3.6V Lithium C cells. Life greater than 6 months.	2x 3.6V Lithium D cells. Life greater than 10 months.	2x 3.6V Lithium D cells. Life greater than 9 months.
Memory capacity	150,000 full data sets	150,000 full data sets	150,000 full data sets

* 100m submersion for profiling, max duration 12 hours, 30m submersion suitable for permanent deployment.

** Battery life estimated at 20°C with a logging rate of 15 minutes and a cleaning rate (AS-7000 only) of 12 hours, may vary with electrode options.

AquaSonde Sensor Specifications



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Standard Parameters	Dissolved Oxygen	Range	0 – 500.0% / 0 – 50.00 mg/L
		Resolution	0.1% / 0.01mg/L
		Accuracy	0 - 200%: ± 1% of reading, 200% - 500%: ± 10%
	Depth AP-2000/ AP-5000	Range	± 0 – 60.00 m (60m max displayed depth, max probe immersion 100m)
		Resolution	1cm
		Accuracy	± 0.5% FS
	Depth AP-7000	Range	± 0 – 99.99 m
		Resolution	1cm
		Accuracy	± 0.2% FS
	Conductivity (EC)	Range	0 – 200 mS/cm (0 - 200,000 µS/cm)
		Resolution	3 Auto-range scales: 0 – 9999 µS/cm, 10.00 – 99.99 mS/cm, 100.0 – 200.0mS/cm
		Accuracy	± 1% of reading
	TDS *	Range	0 – 100,000 mg/L (ppm)
		Resolution	2 Auto-range scales: 0 – 9999mg/L, 10.00 – 100.00g/L
		Accuracy	± 1% of reading
	Resistivity *	Range	5 Ω • cm – 1 MΩ • cm
		Resolution	2 Auto-range scales: 5 – 9999 Ω • cm, 10.0 – 1000.0 KΩ • cm
		Accuracy	± 1% of reading
	Salinity *	Range	0 – 70 PSU / 0 – 70.00 ppt (g/Kg)
		Resolution	0.01 PSU / 0.01 ppt
		Accuracy	± 1% of reading
	Seawater Specific Gravity *	Range	0 – 50 st
		Resolution	0.1 st
		Accuracy	± 1.0 st
	pH	Range	0 – 14 pH / ± 625mV
		Resolution	0.01 pH / ± 0.1mV
		Accuracy	± 0.1 pH / ± 5mV
	ORP	Range	± 2000mV
		Resolution	0.1mV
		Accuracy	± 5mV
	Temperature (non freezing)	Range	-5°C – +50°C (23°F – 122°F)
		Resolution	0.01°C / 0.1°F
		Accuracy	± 0.5 °C

* Readings calculated from EC and temperature electrode values

ISE	Ammonium	Range	0 – 9,000mg/L (ppm)
		Resolution	2 Auto-range scales: 0.00 - 99.99 mg/L, 100.0 – 8,999.9 mg/L
		Accuracy	± 10% of reading or 2ppm (whichever is greater)
	Ammonia†	Range	0 – 9,000mg/L (ppm)
		Resolution	2 Auto-range scales: 0.00 - 99.99 mg/L, 100.0 – 8,999.9 mg/L
		Accuracy	± 10% of reading or 2ppm (whichever is greater)
	Chloride	Range	0 – 20,000mg/L (ppm)
		Resolution	2 Auto-range scales: 0.00 - 99.99 mg/L, 100.0 – 19,999.9 mg/L
		Accuracy	± 10% of reading or 2ppm (whichever is greater)
	Fluoride	Range	0 – 1,000mg/L (ppm)
		Resolution	2 Auto-range scales: 0.00 - 99.99 mg/L, 100.0 – 999.9 mg/L
		Accuracy	± 10% of reading or 2ppm (whichever is greater)
	Nitrate	Range	0 – 30,000mg/L (ppm)
		Resolution	2 Auto-range scales: 0.00 - 99.99 mg/L, 100.0 – 29,999.9 mg/L
		Accuracy	± 10% of reading or 2ppm (whichever is greater)
	Calcium	Range	0 – 2,000mg/L (ppm)
		Resolution	2 Auto-range scales: 0.00 - 99.99 mg/L, 100.0 – 1,999.9 mg/L
		Accuracy	± 10% of reading or 2ppm (whichever is greater)

† Ammonium electrode required. Readings calculated from ammonium, pH and temperature values.

Optical	Turbidity	Range	0 – 3000 NTU
		Resolution	2 Auto-range scales: 0.0 - 99.9 NTU, 100 - 3000 NTU
		Accuracy	± 5% of auto-range scale
	Chlorophyll	Range	0 – 500.0 µg/L (ppb)
		Resolution	2 Auto-range scales: 0.00 - 99.99 µg/L, 100.0 - 500.0 µg/L
		Repeatability	± 5% of reading
	Phycocyanin (freshwater BGA)	Range	0 – 300,000 cells/mL
		Resolution	1 cell/mL
		Repeatability	± 10% of reading
	Phycerythrin (marine BGA)	Range	200,000 cells/mL
		Resolution	1 cell/mL
		Repeatability	± 10% of reading
	Rhodamine WT Dye	Range	0 – 500 µg/L (ppb)
		Resolution	2 Auto-range scales: 0.00 - 99.99 µg/L, 100.0 - 500.0 µg/L
		Accuracy	± 5% of reading
	Fluorescein Dye	Range	0 – 500 µg/L (ppb)
		Resolution	2 Auto-range scales: 0.00 - 99.99 µg/L, 100.0 - 500.0 µg/L
		Accuracy	± 5% of reading
	Refined Oil	Range	0 – 10,000 µg/L (ppb) (Napthalene)
		Resolution	0.1 µg/L
		Repeatability	± 10% of reading
	CDOM / FDOM	Range	0 – 20,000 µg/L (ppb) (Quinine Sulphate)
		Resolution	2 Auto-range scales: 0.0 – 9,999.9 µg/L, 10,000 – 20,000 µg/L
		Repeatability	± 10% of reading

The accuracy figures quoted throughout this document represent the equipment's capability at the calibration points at 25°C. These figures do not take into account errors introduced by variations in the accuracy of calibration solutions and errors beyond the control of the manufacturer that may be introduced by environmental conditions in the field. Accuracy in the field is also dependent upon full calibration and minimal time between calibration and use.