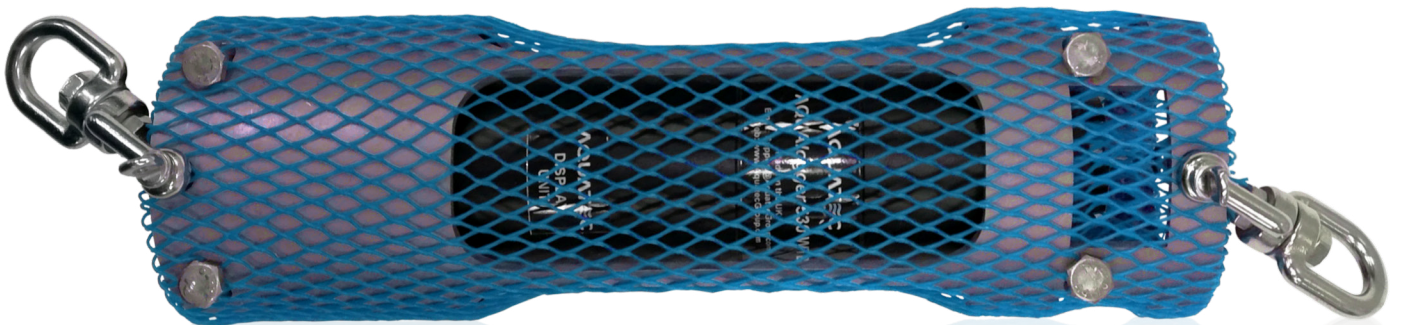


# WIRELESS TEMPERATURE & DEPTH LOGGERS

AQUAlogger® 530WTD - Buyer's Guide



# AQUAlogger® 530WTD

The AQUAlogger 530WTD has an innovative design that includes the ability to transfer stored data automatically to a remote computer via wireless technology and display temperature and depth data, removing the need for a cabled connection or manual interaction. With a rugged, compact design, it is suitable for use on a variety of vessels and platforms, including fishing gear, research ships, survey boats, commercial fishing vessels and moorings.

## KEY FEATURES

### MEASURE TEMPERATURE AND DEPTH

- Measure temperature and pressure in a self-contained logger
- Pressure:  $\pm 0.2\%$  FS accuracy, 0.01% FS resolution
- A range of pressure sensors available - 5 bar, 11 bar and 51 bar
- Temperature:  $\pm 0.05^\circ\text{C}$  accuracy, better than  $0.007^\circ\text{C}$  resolution
- Flexible sampling with rates up to 1 Hz

### USING THE LOGGER

- Wireless logger – the AQUAlogger 530 is set up and data downloaded using the AQUAlogger reader unit
- Robust cage – the logger is designed for use on commercial fishing vessels and has been shock tested to US standards
- Repeat deployment – depth trigger and automated data download make the logger ideal for repeat profiles
- Automation - the logger will automatically transfer the collected data wirelessly to a designed PC or laptop on retrieval

### DEPLOYING THE LOGGER

The AQUAlogger 530 is easy to set up with the AQUAtalk deployment wizard:

- Standard or advanced modes
- Continuous or burst sampling – sample continuously or choose burst sampling, with variable burst intervals, samples per burst and in burst sample rates
- Sample averaging – average data to save memory
- Depth trigger – start and stop logging at pre-determined depths

### CROWDSOURCING & CITIZEN SCIENCE

- Multiple instruments can be used to crowdsource data from vessels of opportunity, with data automatically transferred to a central location and accessed remotely.
- The level of automation available makes the instrument ideal for use by citizen scientists



# USING THE AQUAlogger® 530WTD

## The AQUAlogger 530 system

The AQUAlogger 530 wireless temperature and depth logger is a self-contained data logger, with integral memory and battery. It has no connector, and instead communicates to a separate reader unit wirelessly. The instrument measures temperature and depth to 500m and is suitable for use in freshwater and marine environments. The logger will automatically transmit stored data, process the information and produce a graph on your computer when retrieved from the water.

The AQUAlogger 530 reader is required to set up deployments and download data. The reader connects to the computer via a USB cable and is supplied with AQUAtalk, Aquatec's user-friendly software. The logger communicates to the reader wirelessly up to 100m away (providing there is line of sight). An indoor reader is also available.

## DESIGN FOR USE IN COMMERCIAL VESSELS

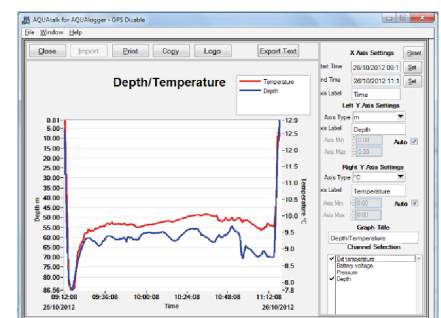
The AQUAlogger 530 was developed for use on commercial fishing vessels and is fitted with a durable and robust cage for protection. It has been shock-tested to US standards, and can be attached to lobster pots, nets and other fishing equipment.

Automation of data download and display (described below) minimises the effect of the instrument on commercial vessel operations. Providing there is line of sight with the reader, the logger may not need to be detached to download the data.

Input from an external GPS module can be used to add a location to the data collected. Two options are available - logger moving with the boat (GPS is logged every second and when the data is uploaded, every measurement will be tagged with the GPS position for the matching time) or logger deployed independently (a single GPS position will be used to tag all data points).

## AUTOMATION

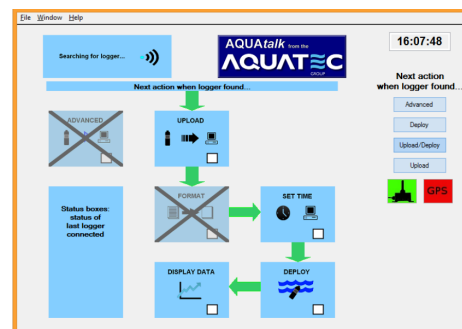
The AQUAlogger 530 features automatic data transfer - data is transmitted wirelessly to a designated PC or laptop once the equipment has surfaced. Once the data is transmitted, a graph displaying the latest deployment automatically pops up to the front of the computer screen.



# DEPLOYING THE AQUAlogger® 530WTD

## STANDARD MODE

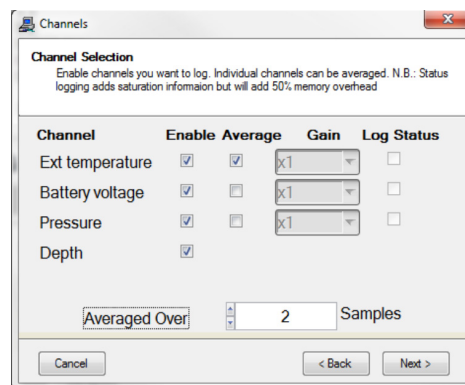
The AQUAtalk software features a deployment wizard to assist with setting up the logger. In standard mode, a main screen gives an overview of the activities and processes, and progress through the steps of setting up and deploying the logger, and later uploading and displaying the data.



An advanced mode is also available for more experienced users.

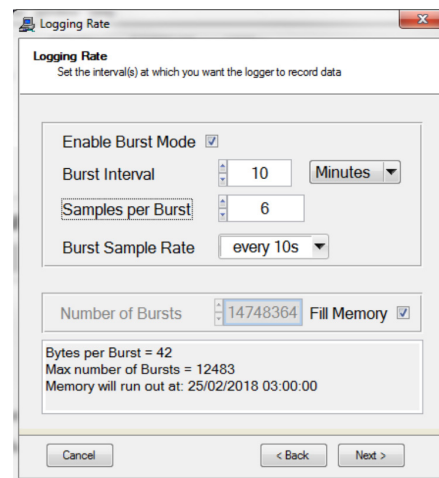
## SAMPLING REGIME

The deployment wizard allows you to choose the parameters to log and set up the sampling regime.

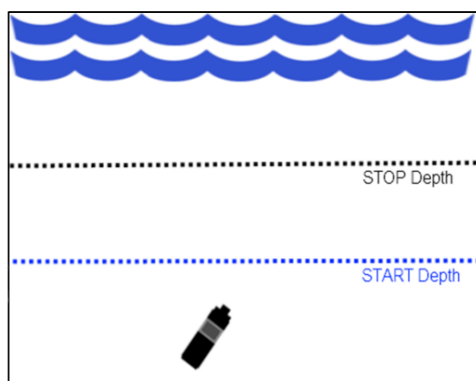


## DEPTH TRIGGER

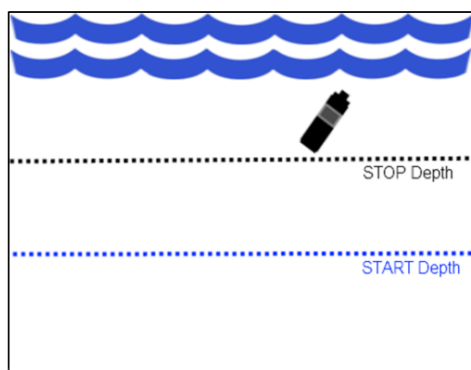
You can start and stop logging the data depending on the depth of the logger. This allows the memory and battery life to be maximised and only relevant data collected. When setting the 'Stop' depth, two options are available: The logger is stopped completely and no more data will be collected; or The 'session' is stopped and the logger will start collecting data again if it falls below the 'Start' depth.



Logger is below the start depth and begins logging on the next scheduled sample.



Logger is above the 'stop' depth and stops logging.



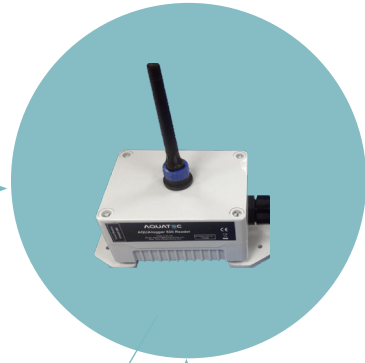


# ACCESSING YOUR DATA



The unit is deployed on fishing nets or pots. Logging starts and stops when pre-set depths are reached.

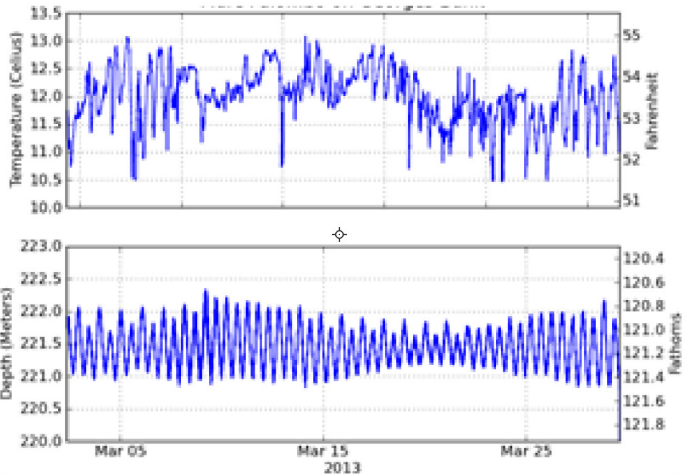
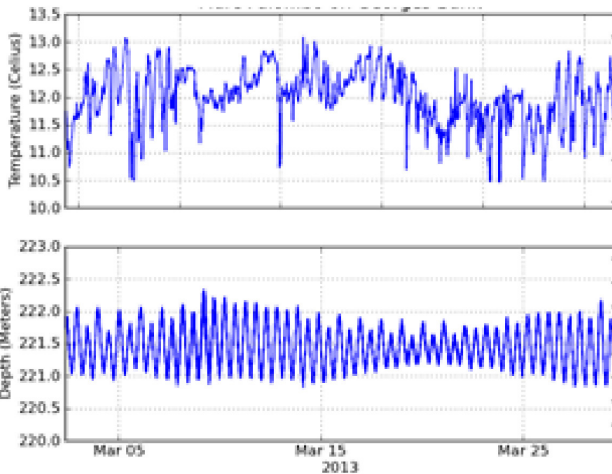
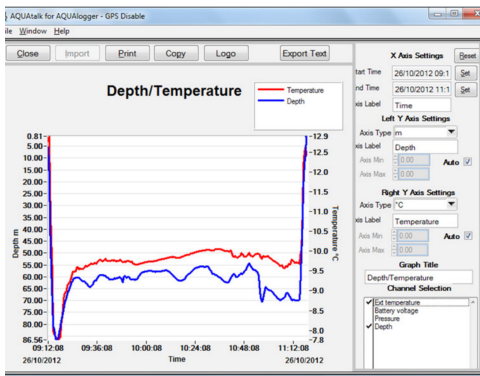
On retrieval, the logger transmits data back to the reader unit, up to 100m away.



The reader unit is mounted on the outside of the vessel's wheelhouse.



Data is downloaded to a connected PC and a graph showing the last deployment is displayed automatically.



# ACCESSING YOUR DATA

## GATHERING DATA FROM MULTIPLE INSTRUMENTS

The AQUAlogger® 530WTD can be used as a tool for crowdsourcing large amounts of data from different vessels of opportunity, due to the automated functionality and robust design.

## CROWDSOURCING WITH FISHING VESSELS

AQUAlogger® 530 instruments are deployed on multiple vessels to capture temporal and spatial variability. When vessels return to port, the data is automatically downloaded to a central location via WiFi or mobile network. Data is accessible via Aquatec's web portal.



## CITIZEN SCIENCE

Due to the level of automation built into the system, AQUAlogger® 530 instruments are ideal for citizen science projects. In addition to the supplied reader, the unit can be wirelessly connected Bluetooth enabled devices, including tablets. Advanced starter kits are available with laptops or tablets, including pre-loaded software and external GPS units where needed.

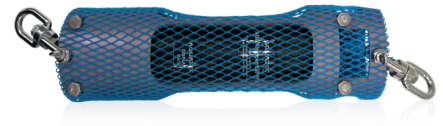


# SELECTING YOUR INSTRUMENT

## STANDARD LOGGERS

### AQUAlogger® 530 WTD

Temperature and depth logger  
40, 100 or 500 m rated  
Includes cage and magnet



## HIGH-SPEED TEMPERATURE LOGGERS

### AQUAlogger® 530 WHSTTD

High-speed temperature and depth logger  
40, 100 or 500 m rated  
Includes cage and magnet



## STARTER KIT

### AQUAlogger® 530 WTD

High-speed temperature and depth logger  
40, 100 or 500 m rated  
Includes cage and magnet

### Reader Unit

AQUAlogger® 530 reader  
AQUAtalk® software

### Transit case

Holds up to 1 logger, a reader unit and accessories



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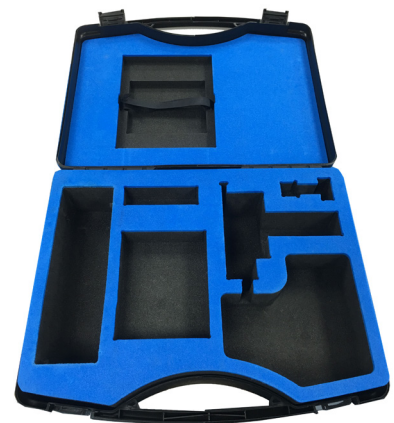
## UPGRADES

### Extended temperature calibration

The standard logger is calibrated between -2°C and 35°C. Extended ranges available on request.

### Crowdsourcing system

If you are planning on deploying multiple instruments to crowdsource data, Aquatec can provide a complete system including data upload to a central location and access via a dedicated website.



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## ALTERNATIVE INSTRUMENTS

For sampling rates > 1Hz, real time data output or deployments at depths greater than 1,000 m - AQUAlogger 310PT.

For deployments to 1000m or logging only applications - AQUAlogger 520.



# SPECIFICATIONS

<b>SENSOR</b>	Pressure	Piezo-resistive bridge 5 bar (~40 m), 11 bar (~100 m), 51 bar (~500 m)  ±0.2% FS accuracy*, 0.01% FS resolution
	Temperature	Thermistor  -2 to 35°C standard range  ±0.05°C accuracy, 0.001°C resolution  Time constant - better than 5 seconds to 63% of the change in value (high speed temperature probe with 1 second time constant also available)
<b>LOGGER</b>	Parameters	Pressure, temperature, battery voltage - all models Depth - derived parameter
	Memory	> 4,000,000 parameters readings in non-volatile FLASH
	Logging Lifetime	Depends on logging parameters - up to 1 year
	Data Retention	>10 years
	Sampling	Burst or continuous
	Acquisition Range	Up to 1 Hz
	Burst Averaging	Bursts may be averaged to a single data value
	Logger Communication	Wireless - IEEE802.15.1
	Reader Communication	USB, bus powered
	Battery	1.5V alkaline battery
	Software	AQUAtalk™ for configuration and download
	Maximum Depth	500 m
	Material	Acetal
	Weight	520 g in air, 200 g in water - logger only 1,320 g in air, 600 g in water - with cage
	Dimensions	Diameter - 55 mm, Length - 200 mm - logger only Diameter - 74 mm, Length - 250 mm - with cage
Attachment	Single or double point attachments, with holes for screw attachment and shackles (provided) for rope, shackle or carabiner attachment	
<b>MODELS</b>	AQUAlogger® 530WTD	Turbidity logger, maximum 1000 m depth
	AQUAlogger® 530WHSTD	Turbidity, pressure and temperature, maximum 1000 m depth (sensor dependent)

