MINI TEMPERATURE & PRESSURE LOGGERS

AQUA*logger* ® 520 - Buyer's Guide

Models
Standard Loggers: 520T and 520PT
High-speed Temperature Loggers: 520HST and 520PHST

AQUA*logger*® 520

Aquatec's primary temperature and depth model, the AQUA*logger*® 520, combines years of product development and innovative design, resulting in an easy to use and cost effective instrument. Measuring just 200mm (7.9") in length and 32mm (1.3") in diameter, the miniature instrument is suitable for ocean, environmental and coastal applications. It can accurately measure temperature and pressure measurements at depths of up to 1000m. The self-contained design makes the AQUA*logger*® 520 a flexible alternative to thermistor chains.

KEY FEATURES

MEASURE TEMPERATURE AND DEPTH
- Measure temperature and pressure in a self-contained logger
- Pressure: ±0.2% FS accuracy, 0.01% FS resolution
- A range of pressure sensors available - 2 bar, 4 bar, 5 bar, 11 bar, 51 bar and 101 bar
- Temperature: ±0.05°C accuracy, better than 0.007°C resolution
- Flexible sampling with rates up to 1 Hz

USING THE LOGGER
- Mini logger – the AQUA*logger* 520 is compact, measuring 200mm (7.9") in length and 32mm (1.3") in diameter
- Reader unit for deployment and data download – the drop in reader with wireless communication means there is no connector on the AQUA*logger*, reducing the size and cost. One reader can be used with many loggers.
- Long term deployment – the integral lithium batteries give an expected battery life in excess of 5 years, depending on regime
- Memory upgrade - standard memory holds >250,000 parameter values. For high frequency or long term deployments, a memory upgrade to >500,000 parameter values is available.

DEPLOYING THE LOGGER
The AQUAlogger 520 is easy to set up with the AQUAtalk deployment wizard:
- Delayed start – start logging instantly or up to 24 hours in advance
- 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
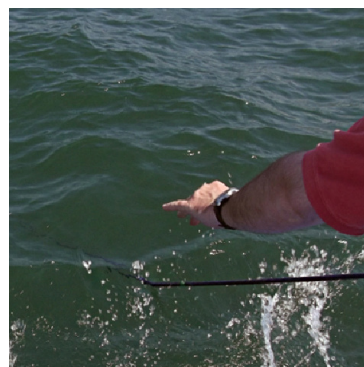- Battery and memory life check – a final check before starting the deployment

USING THE AQUA*logger* ® 530WTD

The AQUAlogger 520 system

The AQUA*logger* 520 temperature and pressure logger is a miniature, self-contained data logger, with integral memory and battery. It has no connector, and instead communicates to a separate reader unit wirelessly.

The AQUA*logger* reader is required to set up deployments and download data. The reader connects to the computer via a USB cable and is supplied with AQUA*talk*, Aquatec's user-friendly software. The logger communicates to the reader via a wireless method - the logger is simply placed in the top of the reader.

One reader can be used with many loggers (please note the reader can only communicate with one logger at a time).

DEPLOYMENT OPTIONS

The AQUA*logger* 520 can be deployed in a number of ways: from a boat, on a subsea frame, attached to a structure, on a mooring line, on a buoy or attached to another piece of equipment.

The instrument features a mounting hole, through which a rope or shackle can be used to deploy the instrument. Alternatively, clamps can be used.

APPLICATIONS

The compact size and low cost of the AQUA*logger* 520 mean it is suitable for a wide range of applications, including long term oceanographic monitoring, as a flexible alternative to thermistor chains, as a proxy tide gauge for hydrographic surveys and as a separate source of temperature data for hydrotest monitoring.
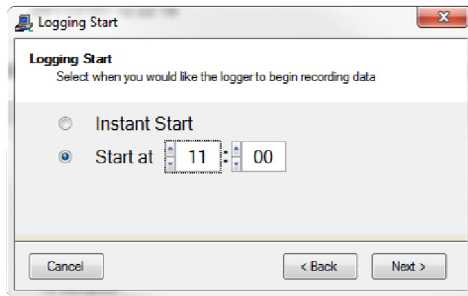
DEPLOYING THE AQUA*logger*® 520

Deploying your AQUA*logger* 520 is simple with the supplied AQUA*talk* software.
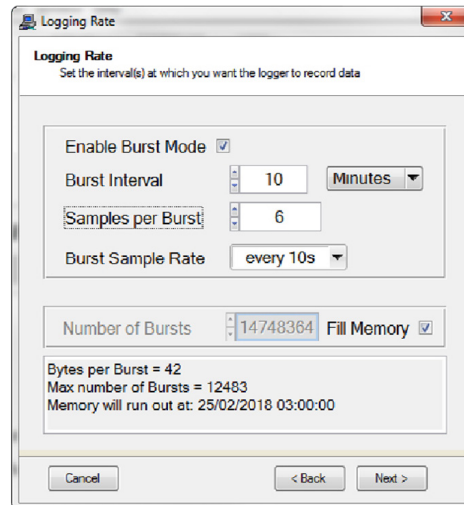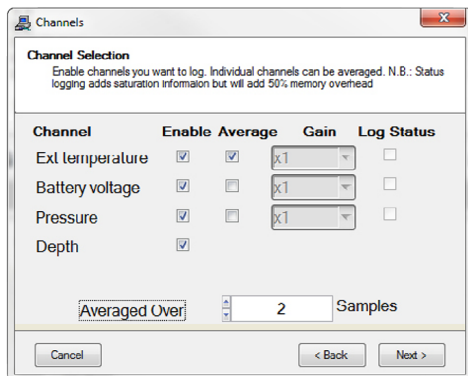
BASIC SET UP

The first steps in the deployment wizard:
- Date and time
- Name your deployment - to allow ease of identification
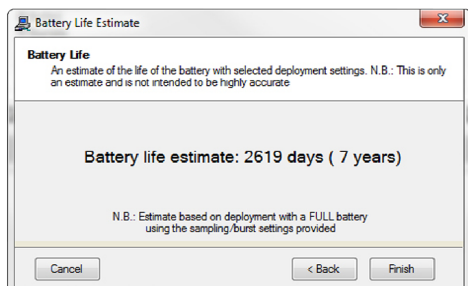- When to start logging - instant start or a set time

SAMPLING REGIME

The next steps allow you to choose the parameters to log and the sampling regime.

FINAL CHECK

Before starting the deployment, you can check the battery life to make sure it its with your deployment length.

SELECTING YOUR INSTRUMENT

STANDARD LOGGERS

AQUAlogger® 520T
Temperature logger
1000 m rated

AQUAlogger® 520PT
Temperature and pressure logger
10, 30, 40, 100, 500 or 1000 m rated

HIGH-SPEED TEMPERATURE LOGGERS

AQUAlogger® 520 HST
High-speed temperature logger
1000 m rated

AQUAlogger® 520 PHST
Pressure and high-speed temperature logger
10, 30, 40, 100, 500 or 1000 m rated

ACCESORIES

Reader Unit
AQUAlogger 520 reader
AQUAtalk software
USB cable

Transit case
Holds up to 6 loggers and reader unit

UPGRADES

Memory upgrade

The standard memory holds > 250,000 parameter readings. For high frequency sampling or long deployments, a memory upgrade to > 500,000 parameter values is available on request.

Extended temperature calibration

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

ALTERNATIVE INSTRUMENTS

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

For deployment on commercial vessels or citizen science projects - AQUAlogger 530WTD

SPECIFICATIONS

SENSOR	Pressure	Piezo-resistive bridge
	* Including non-linearity, hysteresis, zero offset and end value deviation (corresponds to measured error per IEC 61298-2).	2 bar (~10 m), 4 bar (~30 m), 5 bar (~40 m), 11 bar (~100 m), 51 bar (~500 m), 101 bar (~1000 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)
LOGGER	Parameters	Pressure, temperature, battery voltage Depth - derived parameter
	Memory	> 250,000 parameters readings in non-volatile FLASH
	Logging Lifetime	Typically 5 years, depending on regime
	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 system via separate drop-in reader
	Reader Communication	USB, bus powered
	Battery	3.6V custom lithium 'AA' cell -technician replaceable
	Software	AQUA*talk*™ for configuration and download
	Maximum Depth	100 m
	Material	Acetal
	Weight	190 g (6.4 oz) in air 41 g (1.5 oz) in water
	Dimensions	Diameter - 32 mm (1.3"), Length - 200 mm (7.9")
	Attachment	Single or double point attachments, with holes for screw attachment and shackles (provided) for rope, shackle or carabiner attachment
MODELS	AQUA*logger* ® 520T	Tempertaure logger, maximum 1000 m depth
	AQUA*logger* ® 520PT	Pressure and temperature logger, maximum 1000 m depth (sensor dependent)
	AQUA*logger* ® 520HST	High speed temperature logger, maximum 1000 m depth
	AQUA*logger* ® 520PHST	Pressure and high-speed temperature logger, depth dependent on pressure sensor

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