AQUATEC

Sediment Solved™
Observe. Collect. Analyse.

ADVANCED TURBIDITY LOGGERS

AQUA*logger*® 310TY - Buyer's Guide

Models
310TY & 310TY Deep
310TYPT & 310TYPT Deep
310TYT & 310TYT Deep

Turbidity to 10,000 FTU

Suspended Sediment Concentration Convertor

Optional Temperature & Pressure

Off-the-shelf AA Batteries

Shake-to-show LED Status

Magnet Swipe Quick Start

SIMPLY ADVANCED

The AQUA*logger*® 310TY is a series of versatile compact instruments that measure turbidity to over 10,000FTU. The standard version can be deployed in all environments, from freshwater streams to seawater depths of up to 1000m, and features a shake-to-show LED status indicator.

Deep models can be deployed to 6000m. All AQUAlogger® 310TY instruments in the range can be fitted with optional integral temperature and pressure sensors. They can be powered using either regular off-the-shelf batteries or an external source, and provide a real-time NMEA output as standard.

All units feature a tool that converts turbidity to suspended sediment concentration using in situ samples. Our signature AQUAtalkTM software is supplied with every unit offering flexible programming options including continuous or burst sampling, variable sample rates, intermittent logging, and averaging. Standard memory provides 3.4 million samples which can be upgraded to approximately 59 million.

KEY FEATURES

SEDIMENT SOLVED
- Measure turbidity to over 10,000FTU
- Convert turbidity to suspended sediment concentration with the SSC Converter tool
- Add integral temperature and pressure sensors
- Models for shallow and deep water deployments

USER FRIENDLY FEATURES
- Quick start – swipe the logger with a magnet to start deploying
- Shake to show – check the status of the logger by shaking twice. A light indicates whether the instrument is logging, waiting to start, not deployed or has a low battery
- Off-the-shelf batteries – user-changeable standard AA size batteries available across the world – purchase locally or order direct. Choose between alkaline, lithium or NiMH batteries to suit the deployment

DEPLOYING THE LOGGER

Four methods of setting up the instrument depending on the complexity of the deployment:
- Basic – delayed start, burst sampling
- Advanced – triggered logging, NMEA output, variable sample rates, sample averaging, intermittent logging
- Re-deploy – redeploy the logger using the last regime
- Pre-defined – load a previously saved regime file

ACCESSING THE DATA
- Log the data and access later
- View in real time with a live view in AQUAtalk via a cabled connection

SEDIMENT SOLVED

The AQUA*logger*® 310TY forms a core part of the Sediment Solved range of instrumentation, measuring turbidity and other parameters in freshwater and marine environments.

TURBIDITY

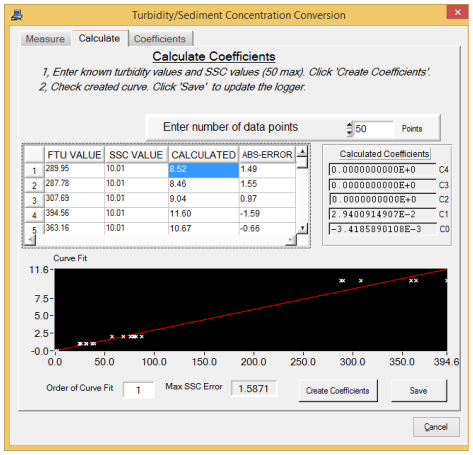
The AQUA*logger*® 310TY measures turbidity to over 10,000FTU - allowing you to measure high and low turbidity environments, as well as event-driven turbidity changes, in one instrument. Automatic wipers are available to minimise the impact of biofouling on the optical window.

The sensor itself takes two measurements of backscatter - one focused on turbidities of less than 1,000FTU and the other on turbidities of 1,000FTU to greater than 10,000FTU. Aquatec combines the two readings to give you one turbidity value. Turbidity is calibrated to 4,000FTU, with values from 4,001 to over 10,000FTU provided uncalibrated in a continuous output.

A full sediment calibration is also available. The sensor is fully calibrated over a range of concentrations using customer-supplied sediment samples.

SUSPENDED SEDIMENT CONCENTRATION

Turbidity is often used as a proxy for suspended sediment concentration (SSC) but can only be converted to SSC using in situ samples, due to the variation of turbidity with sediment size, type and colour. The Aquatec SSC Converter is provided as part of the AQUA*talk*™ software package and gives you the tools you need to convert your turbidity readings to suspended sediment concentration (SSC) with ease.



- The conversion can be applied pre or post deployment.
- There are 3 different methods of converting, depending on the type of sampling selected or whether past conversions are being applied – Measure, Calculate or Coefficients.
- Keep accurate records of conversions with reports documenting the transparent process.
- Improve the fit by adding samples.
- If the conversion is set up prior to deployment, the AQUA*logger*® 310TY can output SSC in real time.

TEMPERATURE AND PRESSURE

The AQUA*logger*® 310TY is available as a turbidity only model, or with integral pressure and temperature sensors. All models with pressure feature a user-configurable pressure to depth conversion.

Aquatec can also supply a range of sediment traps, water samplers, corers and grabs for sediment collection.

USING THE AQUA*logger*® 310TY

The AQUA*logger*® 310TY has new user friendly features designed to make setting up, deploying and transporting your instrument even easier.

QUICK START

Set up your logger in the lab, then in the field, swipe the unit with a magnet to start. The quick start function allows you to set up your sampling regime in the lab/office and only deploy your logger when you are ready. This can save battery and memory life, as well as ensuring a smooth deployment. You can check the status of the logger with the new 'shake to show' function (below).

SHAKE TO SHOW

Shake your logger to check the status. Shaking the unit twice illuminates a light, showing you the current status of the logger.

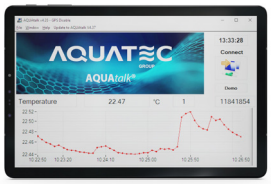
- Logging
- Waiting to Start
- Low Battery
- Not Deployed

OFF-THE-SHELF AA BATTERIES

With increasingly stringent lithium battery shipping regulations, the AQUA*logger*® 310TY overcomes potential transit issues by using standard user-replaceable AA size batteries available across the world. You can choose the type of battery most suitable for each deployment, whether alkaline, lithium or rechargeable, balancing battery life with ease of transport. You can purchase locally or order direct from Aquatec.

TABLETS

Our signature software AQUA*talk*™, supplied with every unit, is also compatible with Windows tablets. These can be purchased pre-loaded and tested from Aquatec.



DEPLOYING THE AQUA*logger*® 310TY

Deploying your AQUAlogger® 310TY is simple with the new-look and expanded AQUA*talk*™ software. There are 4 methods of setting up the instrument, depending on the complexity of your deployment:

BASIC

For straight-forward sampling regimes, the basic mode allows you to set the following variables:

- Date and time.
- When to start logging - instant start or at a set date and time.
- Continuous or burst sampling.
- Sampling frequency and burst rate.

ADVANCED

A wider set of regime variables are available with the advanced mode.

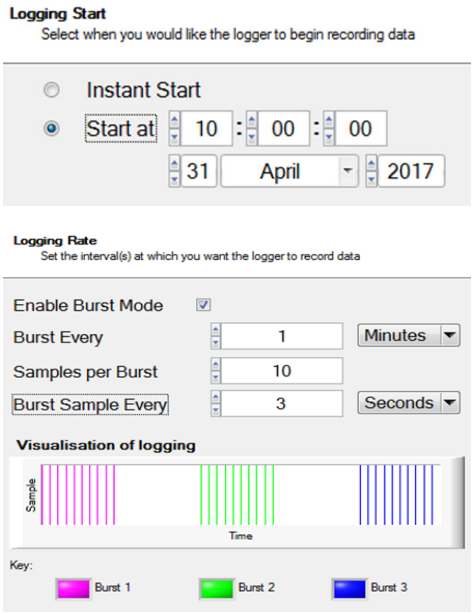
- Triggered logging - use an external trigger to start logging.
- NMEA output for real time data.
- Variable sample rates - sample different channels at different multiples of a base sample rate.
- Sample averaging - average the samples and only store the averaged value.
- Intermittent logging - select the hours, dates and months you would like to log (e.g. only log data in March and May).

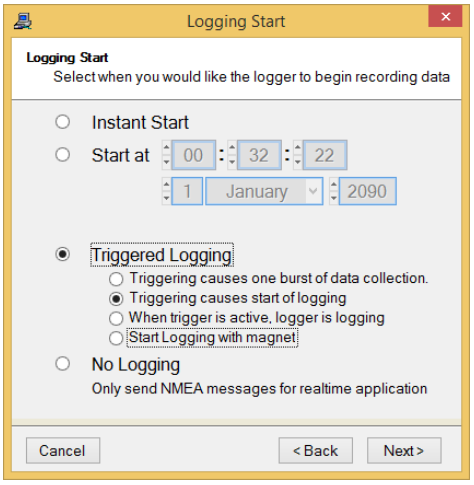
RE-DEPLOY

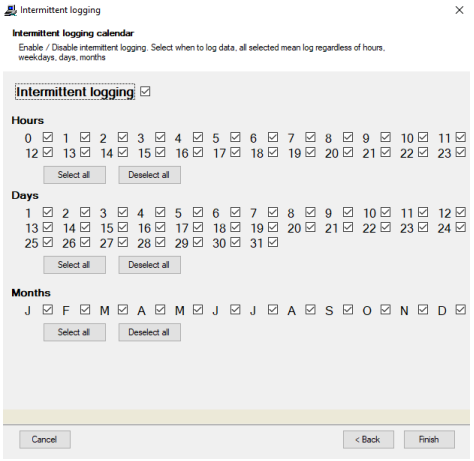
With the click of a button, redeploy the logger using the last stored regime set up.

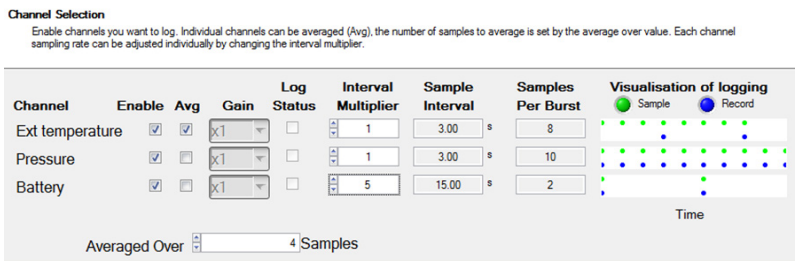
PRE-DEFINED

The pre-defined mode allows to you load a previously saved regime and apply to the next deployment. This mode is ideal for repeat deployments and quick set up in the field.









ACCESING YOUR DATA

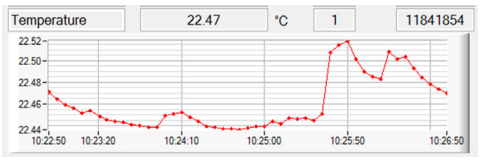
The AQUA*logger*® 310TY is a flexible instrument that provides both local logging and the ability to deliver real-time data using its default NMEA RS232 capability.

LOG AND ACCESS LATER

The AQUA*logger*® 310TY has internal batteries and memory to allow autonomous deployment and later data download via USB. The logger has an internal memory of 64MB, with upgrades available on request.

VIEW IN REAL TIME WITH A CABLED CONNECTION

View your data in real time with a cabled connection using the AQUA*talk*™ software supplied with the instrument.



SELECTING YOUR INSTRUMENT

All instruments come in standard and deep water models and can measure the following parameters:

- Turbidity only
- Turbidity and temperature
- Turbidity, temperature and depth* (pressure derived)

**Maximum depth is limited by pressure sensor selected*

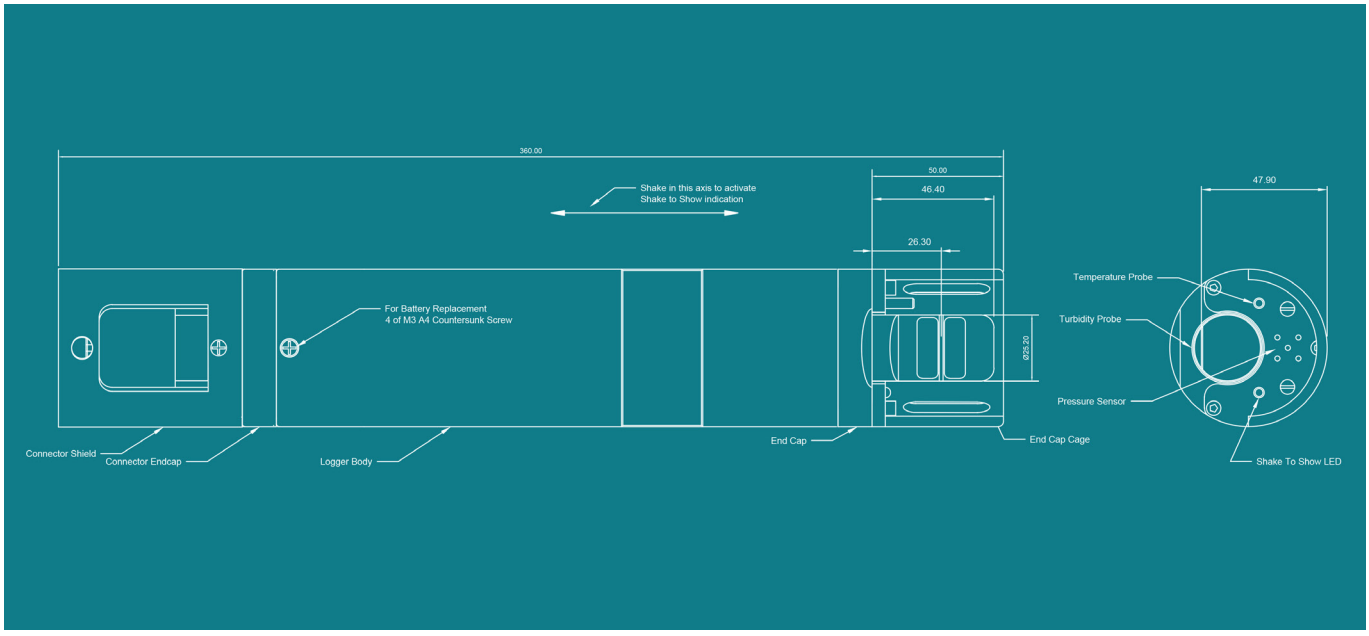
ACCESORIES

AUTOMATIC WIPER

The automatic wiper mechanically cleans the optical sensing window to reduce the impact of biofouling on the sensor, allowing for long-term, unattended deployments. It has a separate battery, so will not affect the battery life of the AQUA*logger*® 310TY. Two models are available - 30m and 100m depth rated.

SPECIFICATIONS

SENSORS	Turbidity	Optical backscatter sensor Light source wavelength: 880nm Sensing distance (from window): <5 cm (approx.) Range: 0 to >10,000 FTU
	Pressure *Other pressure ranges and higher accuracy sensors available upon request*	Standard Loggers: 5 bar (~40 m), 11 bar (~100 m), 5 bar (~40 m), 51 bar (~500 m), 101 bar (~1000 m) Deep Water Loggers: 201 bar (~2000 m), 401 bar (~4000 m), 601 bar (~6000 m) ±0.2% FS accuracy*, 0.01% FS resolution
	Temperature	±0.05°C accuracy, 0.001°C resolution -2 to +35°C standard range
LOGGER	Parameters	Turbidity, SSC, battery voltage - All models Temperature, depth (pressure derived), pressure - Model dependent
	Memory	64 MB in non-volatile FLASH (standard) 128 MB (Upgrade option 1) - 384 MB (Upgrade option 2)
	Logging Lifetime	Depends on logging parameters - up to 1 year
	Data Retention	>20 years
	Sampling	Burst or continuous
	Acquisition Range	Up to 8 Hz depending on sensors
	Burst Averaging	Flexible averaging of multiple samples within burst
	Communication	USB and either RS232 or RS422 Optional wireless communication upgrade
	Battery	4 x AA cells - selected from alkaline, lithium or NiMH
	Software	AQUA*talk*™ for configuration and download, including SSC Converter
	Maximum Depth	1000 m - Standard models 4000 m and 6000 m - Deep water models
	Material	Acetal - Standard models Duplex, 316 stainless, and titanium options with sacrificial anode for deep water models
	Weight	<3 kg in air - Standard models <5 kg in air - Deep water models
	Dimensions	Diameter - 60 mm, Length - 360 mm
MODELS	AQUA*logger*® 310TY	Turbidity logger, maximum 1000 m depth
	AQUA*logger*® 310TYPT	Turbidity, pressure and temperature, maximum 1000 m depth (sensor dependent)
	AQUA*logger*® 310TY Deep	Turbidity logger, maximum 4000 or 6000 m depth
	AQUA*logger*® 310TYPT Deep	Turbidity, pressure & temperature, max. 4000 or 6000 m depth (sensor dependent)



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