

Wide-Range Turbidity Logger

AQUAlogger® 310TY



MODELS

AQUAlogger® 310TY | Turbidity | Standard and Deep-water

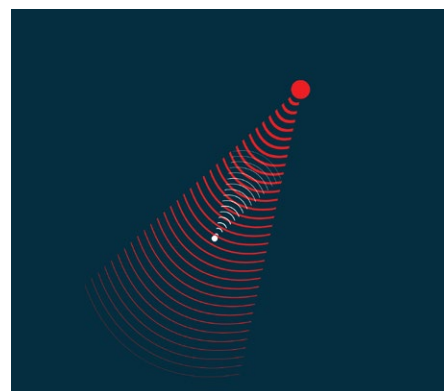
AQUAlogger® 310TYT | Turbidity + Temperature | Standard and Deep-water

AQUAlogger® 310TYPT | Turbidity + Temperature + Depth | Standard and Deep-water

THE AQUA/logger® 310TY RANGE

The AQUA/logger® 310TY is a series of versatile compact instruments that measure turbidity to over 10,000 FTU. The standard version can be deployed in all environments, from freshwater streams to seawater depths of up to 1,000 m, and features a shake-to-show LED status indicator.

Deep models can be deployed to 6,000 m. All AQUA/logger® 310TY instruments in the range can be fitted with optional integral temperature and depth 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.



Optical Backscatter

All units feature a tool that converts turbidity to suspended sediment concentration using in situ samples. Our signature AQUAtalk™ 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

Comprehensive Water Quality Data

- Measures turbidity to over 10,000 FTU.
- Includes an SSC Converter tool for calculating suspended sediment concentration using in situ samples.
- Accommodates optional integral temperature and depth sensors.
- Range offers models for shallow and deep water deployments.

Flexible, Custom Logging Regimes

- Basic: Delayed start, burst sampling.
- Advanced: Triggered logging, NMEA output, variable sample rates, sample averaging, and intermittent logging.
- Re-deploy: Quick setup using the last programmed regime.
- Pre-defined: Ability to load a previously saved regime file.

Simplified Field Operation & Status

- Features quick-start activation via a magnetic swipe for immediate deployment.
- Utilises a Shake to Show status indicator; two shakes illuminate a light that displays logging, waiting, not deployed, or low battery status.
- Uses globally available, user-changeable off-the-shelf AA size batteries (Alkaline, Lithium, or NiMH) to suit various deployments.

Effortless Data Retrieval

- Data is logged internally for later access.
- Provide real-time AQUAtalk™ via a cabled connection.

OBSERVE TURBIDITY WITH THE **AQUA/logger**® 310TY

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

Turbidity

The **AQUA/logger**® 310TY measures turbidity to over 10,000 FTU - 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.

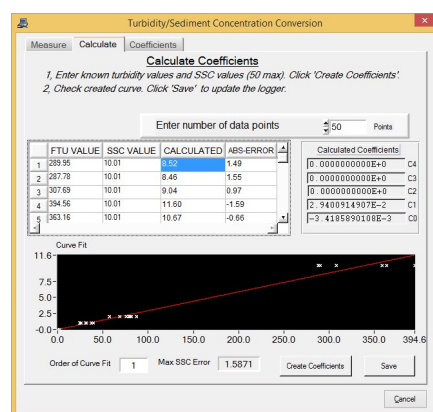
The sensor itself takes two measurements of backscatter - one focused on turbidities of less than 1,000 FTU and the other on turbidities of 1,000 FTU to greater than 10,000 FTU. TECPRIME combines the two readings to give you one turbidity value. Turbidity is calibrated to 4,000 FTU, with values from 4,001 to over 10,000 FTU 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 **AQUAtalk**™ software package and gives you the tools you need to convert your turbidity readings to suspended sediment concentration (SSC) with ease.



- The SSC conversion can be applied pre- or post-deployment to suit your data workflow.
- The **AQUA/logger**® 310TY can output SSC in real time if the conversion is set up prior to deployment.
- Three distinct conversion methods are available: Measure, Calculate, or Coefficients, depending on the type of sampling and whether historical data is used.
- Allows users to improve the conversion accuracy by easily adding new calibration samples.
- Maintains accurate records of all conversions with comprehensive reports that document the transparent process.

Pressure and Depth

The **AQUA/logger**® 310TY offers deployment flexibility beyond basic turbidity by being available with optional integral pressure and temperature sensors. While the base model is turbidity-only, all units equipped with the pressure sensor feature a user-configurable pressure to depth conversion. This versatility is supported by the availability of two distinct logger types: Standard Loggers rated up to 100 bar and Deep Water Loggers rated up to 600 bar, ensuring the platform can be used across the entire environmental range from shallow streams to deep-sea oceanography.

TECPRIME 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 user-friendly features designed to make setting up, deploying and transporting your instrument very easy.

Simplified Field Activation

The logger is designed for rapid deployment. You can fully configure your sampling regime in the lab or office and only activate the unit in the field when you are ready to begin logging. This Quick Start process is initiated by simply swiping the logger unit with the supplied magnet. This feature saves battery life and memory capacity by ensuring the instrument is only consuming power during the active deployment phase.

To confirm the unit's status immediately before or during deployment, the Shake to Show function provides instant visual feedback.



Shake to Show

Simply shaking the logger twice illuminates an LED light, quickly displaying whether the logger is actively logging, waiting to start, or has a low battery.



Off-the-shelf Batteries



Facing increasingly stringent lithium battery shipping regulations, the AQUA/logger® 310TY is designed to overcome transit and compliance issues associated with lithium batteries by utilising standard, user-replaceable AA size batteries available globally. This provides logistical flexibility, allowing you to choose the most suitable chemistry—alkaline, extended-life lithium, or rechargeable (NiMH)—to balance power longevity with ease of transport, with the convenience of purchasing fresh batteries locally or ordering direct from TECPRIME.

Seamless Integration With Windows Tablets

Our signature software, AQUAtalk™, is supplied with every logger and is fully compatible with Windows tablets. This capability provides real-time data viewing and facilitates on-the-spot programming, eliminating the need for a laptop. For convenience, tablets can be purchased pre-loaded and tested directly from TECPRIME, ensuring they are fully optimised for immediate use.



DEPLOYING THE AQUA/logger® 310TY

Deploying your AQUA/logger® 310TY is simple with the new-look and expanded AQUAtalk™ 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.

Channel Selection

Enable channels you want to log. Individual channels can be averaged (Avg), the number of samples to average is set by the average over value. Each channel sampling rate can be adjusted individually by changing the interval multiplier.

Channel	Enable	Avg	Gain	Log Status	Interval Multiplier	Sample Interval	Samples Per Burst	Visualisation of logging
Ext temperature	☒	☒	x1	☐	1	3.00 s	8	
Pressure	☒	☐	x1	☐	1	3.00 s	10	
Battery	☒	☐	x1	☐	5	15.00 s	2	
Averaged Over								4 Samples

Logging Start

Select when you would like the logger to begin recording data

☐ Instant Start

☒ Start at 10 : 00 : 00
31 April 2017

Logging Rate

Set the interval(s) at which you want the logger to record data

Enable Burst Mode ☒

Burst Every 1 Minutes

Samples per Burst 10

Burst Sample Every 3 Seconds

Visualisation of logging

Sample

Time

Key:  Burst 1  Burst 2  Burst 3

Logging Start

Select when you would like the logger to begin recording data

☐ Instant Start

☐ Start at 00 : 32 : 22
1 January 2090

☒ Triggered Logging

☐ Triggering causes one burst of data collection.

☒ Triggering causes start of logging

☐ When trigger is active, logger is logging

☐ Start Logging with magnet

☐ No Logging

Only send NMEA messages for realtime application

Cancel < Back Next >

Intermittent logging

Enable / Disable intermittent logging. Select when to log data, all selected mean log regardless of hours, weekdays, days, months

Intermittent logging ☒

Hours

0 ☒ 1 ☒ 2 ☒ 3 ☒ 4 ☒ 5 ☒ 6 ☒ 7 ☒ 8 ☒ 9 ☒ 10 ☒ 11 ☒ 12 ☒ 13 ☒ 14 ☒ 15 ☒ 16 ☒ 17 ☒ 18 ☒ 19 ☒ 20 ☒ 21 ☒ 22 ☒ 23 ☒

Select all Deselect all

Days

1 ☒ 2 ☒ 3 ☒ 4 ☒ 5 ☒ 6 ☒ 7 ☒ 8 ☒ 9 ☒ 10 ☒ 11 ☒ 12 ☒ 13 ☒ 14 ☒ 15 ☒ 16 ☒ 17 ☒ 18 ☒ 19 ☒ 20 ☒ 21 ☒ 22 ☒ 23 ☒ 24 ☒ 25 ☒ 26 ☒ 27 ☒ 28 ☒ 29 ☒ 30 ☒ 31 ☒

Select all Deselect all

Months

J ☒ F ☒ M ☒ A ☒ M ☒ J ☒ J ☒ A ☒ S ☒ O ☒ N ☒ D ☒

Select all Deselect all

Cancel < Back Finish

ACCESSING 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.

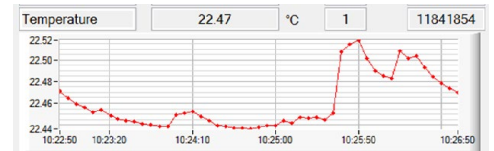
Log and Access Later

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

View your data in real time with a cabled connection using the AQUAtalk™ 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

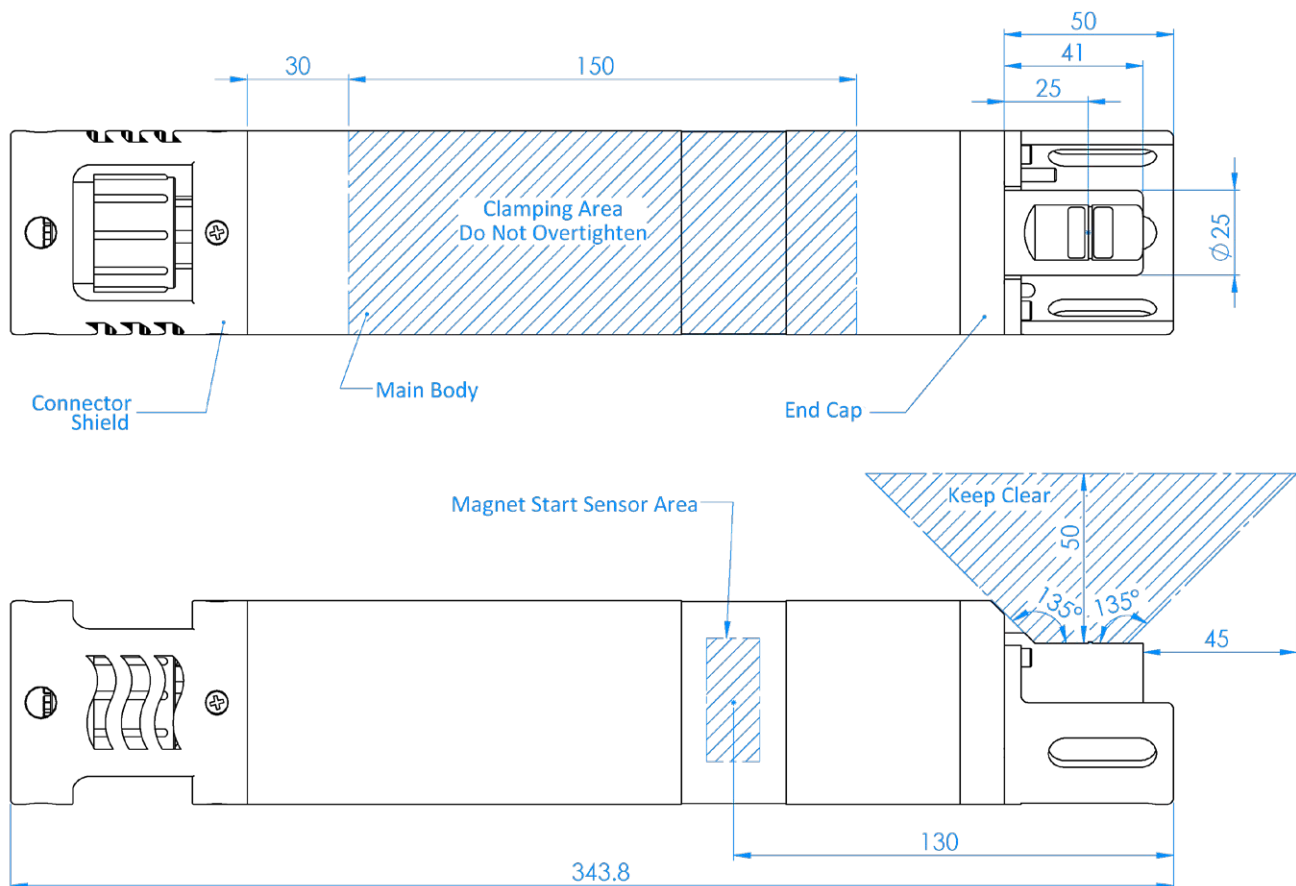
Automatic Wiper

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.



TECHNICAL SPECIFICATIONS

Turbidity sensor	Optical backscatter sensor Light source wavelength: 880nm Sensing distance (from window): <5 cm (approx.) Range: 0 to >10,000 FTU	
Pressure	Standard Loggers: 5 bar (~40 m), 10 bar (~100 m), 50 bar (~500 m), 100 bar (~1000 m)	
	Deep Water Loggers: 200 bar (~2000 m), 400 bar (~4000 m), 600 bar (~6000 m)	
	30.2% FS accuracy*, 0.01% FS resolution	
Temperature	-2 to +35°C standard range 30.05°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)	
Parameters	All models: Turbidity Suspended sediment concentration (SSC) Battery Voltage	
	Model dependent: Temperature Depth (pressure derived) Pressure	
Memory	64 MB non-volatile FLASH Incremental upgrades to 1GB available	
Logging lifetime	Depends on logging parameters and available power	
Data retention	>20 years	
Sampling	Burst or continuous	
Acquisition rate	Up to 8 Hz (depending on configuration)	
Burst averaging	Flexible averaging of multiple samples within burst	
Communication	USB and either RS232 or RS422 (MCBH16M Subcon) Optional wireless communication is available through the AQUAmodem® Op2 optical modem series, developed by TECPRIME's parent company, Aquatec Group Limited	
Battery	4 x AA cells (alkaline, lithium or NiMH) External battery systems available	
Software	AQUAtalk® for configuration and download, including SSC Converter	
Maximum depth	Standard models: 1,000 m	Deep-water models: 6,000 m
Housing options	Standard models: Acetal	Deep-water models: Titanium
Weight	Standard models: <3 kg in air	Deep-water models: <5 kg in air
Dimensions	Diameter: 60 mm, Length: 343.8 mm	
MODELS		
AQUAlogger® 310TY	Turbidity logger Depth rated to 1,000 and 6,000 m	
AQUAlogger® 310TYT	Turbidity and temperature logger Depth rated to 1,000 and 6,000 m	
AQUAlogger® 310TYPT	Turbidity, temperature and depth logger Depth rated to 1,000 and 6,000 m	



WORLD-LEADING MEASUREMENT AND ANALYSIS OF PARTICLES, SUSPENSIONS, AND FLUID DYNAMICS

TECPRIME is a new company with deep roots. Born from Aquatec Group's Sediment Solved Division and backed by over 30 years of subsea innovation, we specialise in sediment and particle dynamics. Our mission is to advance understanding of particles, suspensions, and fluids in marine and freshwater environments.

We equip organisations in marine and environmental fields with the means to measure and manage sediment processes. By providing reliable technologies and expert support, we enable confident decision-making across applications from coastal surveys and offshore energy to environmental monitoring and academic research.

Through our integrated approach — Observe. Collect. Analyse. — we connect advanced instrumentation, proven sampling techniques, and sophisticated analysis. This ensures that every stage of the data journey, from measurement to interpretation, delivers accuracy and insight.