

AQUAlogger 210TY Turbidity Logger

The AQUAlogger 210 series of instruments offer compact oceanographic instrument capability. They comprise fully self-contained data loggers, with a high speed data connection for configuration, data download, and real time telemetry.

The AQUAlogger 210 sensor logger operates with a variety of third party oceanographic sensors such as turbidity, conductivity, fluorescence, PAR etc, and includes optional temperature and pressure sensors. The 210TY includes a built-in turbidity sensor using the optical backscatter approach.

Logger Specification

Extra Inputs	2 channels 0-5V external
Controls	External trigger input or output
Communication	RS232 or RS485 and USB 1.1, bus powered
Burst Sampling	Bursts every 1 – 255 seconds or 1 – 255 minutes
Within-Burst Rate	From 1 Hz to once every 30 seconds
Burst Averaging	Bursts may be averaged to a single data value
Data Storage Capacity	Nominal 4M sets ÷ number of parameters measured, in non-volatile FLASH
Real-Time Data Option	NMEA formatted data string
Logging Lifetime	Typically 1 year, with data retention >10 years
Battery	3 x 3.6V Lithium 'AA' cell pack
Software	AQUAtalk for Windows for configuration and download
Dimensions	300 mm (11.8") long x 60 mm (2.4") diameter
Weight	1100 g (39 oz) in air; 460 g (16 oz) in water
Attachment	Single point attachment through mounting hole or use clamp
Maximum depth	1000 m or 2 x pressure range, whichever is lower



Ordering Guide	
AQUAlogger 210TY	Turbidity only
AQUAlogger 210TYT	Turbidity, Temperature
AQUAlogger 210PTpp	Turb, Temp, Pressure pp
Pressure Range	Specify when ordering

Sensor Specifications

The AQUAlogger 210TY uses the tried and tested SeaPoint STM turbidity meter. The STM has four switchable gain ranges. These can be pre-set by the user or automatically selected by the AQUAlogger for maximum dynamic range in field deployment conditions.

Light Source Wavelength	880 nm	
Scatterance Angles	15 – 150 degrees	
Linearity	<2% deviation 0 – 750 FTU; above 750 FTU, sensor is non-linear, with optional polynomial correction equation	
Measurement Range	0.01 FTU to 2500 FTU over four automatically switched gain ranges.	
Optional Sensors	Temperature	Pressure
Sensor Type	Thermistor	Piezo-resistive Bridge, Absolute
Ranges	-2 to 30°C standard, other ranges on request	1.6, 4, 10, 16, 25, 40, 60, 100 bar
Resolution	better than 0.0015°C	better than 0.005% full scale
Accuracy	±0.05°C	typically better than 0.2% full scale
Time Constant	better than 5 seconds	N/A

Calibration

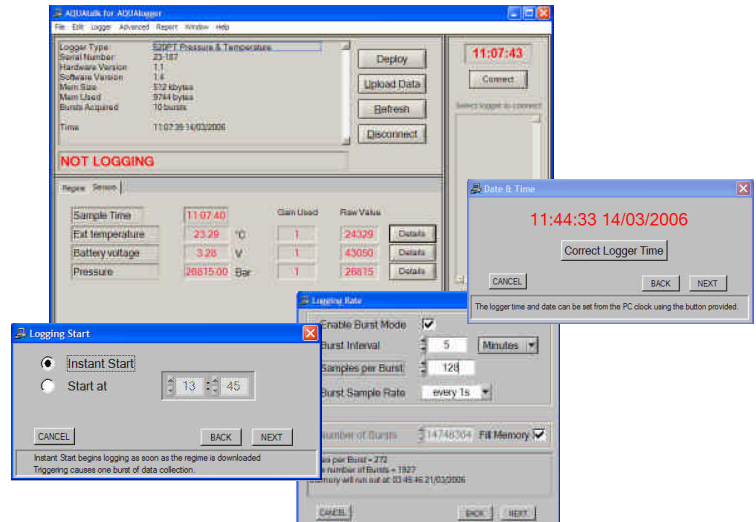
All instruments are calibrated for temperature and pressure, where applicable using our in-house, ISO 9001 compliant calibration system using a temperature bath and pressure calibrators. Third party UKAS calibrations are also available from our carefully selected calibration partners. We do not recalibrate the turbidity sensor, but perform a cross check using polymer bead suspensions as a verification standard.

AQUAtalk Software

To get the most from the Aquatec's data logging instruments the AQUAtalk software was developed. It provides an easy and intuitive interface that makes deployment, data upload and analysis available at the click of a button.

Key Features

- Easy connection using the connect toolbar, which automatically scans serial ports for connected loggers.
- Deployment wizard to guide the user through the configuration options
- Real-time acquisition and display of sensor channels
- Report generator for fast data viewing
- Ability to download new firmware to the logger
- Demo mode to assist training users



Applications

Sediment Transport

Single point optical backscatter measurements are regularly used for monitoring coastal sediment transport on seabed frames and monitoring buoys. Often two or more are placed at different elevations to estimate suspended sediment concentration profiles, or to act as secondary references for acoustic backscatter instruments.

Environmental Impact Assessment

There are increasing regulatory demands for new marine construction work, including the need to understand parameters such as suspended solids profiles over tide and storm cycles. Optical backscatter measurements are an inexpensive approach to monitoring several points at once. The data gathered can be used to assess the relative impact of marine works – be they wind farm or oil rig construction, major dredging works, or new coastal developments – on the existing environment.

Dredge Monitoring

The AQUA/logger 210TY has been used to monitor the turbidity at a number of fixed locations around a dredge site. An alarm level with either a warning light or radio modem link is used to indicate to the dredge vessel that the levels of turbidity are above preset operational limits. The loggers can also be used to collect information before, during and after the dredging operation to assist in the analysis of its effects.

Water Quality Measurement

The AQUA/logger 210TY, with its automatic gain setting and high sensitivity, is suitable for monitoring water turbidity, both on a historical logged basis, and also in real time.

Flume Tank Experiments

Optical backscatter measurements are also valuable in flume tank installations. The 210TY can be configured for online data output, and also triggered from external processes such as wave makers.

Special Applications

Please contact our technical department to discuss any other sediment or turbidity monitoring applications.