

MS-310

Microsalinometer

The MS-310 provides oceanographers with a reliable shipboard method to verify the performance of sophisticated modern CTD instruments. By giving a direct measurement of R_T against the reference it gives a rapid confirmation of accuracy of a CTD with low operating costs.

The conductance of the sample is simultaneously compared with the conductance of a reference. This dual cell innovation removes the need for a highly stable bath temperature. The cells are surrounded by a well-stirred oil bath to ensure thermal uniformity.

Low-power operation and an inductive measuring technique greatly increase the versatility of the MS-310. The sample does not contact measuring electrodes so a wide range of fluids can be measured.

Features:

- Small size & light weight
- Rugged construction
- No room temperature control required
- Low power
- RS-232 or USB interface to laptop & GPS
- Repeat use of Standard Seawater

Careful design has ensured that the MS-310 retains a high level of performance in a package convenient for field or shipboard use. Full scale calibration of the instrument can be performed easily on board the ship or in the laboratory using IAPSO Standard Seawater. This is stored in one of the dual cells to permit direct standardization at all times.



Technical

General

Power:	115/230 VAC; 12VDC, 10VA
Communications:	RS-232 or USB; logged or real-time
Memory:	8Mbyte Flash (800,000 samples)
Size:	280mm x 280mm x 180mm
Weight:	3kg (bath empty), 5kg (bath filled)
Cell Volume:	20ml; typical sample < 100ml
Bath Volume:	2.0 litres
Operating Temp.:	+15°C to +30°C
Calibration:	NIST traceable standards
Settling Time:	~ 5 minutes

Temperature

Accuracy:	±0.002 °C
Resolution:	<0.00005 °C
Drift:	<0.002 °C/year

Conductivity

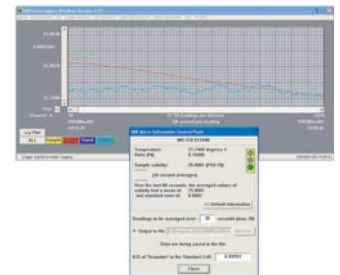
Range:	0 to 100mS/cm
Accuracy:	±0.003 mS/cm; Ratio ±0.0001
Resolution:	0.0001 mS/cm; Ratio ±0.00001
Stability:	±0.00005 (Ratio) 24hrs

Salinity

Range:	2 to 42 PSU (PSS-78)
Accuracy:	±0.002 PSU
Resolution:	<0.0002 PSU

Software

Integrated RBR Windows® software is available at no additional charge for all of our instruments. See reverse for further details or check our website for details, downloads and upgrades.



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RBR Windows® Software

Data Logger Software

The RBR Windows® software package has been designed for easy use while still providing the necessary features for logger programming, data retrieval and analysis. One piece of software does it all!

Features:

- Intuitive
- Graphical Display
- Real-time data
- Derived Units
- Export to Matlab®
- GPS Integration
- Telemetry ready
- Setup cloning

RBR's Windows®-based data logger software includes a straightforward logger setup display menu that includes options for programming start and stop time, thresholding, sampling rates for both tides and waves (TWR-2050), burst rate, burst length, averaging, and batch programming.

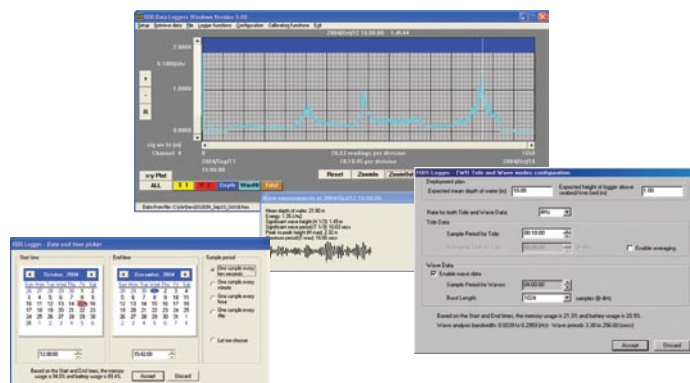
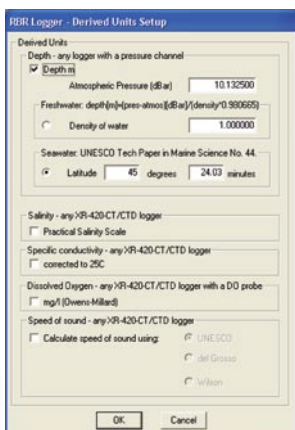
Some basic analysis features are included that allow the user to review the data graphically. Data can also be saved in various file formats for easy import into third party software packages, such as Matlab® or Microsoft® Excel®.

Derived Units

- Salinity (PSS-78)
- Depth
- Speed of Sound
- Density
- Dissolved Oxygen
- Specific Conductivity

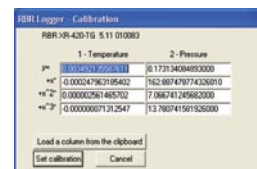
Analysis of waves & wave spectra:

- Mean level
- Tidal slope
- Significant Wave Height
- Min & Max Elevation from Mean
- Mean Period
- Significant Wave Period
- Total Energy



Logger programming is easily achieved by using the 'Setup' dialog, which allows the user to choose Start and End times, Sampling Rate, Averaging, Thresholding, as well as synchronize the logger with the PC clock. The setup dialog also indicates the expected battery and memory usage for the chosen deployment settings.

Re-calibration is done easily by entering the coefficients for each channel of the logger in the appropriate columns. These values are stored in the logger, and a complete calibration history is always available at the click of a button. In order to reduce deployment error, a log file is automatically generated for all logger setup activity.



System Requirements

- Operating System: Windows® 95/98/ME/2000/XP/Vista
 CPU: x86 133Mhz or higher
 RAM: 128MB recommended
 Communications: At least 1 RS-232 serial port, or USB
 Cost: RBR Software is free.



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