

# Tide & Wave Recorders

RBR offers instruments to measure tides and waves by pressure or a direct capacitive sensor. If pressure is measured, the electronics package may be mounted on the sea floor or at the surface. A capacitive sensor may be provided with a USB interface.

## Sea Bed Recorders



Models TGR-1050P, TGR-2050P and TWR-2050 are autonomous instruments which are intended to be mounted on the sea bed. They will record to internal memory for periods of up to two years, and contain 8Mbytes of flash memory. Temperature is measured in the 2050 models.

## Surface Recorders

Both the TGR and TWR are available in a surface version - models TGR-1050HT and TWR-2050HT. Pressure only is measured on the sea bed using a vented transducer for automatic atmospheric compensation. The instruments have a NEMA4X case and full functionality for use with RF or cellular (CDMA or GSM) modem. They may also be connected via RS-232 or RS-485 direct communications. These units can run for five years on internal batteries.



## Direct Sensor

The WG-50 is a capacitive wave gauge, and may be supplied with a USB interface for computer data collection.



USB a/d Interface 8 channels



Electronics



Wave Staff

## 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.

## Sea Bed Recorders

Power: QTY 2, 3V CR123A cells  
 Communications: RS-232/485 or telemetry option  
 Download speed: ~115,000 samples/minute  
 Clock accuracy: ± 32 seconds/year  
 Size: 265mm x 38mm diameter  
 Memory: 8Mbyte Flash  
 Weight: 364g in air, 70g in water

### Depth

Range: 10/20/50/100m (dBar)  
 Accuracy: ± 0.05% full scale  
 Resolution: <0.001% full scale  
 Time Constant: < 10 msec  
 Drift <0.05%/year  
 Averaging period: 1 sec to 8 hours  
 Bursts (wave recorder) 512, 1024, 2048, 4096 samples  
 Burst sampling rate 1, 2, or 4 Hz

### Temperature

Range: -5 °C to 35 °C  
 Accuracy: ± 0.002 °C  
 Resolution: <0.00005 °C  
 Time Constant: < 3 sec  
 Drift: <0.002 °C/year

## Surface Recorders

Specifications similar to those above, with the following changes:

Power: QTY 8, C size alkaline cells / 12V ext.  
 Communications: RS-232/485 or modems  
 Size: 254x203x102mm  
 Weight: 1.5kg  
 Pressure Sensor: Druck PDCR 1830  
 Range: 10 dBar; 15 or 25m cable  
 Other ranges and sizes to special order  
 Accuracy: ±0.05% full scale

## Direct Sensor WG-50

Power: 9V to 18V @ 55mA  
 Output: ± 5Vdc or USB interface option  
 Size: 160 x 110 x 85 mm  
 Accuracy: ±0.4% full scale  
 Probe lengths: 100mm to 20m

## Ordering Information

TGR-1050P Specify depth range  
 TGR-2050P Specify depth range  
 TWR-2050P Specify depth range  
 TGR-1050HT Specify sensor cable length  
 TWR-2050HT Specify sensor cable length  
 WG-50 Specify probe length; USB option.

For further information on sensor performance please consult RBR.

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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.

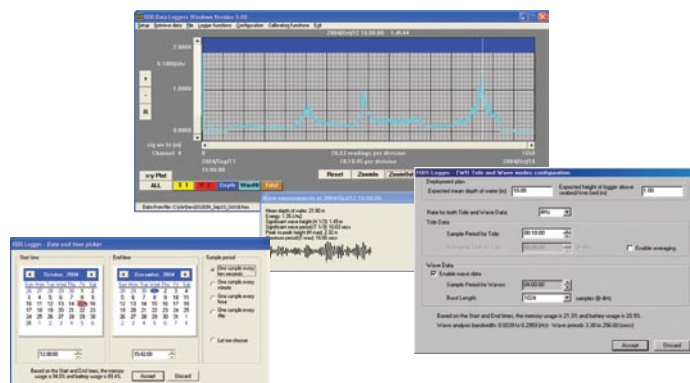
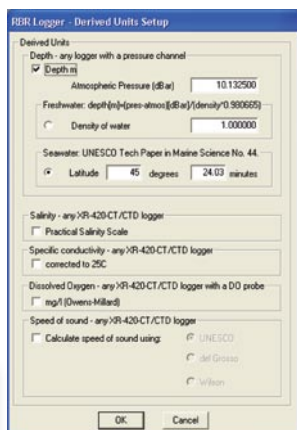
Some basic analysis features are included that allow the user to review the data graphically. Data can also be saved in various file formats for easy import into third party software packages, such as Matlab® or Microsoft® Excel®.

### Derived Units

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

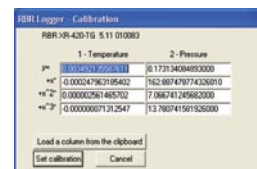
### Analysis of waves & wave spectra:

- 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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