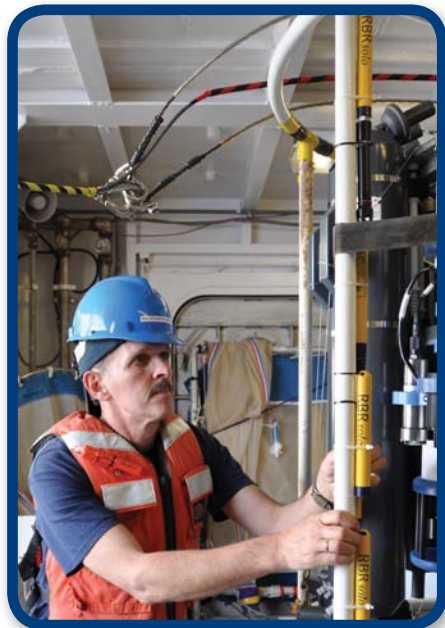
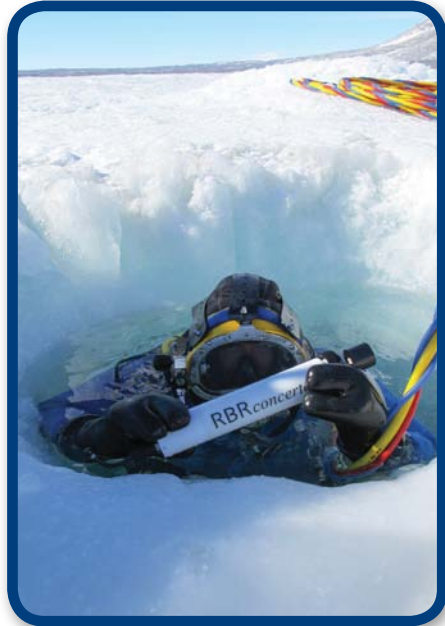


RBR



Robust and Reliable
Monitoring Instruments

About RBR

RBR design and manufacture rugged, high precision, sensing data loggers suitable for environmental, geophysical and oceanographic monitoring and survey work.

Our instruments are easy to use and require minimal service intervention. RBR instruments are low power to allow for long deployments which minimize operational costs. New models now include USB download and sufficient memory for 30 million readings, and all models carry their calibration constants and history. Output may be made in raw data format to maintain the 24 bit precision, or in engineering units.

Instruments:

- **RBRsolo** - small single channel for T,D or DO
- **RBRvirtuoso** - single channel with many options
- **RBRduo** - dual channel various options
- **RBRconcerto** - Up to 5 sensor channels (inc CTD)
- **RBRmaestro** - up to 13 channels
- **Bottom Pressure Recorder** - high stability, high resolution
- **MLM-1000** - inductive mooring line modem
- **Thermistor chains** - up to 24 nodes, up to 1km long
- **Tide & wave recorders** - Submersible and vented topside

Options:

- Fast sampling, 6 or 12Hz, for profiling measurements
- Gating: thresholding or twist activation
- Extendable battery (2x) and memory capacity (4x)
- External u/w connection for USB, RS-232 or RS-485
- WiFi communication: setup and download



Highlights

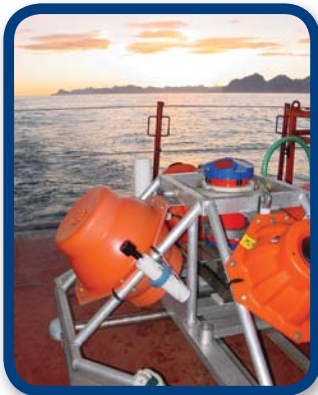
- Record up to 30 million readings and fast USB download
- Continuous CTD sampling at 6 or 12 Hz for 8 days or 4 days
- Periodic CTD measurement every minute for 32 months
- WiFi communication and twist activation
- Monitor waves or boat-wakes continuously for 2 months
- Temperature measurement using RBRsolo/T >3 years @ 5s sampling
- RBRsolo rated to 1700m and RBRsolo T to 10,000m
- WOCE standard (Conductivity ± 0.003 mS/cm Temp $\pm 0.002^\circ\text{C}$ Depth $\pm 0.05\%$)

Applications

RBR is proud to partner with leading researchers and operational surveyors around the globe and from pole to pole. We have provided excellence in science and technology for over 35 years from our base in Ottawa through a strong network of international offices and agents.

We offer flexible sensor choices in small lightweight packages, that are equally suitable for carrying to high mountain lakes or sending to deepest ocean depths.

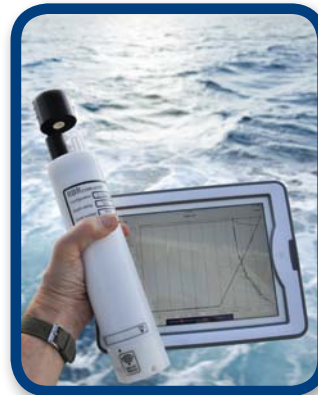
Long-term monitoring



Underwater telemetry



WiFi



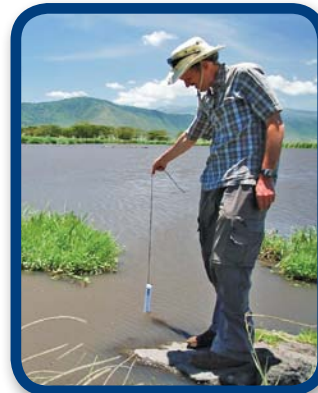
Profiling



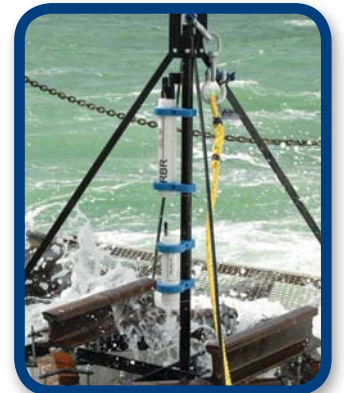
Tide and waves



Systems



Freshwater



Deep ocean

Ruskin software - one program, many instruments

Ruskin interface and control software is available for Windows PCs, Apple Macs and iOS devices. It may be freely downloaded to run simulations and experience its intuitive nature. Capabilities include derivation of Density, Salinity, Speed of Sound and Depth.

- Auto-update
- Auto-detection
- Calibration facility
- Deployment simulation
- Derived channel options
- Ethernet addressable TCP/IP socket
- Export to Excel®, Matlab® or ODV
- Graphing with selectable ordinate
- Memory & battery usage indicator
- Wave analysis

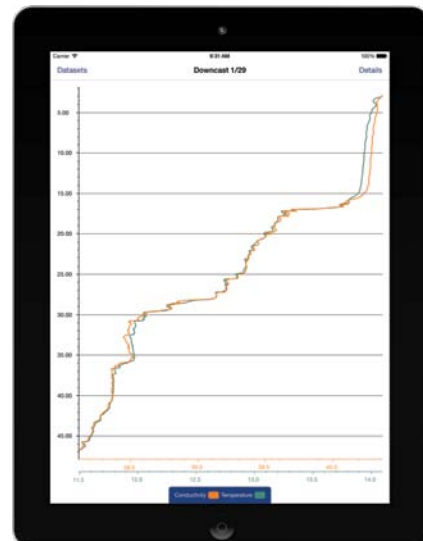
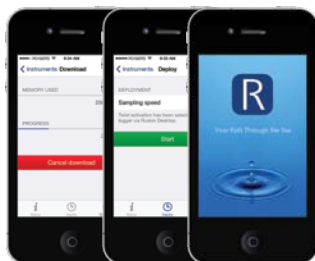
Options and Sensor Specifications

Parameter	Sensor	Max Depth	Range	Accuracy
Conductivity (inductive)	RBR	2000m	0 – 85 mS/cm	±0.003
Temperature	RBR	10,000m	-5 – +35°C *	±0.002
Thermistor chain	RBR	4000m	-5 – +35°C *	±0.005
Pressure	Keller	10,000m	Various	±0.05%
Pressure (high resolution)	Paroscientific	10,000m	Various	±0.01%
pH	IDRONAUT	1500 / 6000m	0 – 14 pH	±0.01
ORP	IDRONAUT	1500 / 6000m	-1000mV to +1000mV	±1.0
DO - galvanic	Oxyguard	2000m	0 – 600%	±2%
DO - optode	Aanderaa Optode	6000m	0 – 120%	±5%
DO - optode (fast t/c)	JFE Rinko	7000m	0 – 200%	±2%
Turbidity (auto-ranging)	Seapoint	6000m	0 – 2500 FTU, NTU	±2% **
Turbidity (auto-ranging)	Turner (Cyclops)	600m	0.05 – 3000 FTU, NTU	±3%
Fluorometer (auto-ranging)	Seapoint	6000m	Ch-a 0.02 – 150 µg/L	±2%
Fluorometer (auto-ranging)	Turner (Cyclops)	600m	Ch-a 0.025 – 500 µg/L	±3%
Transmissometer	Wetlabs	600 / 6000m	660, 530, 470, 370 nm	±0.1%
PAR	Licor	560m	0 – 10,000 µmol/s-m ₂	±2%
PAR	BioSpherical	2000m	0 – 5000 µmol/s-m ₂	±2%

Derived parameters (using Ruskin software)

Density anomaly	Kg/m ³
Depth	metres (accounts for density and known atmospheric pressure)
Dissolved Oxygen	Conversions between saturation & concentration (Weiss & Garcia Gordon)
Salinity	PSU (calculated by IAPSO PSS-78)
Specific conductivity	µS/cm (standard methods of examination of water & wastewater)
Speed of Sound	m/s (Using UNESCO, del Grosso or Wilson methods)
Tide & Waves	Significant, 10%, max (pk), average height & period, Energy and Tidal slope

* -40 – +50°C optional ** Applies to 0 to 1250 FTU range
Please contact us to discuss integration of other analogue or serial sensors.



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