

RBR Data Controller

Instrumentation Platform with Telemetry

The RBR Data Controller provides a means of remote monitoring and facilitates central control and co-ordination of 20 or more (expandable) channels of instrumentation, sensors & telemetry. The versatile system inherently recognises RBR instruments and is user-configurable to handle many other sensors. Power management & telemetry options are also incorporated to enable real time transmission of data directly to the user's desktop.

Features:

- Central PC104 controller integrates all sensors
- Easy interface to RBR sensors
- Accommodate wide range of 3rd party sensors
- Simple remote configuration and data access

An RBR DBC-II controller unit collects data from all sensors, both above and below the water surface. Data are logged to internal Compact Flash and may be retrieved at any time via the telemetry link.

Third-party sensors are swiftly incorporated through the use of customer-editable command sets.

Communication with the DBC-II using RBR software or standard secure shell enables simple and remote configuration and data access.

Typical Sensors

- Wind Speed & Direction
- CTDs (Salinity)
- Barometric Pressure
- Compass
- Optical water quality
- Currents and Waves
- Thermistor Chains
- Temperature (SST)
- All RBR Loggers

Technical

RBR DBC-II Controller

Power (CPU):	2.5W (maximum, active); 200mW (sleep)
Sensor Interface:	RS-232/485 (up to 115Kbps) 12 channels standard. Additional channels in increments of 8.
Analogue Inputs:	Module cards available for analogue I/O
Sensor Data Format:	ASCII or Binary
Scan Rate:	Polled (60 sec to 60 min) Asynchronous (6 Hz max)
Clock Accuracy:	Sync to GPS UTC
Memory:	Compact Flash (up to 8GB)
Platform:	PC-104; Linux OS

Communications

Network Support:	10/100 Base-T Ethernet
Host/Modem Interface:	Ethernet, RS-232/485 AT compatible
Telemetry Options:	GSM, GPRS, CDMA, Satellite, or RF Simplex (selectable period transmission) Duplex (remote access) Data filtering (trim redundant strings) Data compression to binary

Data Storage

File Format:	ASCII flat file
Data Format:	Sensor dependant
File Structure:	Unique file for each sensor

Wave statistics and derived units (Depth, Salinity, Density, Speed of Sound) available for RBR instruments.

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Operation of Each Serial Port

Each serial port is controlled by a “metatable” of commands for initialisation and sampling. These are text strings conforming to XML which may be simply edited and rapidly entered. To poll the entire set of sensors on all serial ports simply issue the command to “fetch data” to all ports. The responses from each port are stored or transmitted as received. Sample rate, collection mode (polling/listening), data format and data filtering of individual ports can be configured separately. Host software is provided for the compilation and testing of the metatables for each sensor, so that each sensor module may be confirmed before final assembly and test. Additional modules are easily added at any time. Data may be collected from different ports asynchronously. Wave statistics and derived units (depth, salinity, density, speed of sound) are available for RBR instruments.

Alternatively, the complete data collection system can be set up and configured manually via remote access.

Data Storage

The RBR Data Controller comes with an internal 8GB Compact Flash Card to which data are stored. A USB Memory stick may be used in addition to store data in ASCII Text or Excel file format. Data from RBR Instruments can be stored in RBR software compatible format. Every individual port will be written into a separate file.

Data may be accessed using the RBR Windows® software or via USB port (USB client or USB Memory stick) or Secure Shell File Transfer Protocol (SFTP). If suitable telemetry is attached the system may be setup and data downloaded remotely during runtime.

Alternatively, RBR offers the possibility to store real-time data in a data base which can be accessed and visualised via web interface or RBR Software.

Software

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

Mechanical Details

The standard data collecting system is supplied in a low profile aluminium NEMA 4 box . This hardware contains up to 12 serial ports (11 RS232 and 1 RS485) for external sensors. Larger arrays of PC104 cards can be accommodated using bigger boxes if needed.

The unit is based on a low power PC104 compatible single board computer with Intel® 400MHz PXA255 XScale® RISC processor running embedded Linux.

Size (as illustrated): 22cm x 15cm x 9cm



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