

# Commands for System Integration

## RBR XR Series Loggers & RS-485

### Basic Commands

RBR XR series loggers are able to respond to some very simple commands that permit operation as an OEM sensor. These commands are designed to permit easy integration with ROV and AUV platforms, as well as data buoys.

All communication is performed on the serial line. The default baud rate is 19,200, and the settings are 8 bit, 1 stop bit, no parity. The baud rate may be changed by advanced commands.

#### *To awaken the logger:*

To save power, loggers go to sleep when inactive. To regain attention send the character "A" twice. The logger will respond with a string of the form: "XR-420 012345 6.75<cr><lf>" where the model number is XR-420, the serial number follows, and then the firmware version number; The terminator <cr><lf> is the ascii characters for carriage return; line feed. Once awake the logger will remain alert for 10 seconds.

#### *To fetch some data:*

Send the string "F00". The response has all channel readings in the form:

**TIM YYMMDDhhmmss Sxxx.yyyy ....Sxxx.yyyy FET <cr><lf>**

where "TIM" is the header; then a time stamp and the S is the sign, only used if the data are negative; leading zeroes are suppressed; and the string terminates with "FET<cr><lf>".

#### Quick Reference:

Send "A" twice to awaken logger  
Send "F00" to request all channels

Response is:  
TIM YYMMDDhhmmss xxx.yyyy...FET



### Addressable RS-485 Commands

A chain of RBR instruments may be connected using RS-485

#### *To obtain a real-time sample:*

1. Send <cr> to awaken all loggers
2. Send 'Q5xxxxxx' to open a 2-way channel with logger id xxxxxx. If successful the response will be the logger id plus two checksum characters: 'xxxxxxcc'
3. Send 'F00' to obtain a real-time sample.

#### *To obtain samples from all loggers:*

1. Send <cr> to awaken all loggers
2. Send 'Q500002' to open a 1-way channel with all loggers. There will be no response to this
3. Send 'FDD' to prompt all loggers to take a real-time and store it.
4. Send 'Q5xxxxxx' to open a 2-way channel with logger id xxxxxx. If successful the response will be the logger id plus two checksum characters: 'xxxxxxcc'
5. Send 'FED' to return the stored real-time sample
6. Repeat steps 4 and 5 for all the loggers on the chain.



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