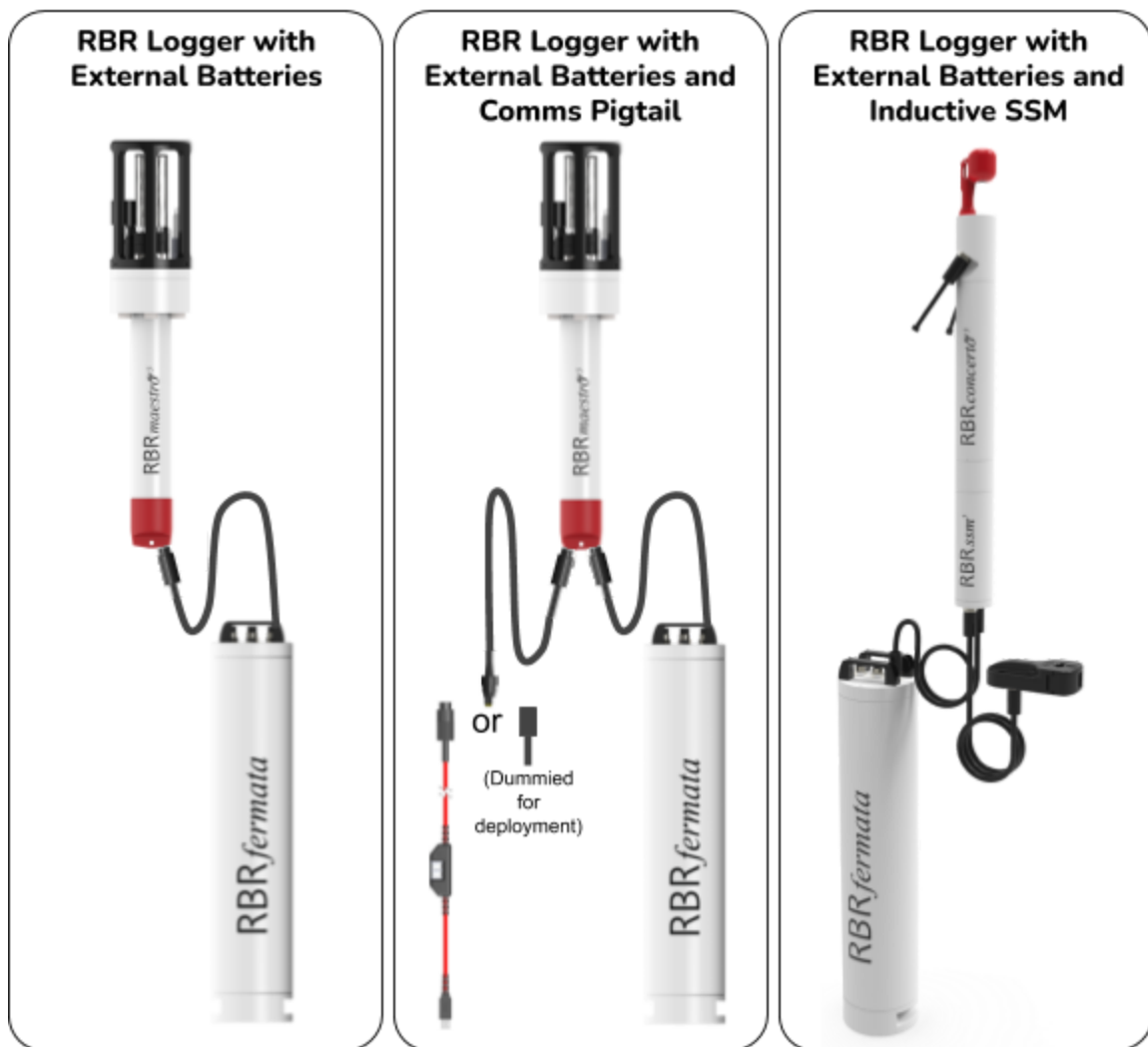# RBR LOGGERS ON WIREWALKERS

Technical Note

RBR LOGGER END CAP VARIATIONS

RBR standard loggers have a variety of end cap options, each with a slightly different way it's integrated into the Wirewalker and connected to other components. The three most common options for integrated RBR loggers are shown below.

All scenarios where an end cap connector is present can connect the logger (MCBH-6-MP) to a battery canister (eg RBRfermata, MCBH-6-FS). A 12V power supply is typical, but other outputs may be present if the WW includes additional sensors (such as an ADCP). While the Gen3 RBR loggers handle a wide range of voltages (refer to RBR manual), the SSM is limited to 12V.

A RBR logger with a second connector (MCBH-6-MP) can utilize an extension data cable for easy access to the logger. The cable should be dummy plugged for deployment and secured to the WW, but accessible when the cowling is installed. A RBR 'patch cable' can be plugged in for active communications.

If using an SSM, the second connector (MCBH-2-MP) is dedicated for the cabled ferrite holder.

RBR LOGGER PROGRAMMING TIPS

RBR standard loggers (aka RBR*concerto*, RBR*maestro*, etc) are available in a large variety of configurations. There is no way we can cover all configurations in this guide, but there are some basic principles that are very useful to understand. However, this note contains tips; it is not intended to be a replacement for the actual manual. Users should rely on the RBR Standard Logger User Guide to fully understand the capabilities of the instrumentation. We assume you are familiar with connecting to a logger and will be using RBR's Ruskin software.

In this example, a logger with CTD + RBRcoda T.ODO + Turner Cyclops Turbidity sensor and |fast16 was simulated. The following addresses a few best practices when sampling from a WW.
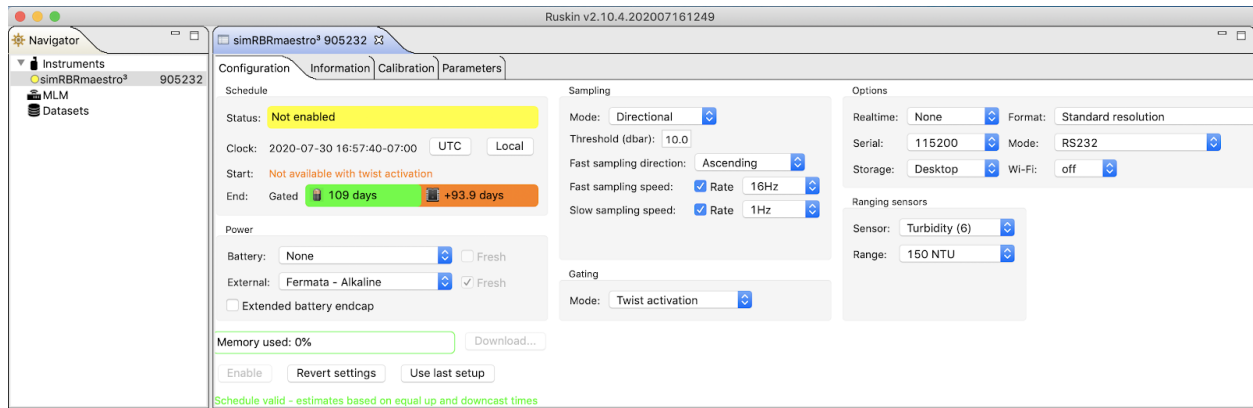
POWER: To increase endurance, loggers are often accompanied by a RBR*fermata* (battery canister). Select the External power option you plan to use (typically Fermata - Alkaline). Selecting NONE for the internal batteries will ensure some additional safety margin in your power budget.

SAMPLING: The Directional mode, with fast sampling in the Ascending direction, is most appropriate for WWs. The fast sampling speed applies to each upcast and should be set to as fast as possible/appropriate for the application. The slow sampling speed applies to each downcast; 1Hz being the popular choice. If the speed is set too slow, there might be a significant delay in the logger detecting a change of direction. The threshold value is profiling depth dependent; the 10 dbar default generally works well, but you may choose to reduce that for very shallow deployments.

GATING: Twist activation is common, but all work well. We advise becoming familiar with each option.

OPTIONS: The defaults are generally suitable for autonomous WW deployments.

RANGING SENSORS: Avoid the Auto settings for any sensors listed here; it's best to choose a suitable fixed range for profiling applications. The auto detection tends to take some time to switch gains and is not well suited for detecting thin layers or sharp gradients. Fixed ranges are often more power efficient too. Choose a range for each sensor listed in the sensor dropdown.

ENDURANCE ESTIMATE (i.e. Schedule/End): The graphic contains 2 icons (battery and memory); the leftmost is the limiting factor, with corresponding duration estimate. The value on the right displays the endurance remaining until that category would become limiting. In our example, power is limited to ~109 days, but there are ~93.9 days of *additional* memory available (i.e. ~202.9 days total). Also, *this is an estimate* for planning purposes; actual results may vary.

USE WITH RBR*cervello*: A RBR*cervello* will send a pre-configured file to the logger with compatible settings. This overwrites many of the settings above which may affect endurance. It is advised that you discuss these settings directly with RBR and learn how to alter them safely. For instance, the RBR*cervello* uses Storage=Mobile which includes derived channels, but uses considerably more memory. Unless specified in the Cervellos config file, last used range settings will be maintained.