



Intelligent Test Box

Datawell - Oceanographic Instruments

Sequential discharge of battery strings by the ITB

The Intelligent Test Box or ITB enables the sequential (as opposed to simultaneous) discharge of individual battery strings in the DWR-MKIII and DWR-G.

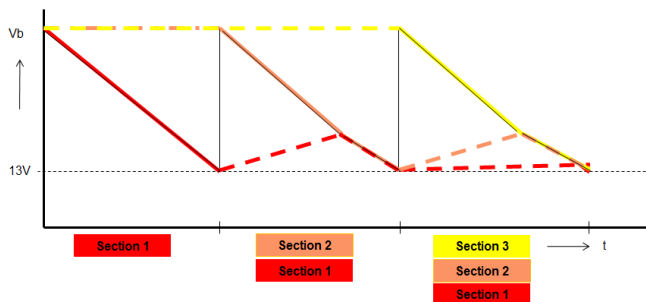
Thus you need to replace the empty batteries only before starting the next short measuring campaign.

The ITB replaces the currently used Test Box.

Design

Basically the ITB is an intelligent switch, controlled by a microprocessor that switches between the individual battery strings.

The battery supply voltage to the hatch is monitored and when it becomes low, in case of a discharged battery string, the ITB will switch over to the next fresh string keeping the first string enabled as well. In that way the energy of the previous string is fully used, thus prolonging the operational life of the buoy to the max. It's an experimental fact that the voltage of exhausted batteries somewhat recovers.



Battery strings discharge principle

Care is taken in the switching sequence to avoid power dips. The search sequence of the ITB is ABCDE.

Operational

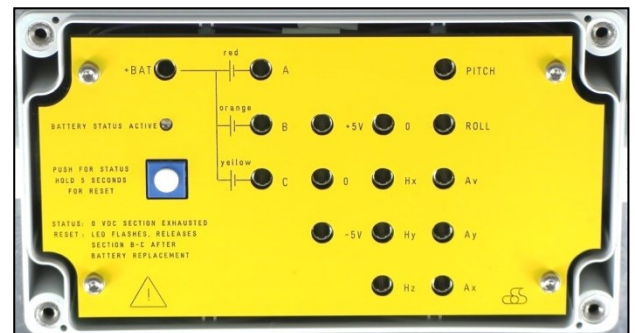
Similarly to the current test box, the ITB comes with test sockets for each battery string, allowing to check the strings with a voltmeter.

Pushing the button on the ITB's panel will light up the LED for 1 minute. During this minute you must check the battery voltage of each section.

With the ITB, the strings which are exhausted will measure 0 Volt. The string in use will measure its actual voltage level and the string(s) which are not yet used measure the maximum voltage depending on the type of buoy.

The ITB must be reset after battery replacement by pressing and holding the button until the LED starts flashing. The discharge sequence will start at battery string A again.

Depending on the version of the ITB (DWR-MKIII or DWR-G), diagnostic measurement sockets are available for the accelerator sensors and compass signals.



ITB DWR-MKIII

Availability

The ITB is available for the Datawell Directional Waveriders DWR-MkIII 0.9 m and the DWR-G 0.7 m and 0.9 m buoys that are equipped with a FB2 hatch (in some cases retrofit is possible on MKIII buoys being equipped with a previous hatch).



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Specifications

Max number Battery sections	5 (DWR-G), 3 (DWR)
Max voltage input	30 V (DC)
Box Size	160 x 90 x 60 mm
Battery switch threshold	13 V
Average Power consumption	4 mW