Modular Tester user guide: battery tester

Revision 11/12/2024

The battery tester tests the battery in unloaded and loaded conditions with a preset or adjustable load, maximum battery voltage 12V.

After power on the module shows the splash screen and goes to sleep.

Press the right rotary encoder and hold until the splash screen appears.

Turn the right encoder to select the battery type.

After selecting the proper battery type connect the battery to the terminals, mind the polarity. If a reverse polarity is detected, functionality will be limited.

The tester powers on in automatic start mode allowing hands free operation, this means the test process is started when a battery voltage above 0.5V is detected.

The tester can be put in manual start mode via the menu, in that mode press the right encoder button to start the measurement.

During the test the voltage is measured in unloaded condition, then loaded with the preset current for 2 seconds and measured again at the end of this cycle.

The status is shown in the top right:

- M in blue: manual start mode, waiting for button
- M in green: measuring, manual start button is pressed
- A in blue: waiting for trigger voltage in automatic start mode
- A in green: measuring in automatic start mode
- A in orange: measuring in automatic start mode is completed, waiting for battery voltage to drop below 0.5V, note that all other actions are ignored during this phase

Turn the left encoder to switch between the standard measuring mode and the manual mode.

In manual mode the load is always on and can be adjusted with the right encoder.

Press right encoder long for the menu, turn to select, press to select or toggle setting:

Return: return to main screen.

Automatic start / Manual start: toggle between automatic start or manual start of the measurement.

Go to sleep: put the module to sleep.

Calibrate: go to calibration mode.

Calibration procedure

Note: the value of the sense resistor (consisting of a number of parallel resistors) must be measured exactly and entered in the source code before calibrating.

Go to the menu and select *calibrate*.

Step 1 current offset

Apply a voltage to the battery terminals, for example 10V, current meter in series.

Check current.

Step 2 battery voltage

Apply a voltage to the battery terminals, for example 10V.

Turn the rotary encoder until the display matches the voltage.

This calibrates the voltage divider and ADC.

Step 3 current

Apply a voltage to the battery terminals, for example 10V (set current limit above 200ma).

It will now auto calibrate from 1-200mA.

Goes to sleep when completed.


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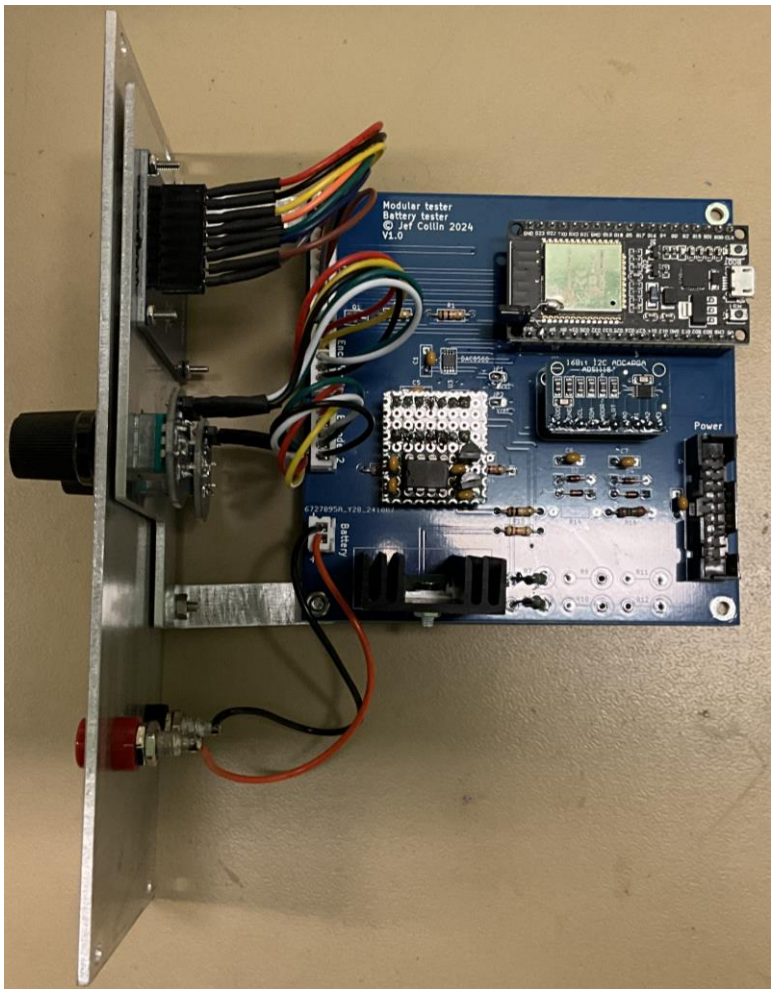
Modular tester
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