This Quick Manual is a shortened explanation of how to test an e-bike battery with Batterytester. For the first use we strongly advise to read the full instruction manual.

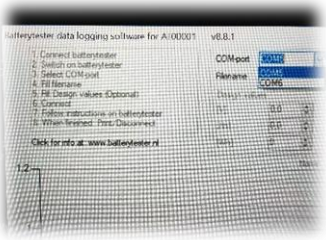
1) Take care that the battery is fully charged.

2) Connect the test cable to the batterytester.

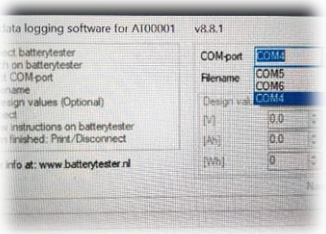
3) Connect the test cable to the battery.

4) Connect the USB cable to the Batterytester.

5) Start Batterytester Program on your PC / Laptop. Select COM port (in this case 2 COM ports are in use, no. 5 en 6).

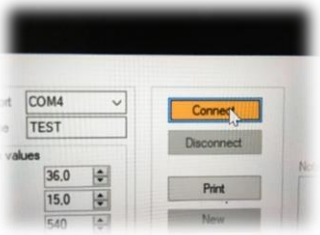


6) Now connect the USB cable to your PC / Laptop. Select the COM port to which Batterytester is connected to your PC (in this case COM port 4).



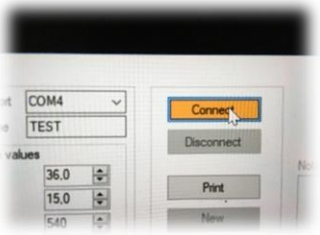
7) Turn Batterytester ON.

8) Give the test a name (file name).
Fill out the data of the battery (V, Ah, Wh).
Press "connect".



9) In this field you can fill out the data you want (e.g. customer data).

10) Klick 'connect'.

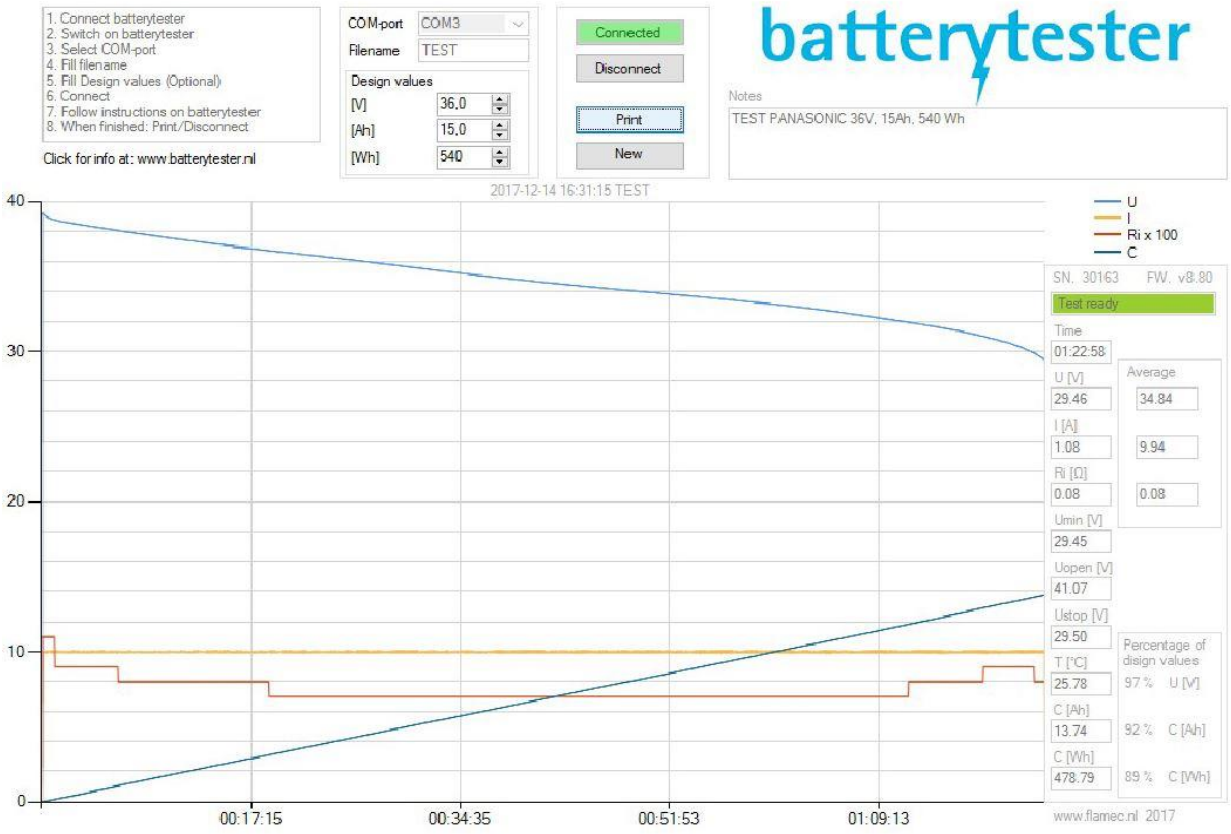


11) Go to the Batterytester and press one time shortly the 'Select' button.

12) On both your PC / Laptop as in the display of Batterytester the measurement values are developing.

13) Test ready? Print result by pressing shortly the 'Select' button (cashier paper) or via the PC Software Program by clicking 'Print' (A4 test report).

Explanation battery test report:



Guidelines for testing e-bike batteries

1. Check the internal resistance (Ri), normally 0.1 ohm until 0.3 ohm. Possible causes when this is higher than 0.4 ohm:
   Battery is broken, reduced capacity, failure in case of mountain tours;
   Current is set too high for type of battery, reduce current;
   Bad connection between battery and tester, check cable and connectors.
2. Check Uopen, the open clamping current has to reach the load current, normally 0.2V to 1V lower. When lower, leave the battery for 4 hours and charge again. Possible causes when this is lower:
   Battery is not fully loaded;
   Charger is broken;
   Battery is broken, reduced capacity (for example because of an imbalance in cells).
3. Check Umin. This is the battery current just before end of test. One can determine from this whether the battery has been fully discharged, normally approx. 0.72 x charge current. When this is too high the battery has not been fully discharged. Possible causes:
   Discharge current is set too high by which the battery thermally turns off, turn the select button to restart the test (reduce discharge current);
   Cable between battery and tester is disconnected, check cable and restart test;
   Battery is broken, reduced capacity (bad cells because of which BMS turns off).
4. Check the capacity: Ah and Wh and compare these with the battery specifications. When the percentage is lower than 70%, the battery has been 'economically' depreciated.