HULK 4X4

LCD BATTERY METER
INSTRUCTION SHEET

OVERVIEW

This document describes how to use and the specifications of the LCD BATTERY METER (HU6677B). This meter can be used to test all kinds of battery types, including voltage, discharge current, discharge power, discharge impedance, internal resistance, capacity, dump energy, energy consumption and running time, and display the measurement data through LCD screen.

Measuring Range is 300A (needs to be used with 300amp external shunt provided).

1. FUNCTION DESCRIPTION

1.1 Voltage
1.1.1 Measuring range: 0-200V. (when the test voltage is <8V, please use the independent power supply mode)
1.1.2 Display format: <10V display as: 9.99V
　　　　　　　　<100V display as: 99.9V
　　　　　　　　≥100V display as: 199V
1.1.3 Minimum resolution:0.01V
1.1.4 The starting test voltage: 0.05V
1.1.5 Measurement accuracy:1%

1.2 Current
Measuring range: 0-300A using the supplied shunt. Default setting is 100A.
1.2.1 Display format: <1A display as: 999mA
　　　　　　　　<10A display as: 9.99A
　　　　　　　　<100A display as: 99.9A
　　　　　　　　≥100A display as: 199A
1.2.2 Minimum resolution: 1mA
1.2.3 The starting test current: 20mA
1.2.4 Measurement accuracy:1%

1.3 Power
1.3.1 Measuring range: 0-60000W.
1.3.2 Display format: <10W display as: 9.99W
　　　　　　　　<100W display as: 99.9W
　　　　　　　　<1000W display as: 999W
　　　　　　　　<10000W display as: 9.99kW
　　　　　　　　≥10000W display as: 19.9kw
1.3.3 Minimum resolution: 0.01W
1.3.4 The starting test power: 0.2W
1.3.5 Measurement accuracy:1%

1.4 Impedance
(Impedance=Voltage/ Current)
1.4.1 Measuring range: 0-1000Ω
1.4.2 Display format: <100Ω display as: 99.9Ω
　　　　　　　　≥100Ω display as: 999Ω
　　　When over the test range or the current is zero, it display "---"
1.4.3 Minimum resolution: 0.1Ω
1.4.4 Measurement accuracy:1%

1.5 Internal Resistance
Internal resistance= (Full voltage – Bring load voltage) / Bring load current, when the bring load voltage is larger than the maximum voltage, the internal resistance

1.5.1 Measuring range: 0-999mΩ
1.5.2 Display format: 999mΩ, when over the test range or the current is zero, it display "---".
1.5.3 Minimum resolution: 1mΩ
1.5.4 Measurement accuracy:1%

Note: Before you test the internal resistance, you should preset the full voltage depending on the battery type, after it is fully charged you can use it to test; if you do not fully charge it, you can set the battery without load voltage is the full voltage, then test; the internal resistance is not a fixed value, the more the battery discharged, the bigger the resistance.

1.6 Capacity
1.6.1 Measuring range: 0-1000AH
1.6.2 Display format: <1AH display as: 999mAH
　　　　　　　　<10AH display as: 9.99AH
　　　　　　　　<100AH display as: 99.9AH
　　　　　　　　<1000AH display as: 999AH
1.6.3 Minimum resolution: 1mAH
1.6.4 Measurement accuracy:1%
Note: Battery capacity testing is a cumulative process of discharge current versus time, it needs some time, the time is dependent on the discharge current; before you test the capacity, you should preset the full voltage and the cut-off voltage depend on the battery type, after it is fully charged you can use it to the discharge test; When the dump energy display blank, it means the discharge is over, this capacity display value is the batteries capacity.

1.7 Dump energy
Dump energy is display via the battery symbol, totally 10 grids, every grid presents 10% energy.
Dump energy is calculated via the current battery voltage value, before test you should preset the full voltage and the cut-off voltage depending on the battery type; every grid voltage = (the highest voltage – the lowest voltage) / 10.

1.8 Accumulate energy consumption
1.8.1 Measuring range: 0~9999kWh
1.8.2 Display format: <1kWh display as: 999Wh
　　　　　　　　<10kWh display as: 9.99kWh
　　　　　　　　<100kWh display as: 99.99kWh
　　　　　　　　<1000kWh display as: 999.99kWh
　　　　　　　　≥1000kWh display as: 9999kWh
　　Over the test range will become zero.
1.8.3 Minimum resolution: 1Wh
1.8.4 Measurement accuracy:1%
Note: 1Wh=0.001kWh=0.001 Kilowatt

1.9 Running time
1.9.1 Measuring range: 0 ~ 999 hour (without load the time will not accumulate)
1.9.2 Display format: 0:00:00 ~ 999:59:59
　　　Over the test range will become zero.

2. OPERATING INSTRUCTIONS
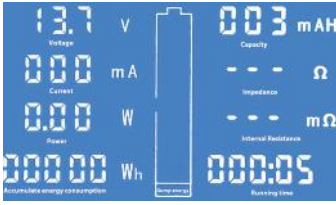
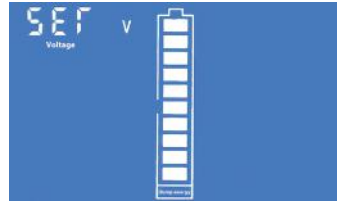2.1 Setting the full and cut-off voltage

Figure 1: The normal display interface

Figure 2: The voltage setting interface

2.1.1 Set the full voltage:

Step 1: In the normal display interface(like fig. 1), long press the button until the LCD screen displays the interface like fig. 2, then release the button
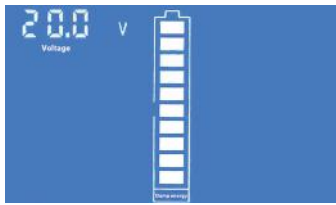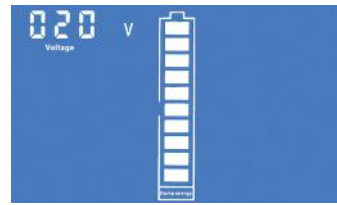

Figure 3: Full voltage setting interface (low bit)

Figure 4: Full voltage setting interface (high bit)

Step 2: SET character blink present it is the setting status of full / cut-off voltage, long press the button until the LCD screen display the interface like fig. 3, then release the button.

Step 3: At this time, the battery symbol displays full grids of energy and this means the full voltage setting status, factory default the full voltage is 020.0V, the numerical code circulation flashing from the low bit to the high bit show that the current setting digit, short press to set the digit; please pay attention to that, as the full voltage setting value has 4 digits, but the numerical code has only 3 digits.

So the setting is divided into two parts: low bit (fig. 3) +high bit (fig. 4). For example, the default full voltage is 020.0V, then the display state is 20.0V to 020V low and high cyclic switching display. If you need to set the full voltage is 199.0V, then please set the low bit to 99.0V, when the cycle reaches the high bit, it will display 099V, and only the highest zero bit flickers to prompt you it can be settled. Setting the high bit to 199V represents the full voltage is 199.0V.
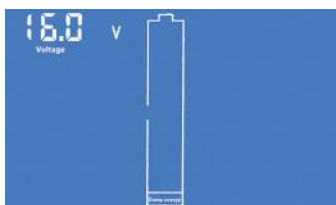

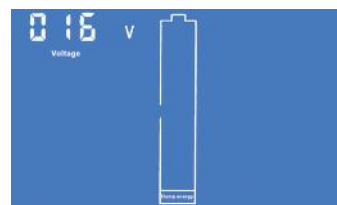Figure 5: Cut-off voltage setting interface (low bit)

Figure 6: Cut-off voltage setting interface (high bit)

2.1.2 Set the Cut-off voltage:

Step 1: After you set the full voltage, you will need to press the button longer until LCD shows the interface of Fig. 5, then release the button;

Step 2: At this time, the battery symbol shows the zero-grid to indicate the cut-off voltage setting state, the default cut-off voltage is 016.0V, the setting method is the same as above; the cut-off voltage is 0.8 times of the full voltage by default, after setting the full voltage, the cut-off voltage is automatically generated in the relationship of 0.8 times; otherwise, you can reset it;

After all the above settings are completed, long press of the button until the settings are saved and exit the setting status, restore the normal display interface.
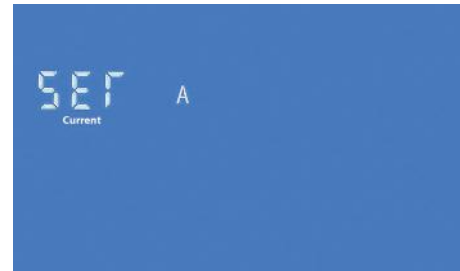
2.2 Current range setting

Figure 7: Current range setting interface

Step 1: In the normal display interface, long press of the button until the LCD shows the interface of Figure 2, then release the button, short press of the button again switch to the interface to Figure 7, it indicates that this state is the current range setting state.

Step 2: Longer press of the button until the LCD shows the interface of Figure 8, then release the button, short press the button again to switch the current range. This meter provides four current ranges, factory default is 100A, choose the corresponding range according to the shunt.

Step 3: After the current range setting is completed, long press the button until the settings are saved and exit the setting status, restore the normal display interface.
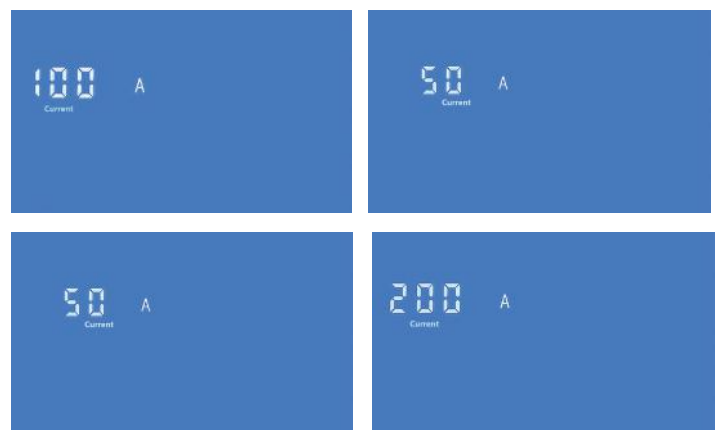

Figure 8: Current range choosing interface

Step 2: Longer press of the button until the LCD shows the interface of Figure 8, then release the button, short press the button again to switch the current range. This meter provides four current ranges, factory default is 100A, choose the corresponding range according to the shunt.

Step 3: After the current range setting is completed, long press the button until the settings are saved and exit the setting status, restore the normal display interface.

2.3 Clear the Energy

Figure 9: Clear the energy interface

Step 1: In the normal display interface, long press of the button until the LCD shows the interface of Figure 2, then release the button, short press of the button again will switch to the interface to Figure 9, it indicates that this state is the clearing energy setting state.

Step 2: Longer press of the button until the data has been cleared and exit the setting status, restore the normal display interface.

2.4 Clear the capacity

Figure 10: Clear the capacity interface

Step 1: In the normal display interface, long press of the button until the LCD shows the interface of Figure 2, then release the button, short press of the button again switch to the interface to Figure 10, it indicates that this state is the clearing capacity setting state.

Step 2: Longer press the button until the data has been cleared and exit the setting status, restore the normal display interface.

2.5 Clear the running time

Figure 11: Clear the running time interface

Step 1: In the normal display interface, long press of the button until the LCD shows the interface of Figure 2, then release the button, short press of the button again to switch to the interface to Figure 11, it indicates that this state is the clearing running time setting state.

Step 2: Longer press of the button until the data has been cleared and exit the setting status, restore the normal display interface.

2.6 Working mode

This meter has two modes: normal display mode and dormant mode. In normal display mode, short press the button to enter the dormant mode, in order to reduce the whole machine power consumption, the backlight and LCD display will be turned off in dormant mode. In dormant mode, short press the button will switch to the normal display mode.

Note: The meter will stop all measurement functions in dormant mode, so please do not switch to dormant mode if normal measurement is performed.

3. PLEASE BE AWARE:

3.1 This module is suitable for indoor use only, it is not water proof, so please do not use outdoors.

3.2 Applied load should not exceed the rated voltage, current.

3.3 Please make sure it is wired correctly, if not followed correctly it can permanently damage the unit.

Warranty not given if this is the case.

4. OTHER SPECIFICATION
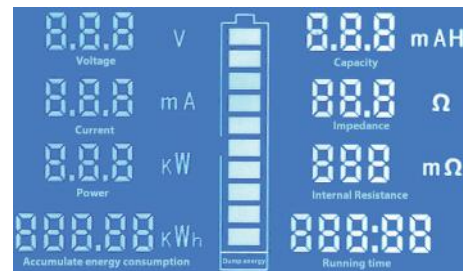
4.1 LCD full display figure

Figure 18: LCD full display figure
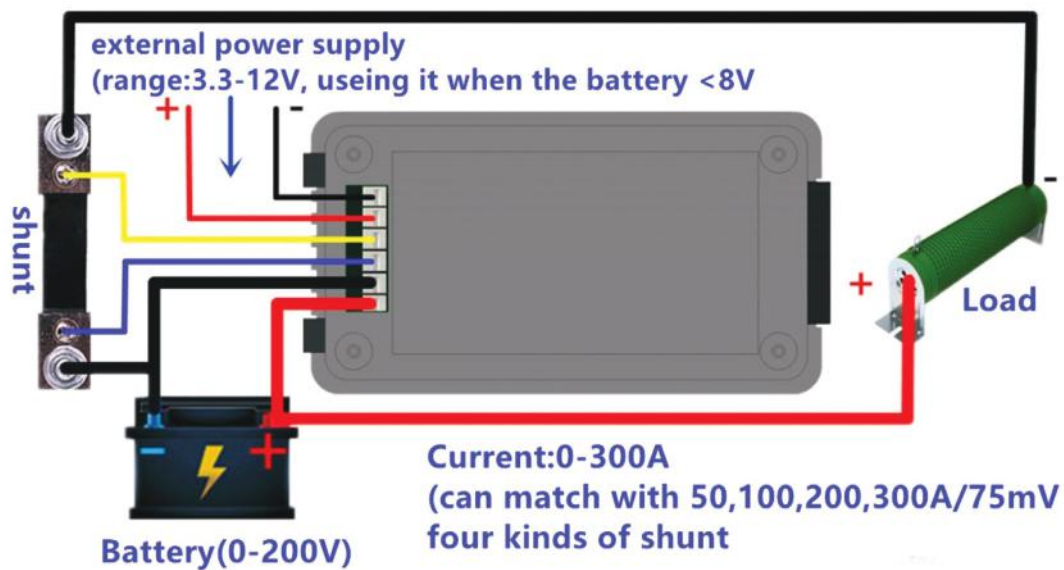
4.2 Power consumption
Normal working state: 0.03-1.2 W
Sleeping state: 0.5mW-0.5W
The power consumption is related to the test voltage value, the higher the voltage the greater the power consumption.

4.3 Working temperature
-20'C ~ +60'C

5. WIRING DIAGRAM

external power supply
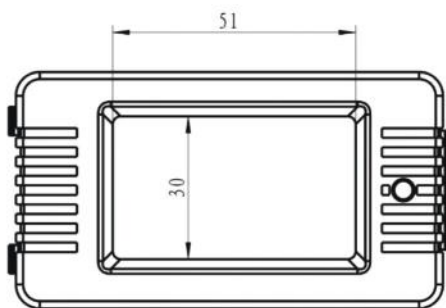(range:3.3-12V, useing it when the battery <8V

shunt

Load

Current:0-300A
(can match with 50,100,200,300A/75mV
four kinds of shunt

Battery(0-200V)

6.DIMENSIONS FIGURE (MM)

51
30

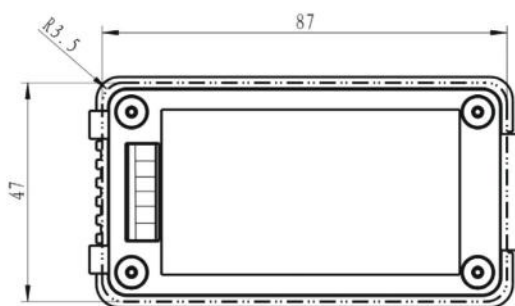Figure 14 LCD Screen size

89.6
84.6
49.6
44.6
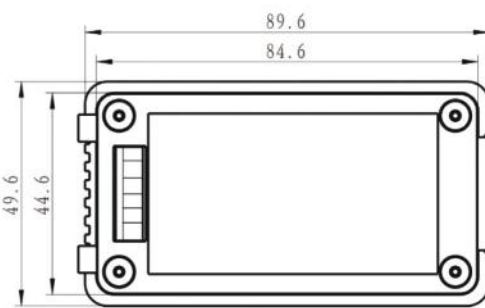
Figure 15 Out frame size

R3.5
87
47

Figure 16 Hole size

24.25

Figure 17 Height size