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Battery tester

--Multi Information Display

Product Introduction

This document describes the specification of the PZEM-015DC multifunction battery tester, this meter is mainly used to test all kinds of battery's voltage, discharge current, discharge power, discharge impedance, internal resistance, capacity, dump energy, energy consumption and running time, and display the measurement data through an LCD screen.

PZEM-015: Measuring Range 300A (use external shunt, can be matched with a 50A, 100A, 200A or 300A shunt).

Product Features

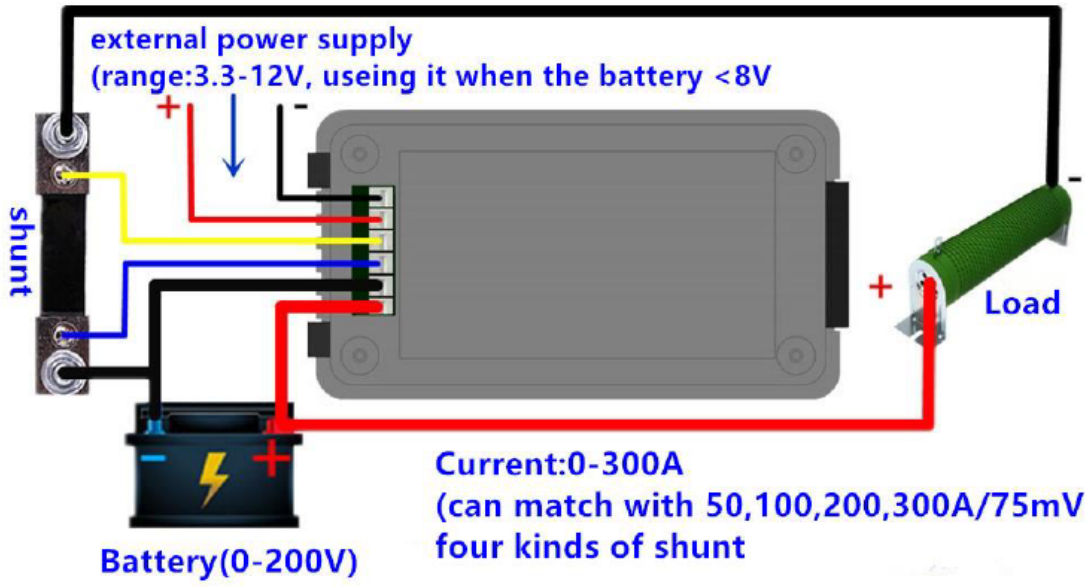
- Measuring DC voltages ranging 0.05 – 200V (independent power supply required for voltages < 8V)
- Measuring DC currents ranging 0.02 – 300A
- Measuring power ranging 0.2 – 60 000W
- Measuring impedance 0 – 1000 ohm
- Measuring internal resistance 0 – 999 milli-ohm
- Measuring capacity 0 – 1000 AH
- Calculates linear state of charge 0 – 100% (in 10% increments)
- Calculates accumulated energy consumption 0 – 9999 kWh
- Displays total running times 0 – 999 h (for information only)

Technical Specification

Voltage:	0.05 – 200V DC Minimum resolution 0.01V Accuracy 1%
Current:	0.02 - 10A Minimum resolution 1 mA Accuracy 1%
Power:	0.2 – 60 000W Minimum resolution 0.01W Accuracy 1%
Impedance:	0 – 1000 ohm Minimum resolution 0.1 ohm Accuracy 1%
Internal resistance:	0 – 999 mile-ohm Minimum resolution 1 milli-ohm Accuracy 1% Calculated: Internal resistance = (Full voltage - load voltage) / load current NB: when the load voltage is larger than the maximum voltage, the internal resistance is zero.
Capacity:	0 – 1000AH Minimum resolution 1 mAH Accuracy 1% NB: the full voltage and cut-off voltage need to be set prior to running a capacity test. It is recommended to use the float voltage for “full voltage” setting.
State of charge indication:	Linear calculation based on the difference between full voltage and cut-off voltage, equally divided into 10 grids.
Accumulated energy:	0 – 9999 kWh Minimum resolution 1 Wh Accuracy 1%
Running time	0 – 999h

INSTALLATION

Please connect the cable in the correct order as shown in the figure below.
The “load” can be any device that consumes DC power such as a motor, resistor or even an inverter.



Setting up

Set the full voltage and cut-off voltage:

I. When the device is connected, it will show the display screen like Figure 1 below.
II. Press and hold the button until the display screen changes to Figure 2 below. Release the button if it has changed.
III. Press and hold to go into “Set” until the display screen changes to Figure 3 below. Release the button if it has changed.
IV. It will start to cycle through the digits by means of flashing the digit which can be changed. Press the button once to change a digit at the desired location. Wait for the cycle to move on to the next digit, it will start to flash when it is ready to be changed.
V. When the desired value is input, press and hold the button to store the value.
VI. The screen will change to Figure 5. This is the cut-off voltage setting page.
VII. It will start to cycle through the digits by means of flashing the digit which can be changed. Press the button once to change a digit at the desired location. Wait for the cycle to move on to the next digit, it will start to flash when it is ready to be changed.
VIII. When the desired value is input, press and hold the button to store the value.
IX. The screen will return to the main screen.

The following settings can be used:

Battery	**Configuration**	**Full voltage value**	**Cut-off voltage value**
The Sun Pays AGM/Gel	12V	13.6V	11.4V
The Sun Pays AGM/Gel	24V	27.2V	22.8V
The Sun Pays AGM/Gel	48V	54.4V	45.6V
The Sun Pays 100AH 48V LiFePO4	48V	51.5V	47.4V
The Sun Pays 30AH 12V LiFePO4	12V	14.4V	10.5V

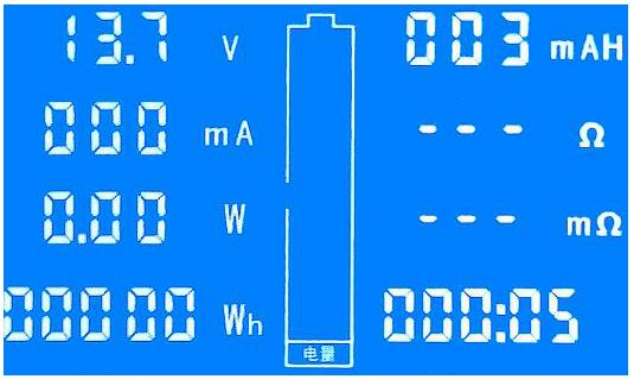


Figure 1: the normal display interface

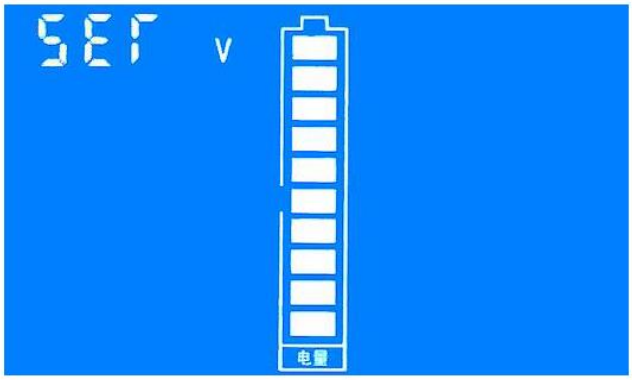


Figure 2: the voltage setting interface

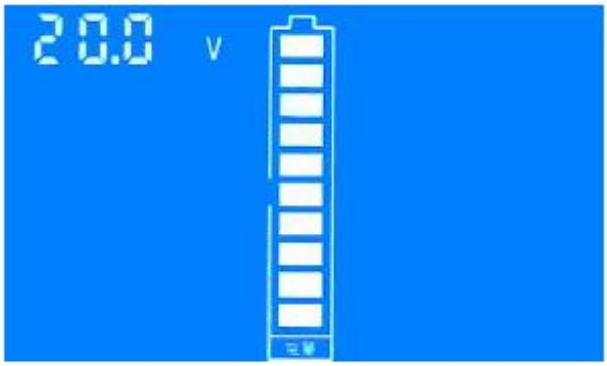


Figure 3: full voltage setting interface (low bit)

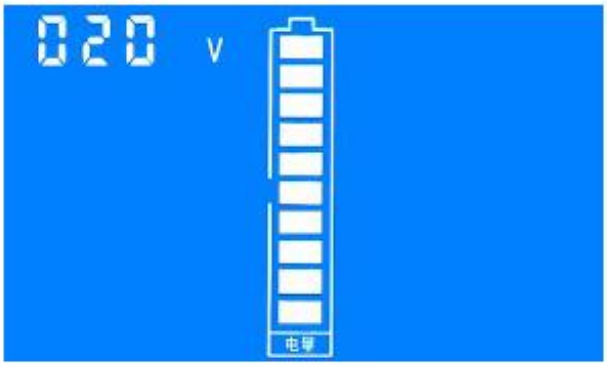


Figure 4: full voltage setting interface (high bit)

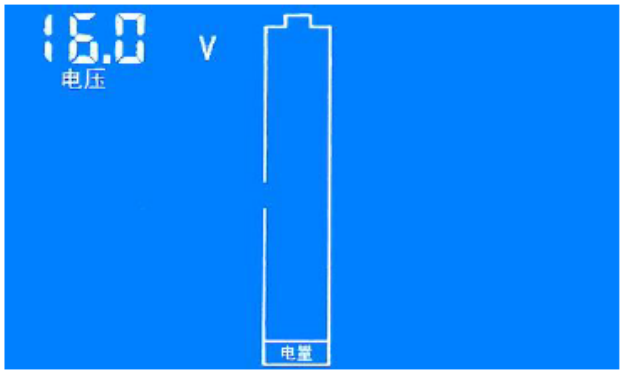


Figure 5: cut-off voltage setting interface (low bit)

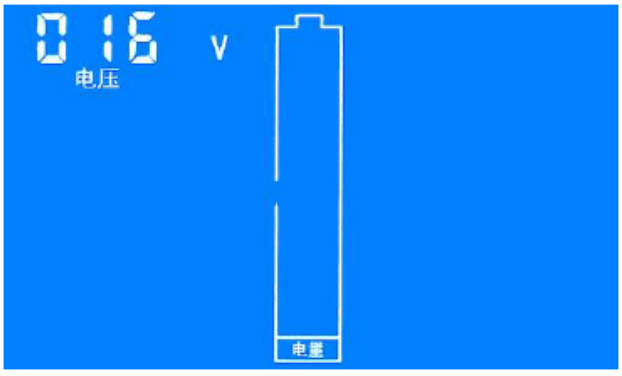


Figure 6: cut-off voltage setting interface (high bit)

Setting the current range

Set the current range:

I. When the device is connected, it will show the display screen like Figure 1 above.
II. Press and hold the button until the display screen changes to Figure 2 above. Release the button if it has changed.
III. Press the button again to cycle through the menu until “Set A” in reached. See Figure 7 below.

Figure 7 Current range setting interface

IV. Press and hold the button to enter the setting until the screen has changed to Figure 8.
V. Press the button to cycle through the various options. Choose the option for the correct shunt size that is installed by pressing and holding the button at the correct value.
VI. The screen will return to the main screen.

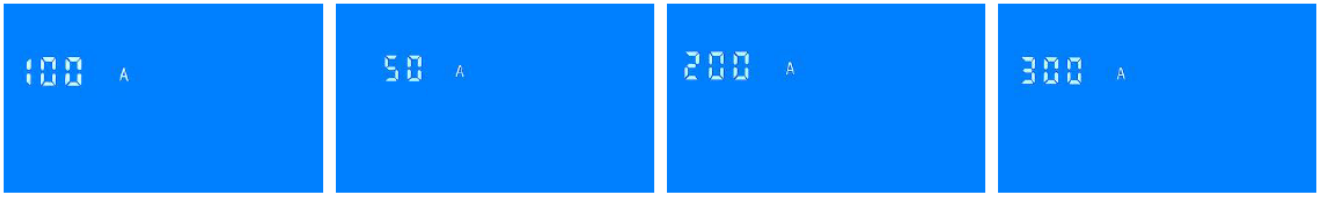


Figure 8 Current range choosing interface

Other settings

To clear the memory for energy, capacity or running time

I. When the device is connected, it will show the display screen like Figure 1 above.
II. Press and hold the button until the display screen changes to Figure 2 above. Release the button if it has changed.
III. Press the button again to cycle through the menu until “CLr” is reached. See Figure 9 below for the clear energy function. See Figure 10 below for the clear capacity function. See Figure 11 below for clear running time function.
IV. Press and hold the button on the desired clear function.
V. The screen will return to the main screen.

Figure 9 clear the energy interface

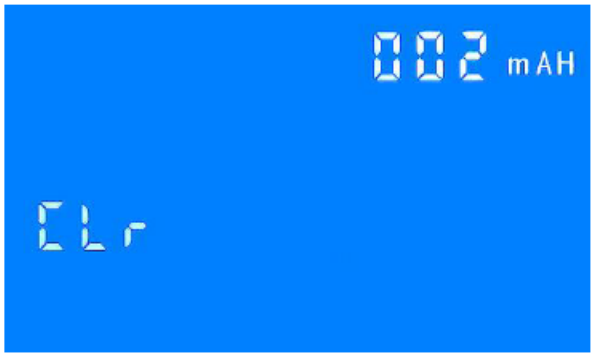


Figure 10 clear the capacity interface

Figure 11 clear the running tim interface