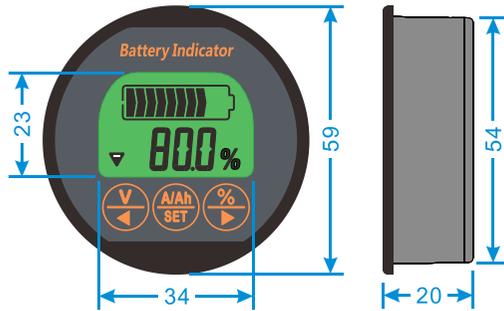


# Battery Capacity Monitor

— Instruction (English version) —



## Product Overview

This is a typical high precision current type battery capacity monitor (also known as coulometer), designed to test the voltage, current and capacity of a battery to help users know the state of a battery in real time. This device has a memory function. It is suitable for mobile and portable equipment using battery power e.g. RV's, Marine, Mobility Vehicles, Remote Power, Instruments, UPS etc..

## Application

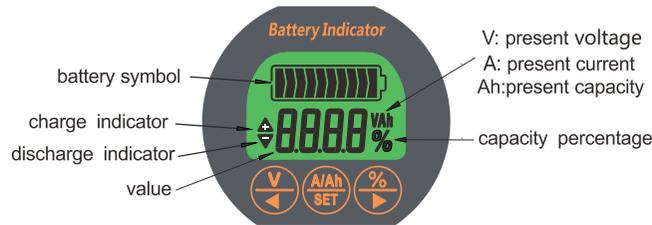
This product is suitable for Lithium battery, Lithium Iron Phosphate battery (LiFePO4), Lead-Acid battery and Nickel Metal Hydride battery with a working voltage from 8V to 100V.

## Basic Parameters

Parameter	Min	Type	Max	Unit
Voltage range	8.0		100.0	V
Power consumption		10.0	12.0	mA
Standby consumption		0.5	0.6	mA
Sleep consumption		50	60	uA
Voltage accuracy		±1.0		%
Current accuracy		±1.0		%
Capacity accuracy		±1.0		%

Parameter	Min	Type	Max	Unit
Capacity range	1.0		999	Ah
Current range (50A)	0.0	50.0	75.0	A
Current range (100A)	0.0	100.0	200.0	A
Current range (350A)	0.0	350.0	500.0	A
Temperature range	0	20	35	°C
Backlight on current	50/100/150			mA
Backlight off current	30/80/110			mA
Weight	200/270/410			g
Meter size	ø59 (diameter)*20 (depth)			mm
Panel Cut-out	ø54.50 (diameter)			mm

## Monitor Display Description

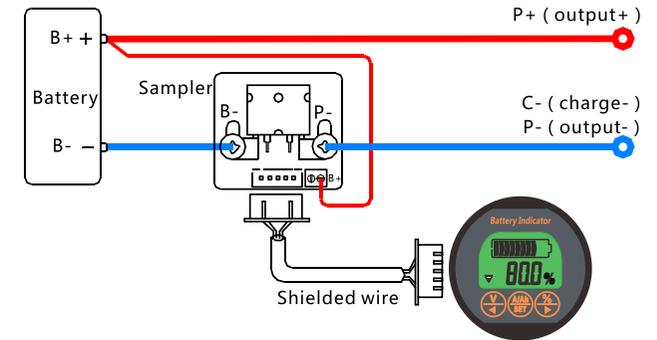


## Normal Operation:

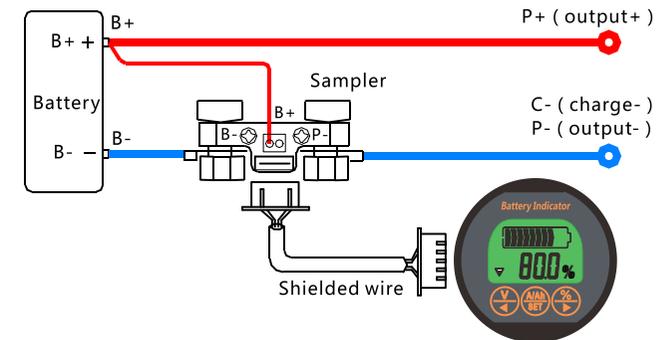
- Press key to voltage interface.
- Press key to capacity interface.
- press key again to current interface.
- Press key to capacity percentage interface.

## Connection

- 1 . First, connect the current sampler/shunt in series with negative pole of battery, the B- terminal on the shunt connects to the Battery - (neg) terminal. P- on the shunt connects to power output/charger - .
- 2 . You require a standard insulated wire (0.3-0.75mm<sup>2</sup>). One end of the standard wire connects to the Battery + (Pos) terminal and the another end connects to any one of B+ on the current shunt.
- 3 . Finally, connect the shunt to the Coulometer display using the shielded wire/ cable (Supplied with Coulometer).



(1) Connection diagram of 50A current sampler



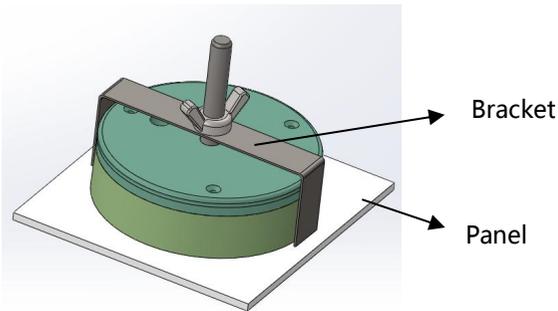
(2) Connection diagram of 100A/350A shunt

4 . Connect and check the reading. Complete the connection as shown and power on, the screen should display the battery voltage current, capacity percentage and other information. If the screen does not display, then please check the wire connections. Next step, run a charge or discharge and check display current is consistent with actual current. If the difference is large please check the connections.

**Attention: \*\*IMPORTANT\*\*** Please connect as illustrated. The shunt must be connected to the negative circuit, it must not be connected to the positive circuit. If you wish to extend the shielded wire, you must use the same cable/wire specification.

## Installation

Cut a round opening (ø54.50mm) to suit the display dimensions. Insert the Coulometer from the front of the panel, Then fix the Coulometer with bracket. As shown below:



## Initial Setup

### 1. Set the rated capacity :

Determine the rated capacity of battery, expressed in Amp-hours, eg. 100 Ah. If your battery does not state a amp hour rating on it, contact the manufacture and ask them what it is, or use this meter to measure actual capacity by yourself (Please refer to below Note section).

Press  key to capacity reading interface, hold the key  for 3 seconds and enter capacity setting mode, press  or  key to increase or decrease the value, set the capacity equal to rated capacity, press  to complete the setting.

**Note:** If you find the rated capacity doesn' t match the actual battery capacity, you can measure the actual capacity by this meter: Set the rated capacity as high as possible, for example 100Ah. Then discharge the battery totally, press  key to percentage reading interface, hold the key  for 3 seconds to set the capacity to zero. Next, charge the battery fully, then the displayed capacity is the actual capacity. Finally set the rated capacity equal to the displayed capacity (Please refer to above section).

### 2. Capacity initialization:

At first use, the percentage and capacity displayed is not the actual correct value, you should initialize the capacity : charge the battery fully, press  key to percentage reading interface, and hold the  key for 3 seconds to set the capacity full. Alternatively, discharge the battery totally and hold the  key for 3 seconds to set capacity zero. The coulometer is now calibrated, no need to repeat this except if you replace the battery.

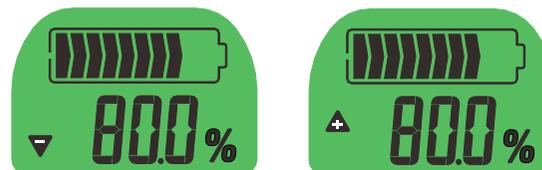
### 3. Preset voltage setting (capacity automatic zero resetting):

Press  key to voltage reading interface, press  key for 3 seconds to enter zero capacity voltage setting interface, click  or  key to increase or decrease the value, press  to complete the setting. When the voltage is lower than this value, the Ah and percentage reading will be reset to 0 and the back-light will turn off.

**Note:** It is not mandatory to set this voltage values. The default is 0V, which is the invalid / not set value. If you want to set this values, please ensure you understand the actual charge and discharge voltages of the batteries before proceeding.

## Product Operation

- 1 . When charging or discharging, the coulometer must be operational, otherwise the capacity displayed will not be accurate.
- 2 . Connect the load, if the discharge current is higher than "back-light on current" , the display back-light will turn on (if back-light is blinking, the B- and P- are inversely connected) indicating that the load is discharging.
- 3 . Disconnect the load, and connect the charger. When the charge current is higher than "back-light on current" , the back-light will be blinking (if the back-light is solidly on ,the B- and P- are inversely connected) indicating that the battery is charging.



4 . When the charge or discharge current value lower than "back-light off current" , the coulometer enters a low power state and back-light off. Besides, the coulometer will memory the capacity.

5 . Because of high sensitivity, when the coulometer is in standby mode (battery has no input or output current), if it is interfered by electromagnetic radiation (open or close inductive loads, such as a electric motor), the back-light will shortly open.

6 . When the current drastic change frequently the date acquisition may produce error, and it will affect the accuracy.

## Warning & Warranty

The monitor must not be exposed to direct sunlight for long periods of time or to an environment with large amounts of ultraviolet radiation, particular in winter ( < -20°C) and summer (>60°C), otherwise it will shorten the life of LCD display.

AiLi® warrants each AiLi® branded Battery Capacity Monitor sold by AiLi® or any of its authorized dealers or distributors worldwide, to be free of defects from the date of sale for 12 months. The warranty period starts at the time of purchase. For further warranty details refer to our website.