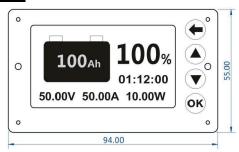# EJ-BC16 Battery Fuel Gauge

—Instruction—

● Sketch :

●Overviews :

★ BC16 is a kind of high precision current type battery capacity tester (also known as coulometer) , which can test the voltage , current and capacity of battery to help users know the state of battery in time. BC16 have memory function ,low voltage and capacity alarm function. It is suitable for mobile and portable equipments、e-bike、balance cars、cleaning machines、instruments、ups and so on.
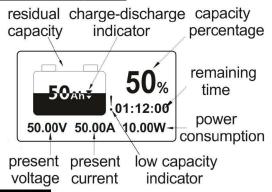
● Application :

★ This product is suitable for lithium batteries , lithium iron phosphate batteries , lead-acid batteries and nickel-metal hydride batteries which voltage is from 10V to 120V.

● Basic parameters :

Parameter	Min	Type	Max	Unit
Working Voltage	50.0	80.0	180.0	V
Working dissipation		10.0	15.0	mA
Standby dissipation		1.0	2.0	mA
Voltage accuracy		±2.0		%
Current accuracy		±2.0		%
Capacity accuracy		±2.0		%
Backlight on current		80.0	100.0	mA
Backlight off current		50.0	60.0	mA
Preset capacity value	0.1		999	Ah
Current of 50A shunt	5.0	50.0	75.0	A
Current of 350A shunt	75.0	350.0	500.0	A
Current of 500A shunt	500.0	500.0	750.0	A

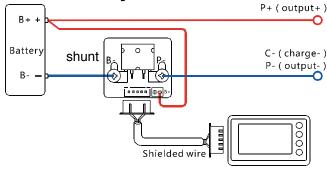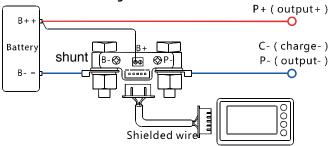| Temperature range	0	20	35	℃
Weight		75		g
Size		94×55×20		mm

● Interface description :

● Connect :

★ We need a shielded wire and a ordinary wire (0.3-0.75 mm²).One end of the ordinary wire connects to positive ,another end connects to B+ of sampler (any one is ok). The B- of sampler connects to B- of battery. P- of sampler connect to P- of output. Finally connect sampler to coulometer by the shielded wire.
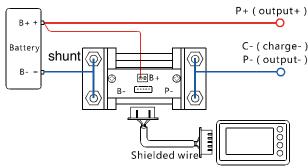
★ **Connection diagram of 50A shunt :**
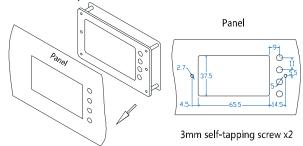

★ **Connection diagram of 350A shunt :**

★ **Connection method of 500A shunt :**

Attention: Please connect as shown strictly. The shunt must be connected to the negative circuit , it is forbidden to connect to the positive circuit. If you want to extend the shielded wire , you must use 4 lines of same specification.

● Install :

★ Open one rectangular orifice and six holes on the panel of equipment according to the dimensions in the drawing. Then install the coulometer from the back of the panel in direction of the arrow. Finally , fix the coulometer with tapping screws from the front of the panel.

3mm self-tapping screw x2

● Use steps :

1. Connect and check the current : Complete the connection as shown and power on , the screen should display the battery voltage , current , capacity percentage and other information. If the screen has no response , please check the connection. Then charge or discharge and **check display current is consistent with actual current whether or not**. If the error is large please check the connection.

2.Capacity reset : On first use ,the percentage and capacity is not the actual value ,you should reset the capacity :discharge the battery totally and hold the "▽" key for 3 seconds to set the capacity zero or charge the battery fully and hold the "△" key for 3 seconds to set the capacity full. The coulometer will be work , and do not need repeat this expect replace the battery.

3. Check and reset the actual capacity : If you find the display capacity don't match the actual capacity during use , please check and reset the actual capacity : discharge the battery totally and hold the "▽" key for 3 seconds to set the capacity zero ,then set the preset capacity as large as possible. Then charge the battery fully , and the display capacity is the actual capacity. Finally set the display capacity as preset capacity (Please refer to use setting).
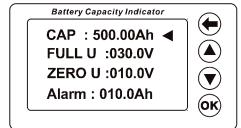
●Other description :

1. When charging or discharging , the coulometer must be at work. Otherwise the capacity will not be accurate.

4. Connect the load , when the discharge current higher than 100mA , backlight on (if backlight blinking , the B- and P- are inversely) , charge-discharge indicator points down indicate that the load is discharging. Besides , display the discharge current and real-time voltage. The time will fluctuate if the current fluctuate greatly.

5. Break the load , and connect the charger. When the charge current higher than 100mA , backlight blinking (if backlight on , the B- and P- are inversely) , charge-discharge indicator points up indicate that the battery is charging. Besides , display the charge current.

6. When the charge or discharge current value is lower than 60mA , the coulometer enter a low power state and backlight off. Click any one of the keys , backlight on 10s.

7. 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 high-power motor) nearly , the backlight will shortly turn on.

8. When the current changes frequently the date acquisition may produce error , and it will affect the accuracy.

● Use setting :

★ Preset capacity and voltage setting :

1. Press the "OK" key for 3s to enter the setting menu;

```
        Battery Capacity Indicator
   ┌─────────────────────────┐   ⬅
   │  CAP  : 500.00Ah ◄      │
   │  FULL U :030.0V         │   ▲
   │  ZERO U :010.0V         │
   │  Alarm : 010.0Ah        │   ▼
   └─────────────────────────┘
                                  OK
```

2. Click the "△" or "▽" key to select the setting items:

CAP—preset capacity : an initial capacity has been set at factory , please set it according to the real capacity ;

FULL U—full voltage : when the voltage is higher than it the percentage will be 100% ;

ZERO U—zero voltage : when the voltage is lower than it the percentage will be 0% , backlight off , if you keep discharge the LCD flicker , the alarm indicator display and buzzer warning ;

Alarm—alarm setting : when the capacity is lower than it the LCD flicker and buzzer warning.

Note : Generally the FULL U and ZERO U do not need to set. The default is 0V , which is the invalid. If you want set , please understand the actual charge and discharge voltage of battery firstly.

3. Select "CAP" and click "OK" key to enter the preset capacity setting; The set bit flicker , click the "OK" key can select other bits , click the "△" or "▽" key to plus and minus the value; after this click the "↵" key to quit preset capacity setting;

4. We can set other items with the same method as preset capacity. When all the items are set and all the values are correct , click the "↵" key to save the set and quit the setting menu;

5. Cut off and Re-power , it will work normally.

★ Set capacity zero or full :

Before the first use or after change the battery , the memory capacity should be set zero or full: In the main interface ,hold the "▽" key for 3 seconds to set the capacity zero , the percentage is 0 ; hold the "△" key for 3 seconds to set the capacity full , the percentage is 100. Attention that the operations can not be restored.

★ Sleep mode wake up operation :

1. When the battery voltage is lower than the turn-off voltage value , it will enter the extreme low power sleep mode. Press any key to see the capacity if needed , and the screen will be woken up and displays for 10 seconds , if the battery voltage does not rise to the normal value ,it will enter the sleep mode again. When the battery voltage rises over normal value or the battery start charging or discharging , it will be wake up.

2. If the battery capacity is large and the turn-off voltage has been set correctly , the coulometer can be connected to the battery pack without an additional switch for a long time.

● Attention and warranty :

★ The tester cannot be exposed in the sun for a long time or in the environment with large amounts of ultraviolet radiation when using or storing ,particular in winter (< -20℃) and summer (>60℃) , otherwise it will shorten the life of LCD.

★ Within one year , any fault caused by non-artificial reason we should maintain it freely.