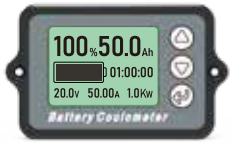
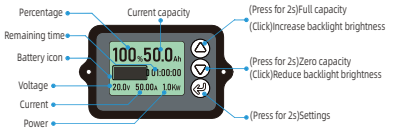


TK15H current battery capacity indicator
Coulometer

USER MANUAL

V3.2

Product indication



Application range

This product is a battery fuel gauge with high precision current acquisition (also known as coulomb meter). It can accurately detect the voltage, current, power, real capacity and remaining usage time of the battery pack in real time etc. You can always know the working status of the battery at any time.

It is suitable for electric vehicles, emergency power supplies, energy storage power supplies, measuring equipment, medical equipment, various instruments and other products that use battery.

Applicable battery specifications

It is suitable for various battery packs such as lithium batteries,Touring car, lithium iron phosphate, lead acid, and nickel hydrogen with a working voltage of 8V to 120V. Note that this product must be used with the sampler.

First use method

1 . Wiring and checking the current

Power on after completing the connection as wiring method shown. The screen should be able to display. If there is no display, the power should be turned off to check whether the connection is correct or not. Then discharge or charge the battery and check whether the displayed current value or power value is consistent with the actual value. If the error is large, please check if the wiring is correct. (Make sure that all current flowing through the battery passes through the sampler.)

2 . Detection and setting of battery actual effective capacity

The actual effective capacity (CAP value) of the battery should be set correctly when the battery is used for the first time or replaced, see Usage Settings .

If the effective capacity value of the battery is known, complete the effective capacity setting according to the use settings , and set it to full when the battery is fully charged, see Capacity homing

If the effective capacity of the battery is unknown, you need to follow the steps below:

A:Enter the capacity setting interface and set the capacity value as large as possible(For example, it is set to 30Ah if the estimated value is 20Ah.);

B:Empty the battery pack and at the same time clear the capacity value to 0%, and then charge the battery pack;

C:After full charge, set the displayed capacity value to the CAP effective capacity value of the electricity meter.

3. Capacity Homing (The battery capacity is cleared or full capacity setting):

A. Press and hold the button ▽ after the battery is discharged (empty), then the capacity value is cleared to 0%;

B. Or Press and hold the button △ after the battery is full charged and then the capacity value is set to 100%.

Wiring method

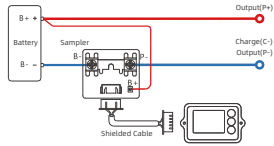
1 . The sampler supplied with this product must be connected in series to the negative circuit of the battery pack. The B- of the sampler is connected to the negative B- of the battery pack. The P- of the sampler is connected to the negative P-/C- of the battery pack.

2 . Take a red wire(20-22AWG) and connect the battery positive to the sampler B+ for screen power supply.

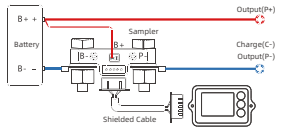
3 . Use a shielded cable to connect the sampler to the meter. After confirming that it is correct, power on.

4 . Wiring principle: Make sure that all current flowing through the battery passes through the sampler.

50A Sampler wiring diagram



100A/350A Sampler wiring diagram



Note: Please wire strictly as shown. The sampler must be connected in series with the negative circuit of the battery. It is strictly forbidden to connect the positive circuit. Shielded wires cannot be extended by yourselves.

Use settings

1.Press and hold the button ⏎ for 2s to enter the setting interface :

2. Effective capacity 、 voltage and alarm setting

CAP Effective capacity: It is the initial capacity at the factory. Please set according to the actual, real and effective capacity of the battery pack, otherwise the display of capacity percentage will be incorrect;

FULL V Full capacity voltage: It will be automatically set to 100% if above this voltage capacity(Full up);

ZERO V Zero-capacity voltage: It will be automatically set to 0% if below this voltage capacity(Zero clearing);

PowOff Shutdown voltage:Backlight and LCD off and no display if below this capacity;

Alarm Low capacity alarm : The capacity value will flash if below this capacity;

Atten Battery attenuation ratio:After the battery Capacity cumulatively once per cycle,The capacity value is automatically changed according to this ratio.

Precautions:

Do not set Full V and Zero V without understanding the voltage characteristics of the battery pack (full voltage and vent voltage). The factory default of Full V and Zero V is 0V, which is invalid.

Instructions for use

1. The coulombmeter must be in working condition when charging or discharging, otherwise the battery capacity cannot be accurately calculated. it's designed for low power consumption. When the backlight is not bright (standby), the power consumption is very low.Don't connect the power supply B+ behind the power switch,(always keep the power on).

2. When connect the load. The backlight turns on (the sampler's B- and P- are reversed if the backlight flashes) indicating that the battery is discharging when the discharge current > the backlight turn-on current. And display the discharge current and the remaining discharge time. If the load current fluctuates greatly, the time will also fluctuate, which is a normal phenomenon.

3. Disconnect the load and connect the charger. When the charging current > the backlight turn-on current, the backlight flashes (if the backlight is always on, it means that the B- and P- of the sampler are connected reversely), indicating that the battery is charging. And display the charging current and the remaining charging time.

4. It will enter low power consumption and the backlight will be turned off when the charge or discharge current < the backlight turn-off current.

5.If the percentage and capacity values deviate after a period of use, it can be reset (see first use method → capacity reset). If the deviation still occurs, the battery capacity may decay, and the battery capacity needs to be corrected again (see first use method → detection and setting of battery effective capacity)

6. This product has a power-off capacity memory function.

7. A certain error may occur in the case where the current changes drastically, which affects the capacity value.

Low power dormancy / shutdown

When the battery current < the turn-on current, the battery enters a low power sleep state, the backlight turns off, and the electric meter does not work but the battery parameters are still displayed; If the shutdown voltage is set and the battery voltage < the shutdown voltage, it will enter the shutdown state.

The following states can wake-up or exit shutdown:

1 .When the battery current > turn-on current or pressing anykey, the electricity meter will wake up automatically and the backlight will light up

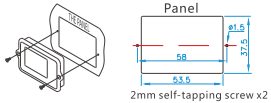
2 .When battery voltage > shutdown voltage、battery current > turn-on current or pressing anykey , it will exit shutdown status.

Adjustment of backlight brightness

3.Click ▽ or △ button to increase or reduce backlight brightnes.

Installation method

Open a rectangular hole and two screw holes on the panel of the device Which will be installed,and place the monitor on the front side of the device panel. Install the monitor from the front, and secure the TK15 to the device panel.from the front side with self-tapping screws. As shown below:



(Note: The panel of the device are not product accessories and not included in the product.)

Technical parameters

Parameter	Min.	Regular	Max.	Unit
Working voltage	8.0	50.0	120.0	v
Working Consumption		6.0	8.0	mA
Static Consumption		0.5	0.8	mA
Power off Consumption		50		μA
Accuracy of Voltage Collecting		±1.0		%
Accuracy of Current Collecting		±1.0		%
Accuracy of Capacity Collecting		±1.0		%
Backlight on current(50A specification)		50		mA
Backlight on current(>50A specification)		100		mA
Capacity detection range	0.1	100.0	9999.0	Ah
50A Sampler Current	0	50.0	75.0	A
100A Sampler Current	0	100.0	150.0	A
350A Sampler Current	0	350.0	500.0	A
Temperature Range in Application Environment	-10	20	60	℃
Weight (50A/100A/350A)		150/220/360		g
Appearance size		66*40*14		mm

Note: This product needs to be used with a sampler. Because of the different internal parameters of the meter, samplers of different specifications and meters are not allowed to be mixed. The sampler is a heat-generating component, try to install it in a ventilated place, and it is strictly forbidden to be covered!

When using the maximum current for a long time, be sure to maintain ventilation and heat dissipation

Precautions and warranty

This product cannot be exposed to sunlight for a long time, and cannot be exposed to extreme conditions below -10 ° C and above 50 ° C for a long time, otherwise it will shorten the life of the LCD screen.

The warranty period of this product is within one year from the date of purchase. It be repaired free of charge when non-human quality problems occur.

This product may be technically improved or updated. If the product you purchased differs from the appearance and technical parameters of the product described in the Product User's Guide, please refer to the actual product or website.