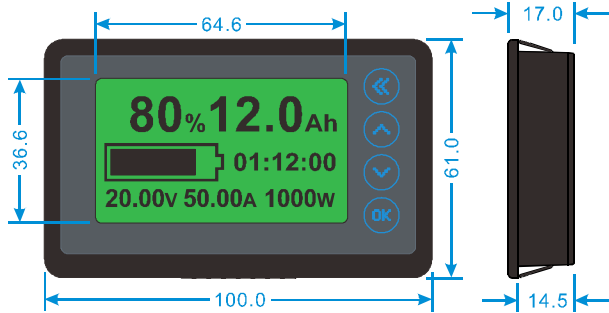


TF03K-A Battery Capacity Tester

—Instruction—

• Sketch :



• Overviews :

★ TF03K-A 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. TF03K-A has memory function, low voltage and capacity alarm function. It is suitable for mobile and portable equipment, e-bike, balance car, cleaning machine, instrument, ups and so on.

• Application :

★ TF03K-A is suitable for lithium battery, lithium iron phosphate battery, lead-acid battery and nickel-metal hydride battery which voltage is from 10V to 120V.

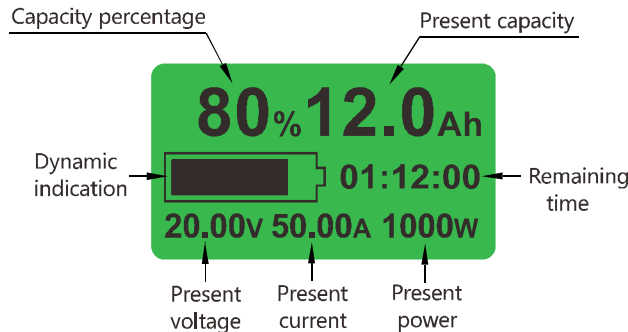
• Basic parameters :

Parameter	Min	Type	Max	Unit
Working Voltage	10.0	50.0	120.0	V
Working dissipation		10.0	15.0	mA
Standby dissipation		1.0	2.0	mA
Voltage accuracy		±1.0		%
Current accuracy		±1.0		%
Capacity accuracy		±1.0		%
Backlight on current(50A)	30		60	mA
Backlight on current(>50A)	80		120	mA
Preset capacity value	0.1		999.0	Ah
Current of 50A sampler	0.0	50.0	75.0	A

Current of 100A sampler	0.0	100.0	150.0	A
Current of 350A sampler	0.0	350.0	500.0	A
Current of 500A sampler	0.0	500.0	750.0	A
Temperature range	0	20	35	°C
Weight	75			g
Size	100×61×17			mm

Attention : The size and function of TF03K-A are the same, but the internal parameters are different, so it must match correct sampler, and cannot exchange.

• Interface description :



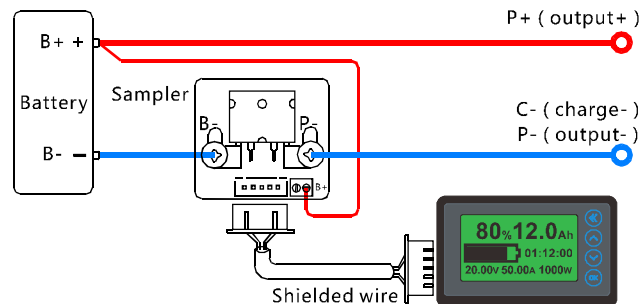
• Connect :

1. First, series connect the sampler to the negative circuit of your battery. B- of sampler connects to B- of battery. P- of sampler connects to P- of output or C- of charge.

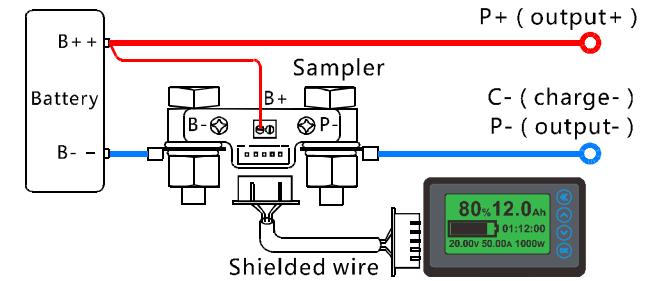
2. Then take a wire of 0.3-0.75 mm². One end of the wire connects to positive of battery, another end connects to B+ of sampler (any one is ok).

3. Finally connect sampler to TF03K-A by the shielded wire. After confirm and power on, TF03K-A will be work normally.

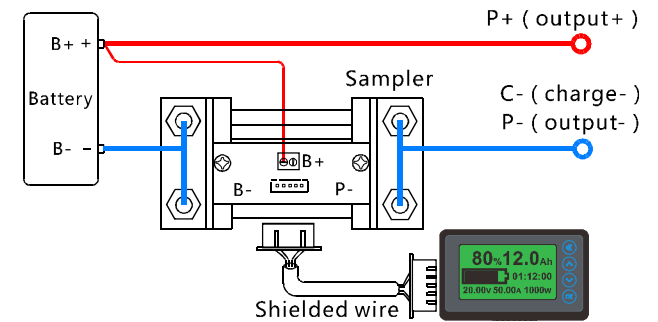
★ Connection diagram of 50A sampler :



★ Connection diagram of 100A/350A sampler :



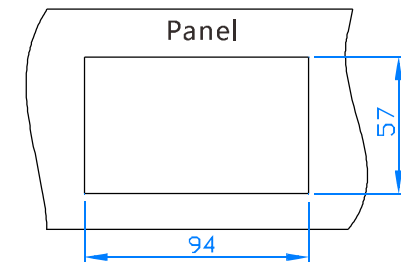
★ Connection method of 500A sampler :



Attention : Please connect as shown strictly. The sampler must be series 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 :

★ TF03K-A is fixed by buckles, so it is easy to install. First, open a rectangular orifice on your equipment panel according to the size. Then put TF03K-A into the rectangular orifice, and make sure the buckles are locked.



• Use steps :

1. **Connect and check the current :** Power on after complete the connection as shown, the screen should display capacity percentage. If the screen has no response, please check the connection. Then charge or discharge the battery, and **check**

whether the display current is equal to the actual current. If the deviation is large please check the connection again.

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 “OK” key for 3s to set the capacity zero or charge the battery fully and hold the “▲” key for 3s to set the capacity full. TF03K-A will be work normally , and it doesn't need to do this again, except 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 “OK” key for 3s 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 value as preset capacity (Please refer to use setting).

●Other description :

1. When charging or discharging , TF03K-A must be at work. Otherwise the capacity will not be accurate.

2. Connect the load , when the discharge current is higher than backlight on current , backlight on (if backlight blinking , means B- and P- of sampler are inversely) indicate battery is discharging. Besides , display the discharge current and remaining time. The time will fluctuate if the current fluctuate greatly.

3. Break the load , and connect the charger. When the charge current is higher than backlight on current , backlight blinking (if backlight on , means B- and P- of sampler are inversely) indicate battery is charging. Besides , display the charge current and remaining time.

4. When the charge or discharge current is less than backlight off current, TF03K-A enter a low power state and backlight off. And TK15 will save the capacity(memory function) .Click any one of the keys , backlight on 10s.

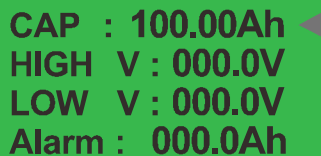
5. Because of high sensitivity ,when TF03K-A in standby mode (battery has no input or output current) , if it is interfered by electromagnetic radiation (turn on or turn off inductive loads , such as high-power motor) nearly , the backlight will shortly turn on.

6. 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 setting menu;



CAP : 100.00Ah
HIGH V : 000.0V
LOW V : 000.0V
Alarm : 000.0Ah

2. Click “▲” 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 ;

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

LOW V—zero voltage : when the voltage is lower than it the percentage will be 0%. If you keep discharge the voltage value flicker and buzzer warning once every 10s ;

Alarm—alarm setting : when the capacity is lower than it the buzzer warning once every 10s.

Attention : Generally the HIGH V and LOW V do not need to set. The default is 0V , means invalid. If you want set , please understand the full charge voltage and all 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;

★ Set capacity zero or full :

On first use or change the battery , the memory capacity should be set zero or full: In the main interface , hold the “▼” key for 3s to set the capacity zero , the percentage will be 0% ; hold the “▲” key for 3s to set the capacity full , the percentage will be 100%.

★ Sleep mode wake up operation :

1. When the battery current is less, TF03K-A enter a extreme low power sleep mode. Press any key can see the display if needed , TF03K-A woken up and display 10s. If the battery current not rise to normal value , TF03K-A will enter sleep mode again. When the battery current rises over normal value or the battery start charging or discharging , TF03K-A will wake up.

2. TF03K-A can connect to the battery pack without an additional switch for a long time.

●Communication function :

TF03K-A has serial communication function , please check the 《TF03 TTL serial communication function》 for details.

●Control function :

TF03K-A has output control function , please check the 《TF03 output control function》 for details.

● Attention and warranty :

★ TF03K-A can't 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°C) and summer (>60°C) , otherwise the LCD will shorten the life span.

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

Our products will keep upgrading , if the product you bought is different with this instruction , please take the material object or website as the standard.