



T-monitor User Manual v1.0

- Please read this manual carefully before using this product.
- Please keep this manual so that you can refer to it at any time in the future.
- Please use this product correctly based on a full understanding of the contents.
LiFeBlue Battery is not responsible for direct, indirect, random or other losses and subsequent losses caused by damage due to incorrect or misuse of this manual or by related products.
- The information in this manual is subject to change without notice.
- Only use input voltages and currents specified in this product manual, so as not to burn out device or cause a fire.
- The T-monitor must be installed and wired by professional technicians. If there is any fault, please contact the company's technicians.

1. Overview

- T-monitor is an indicating instrument, suitable for T-premium battery.
- T-monitor is based on RS485 communication, displays information including voltage, current, remaining capacity, temperature, configuration, etc.
- T-monitor does not need to be connected to the diverter, and can be connected to the battery through a simple wiring harness. Such a simple connection method can not only reduce the cost of the wiring harness, but also save the installation time.

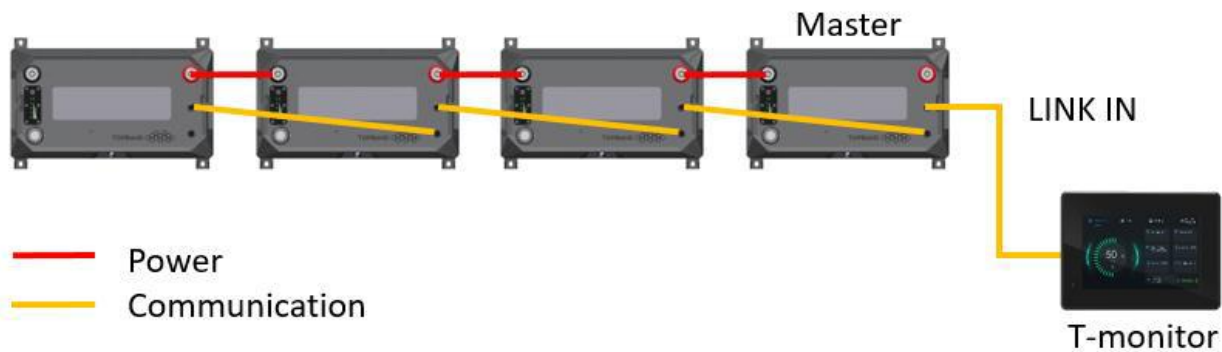
2. Features

- T-monitor, running the Topband human-machine interaction software platform.
- It can be directly connected to the T-premium battery or connected to the T-premium battery through the T-box.
- 5.0-inch, 800*480 pixels resolution, 262K colors true-color display, IPS LCD screen.
- High-reliability capacitive touch panel.
- With built-in speaker, LED lamp and Photosensitive sensor.
- With shell, Anti-UV, with conformal coating. Triggering alarm sound effect when specified alarm/protection/low SOC state occurs.

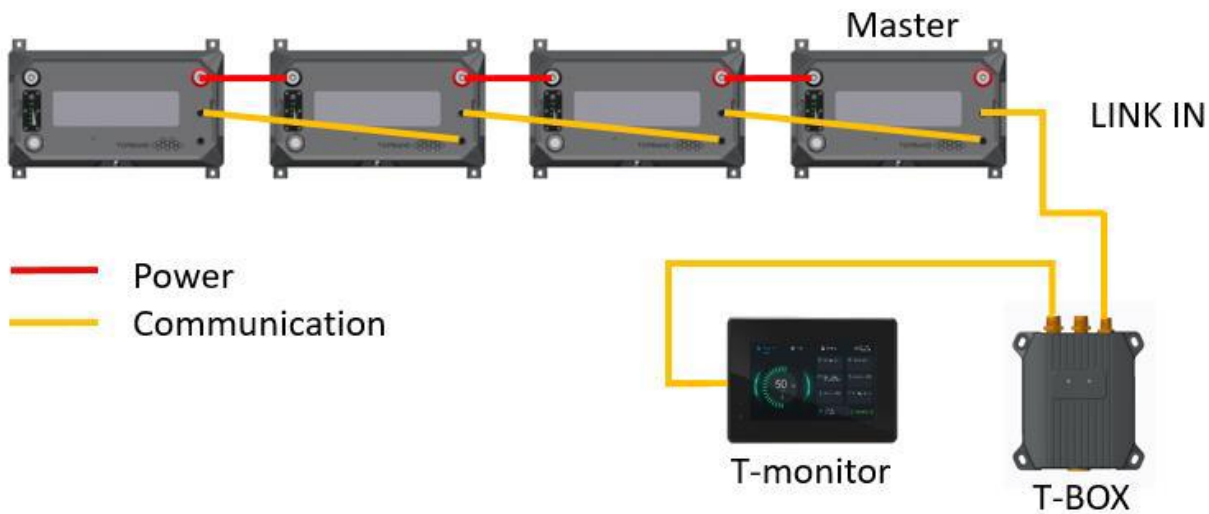
3. Technical Parameters

NO.	Technical Parameters	
1	Rated input voltage	9-60V
2	Rated Power	<5W
3	Operating Current Maximum	170mA (VCC=12V)
4	Operating Current Minimum	55mA (VCC=12V)
5	Resolution	800*480
6	Operating Humidity	10%-90%RH
7	Protective Level	IP65 (Front)
8	Communication	RS485
9	Operating Temperature	-20~70°C
10	Storage Temperature	-30~80°C
11	Net Weight	340g
12	Type	LCD
13	Size	5 Inch

4. Usage steps

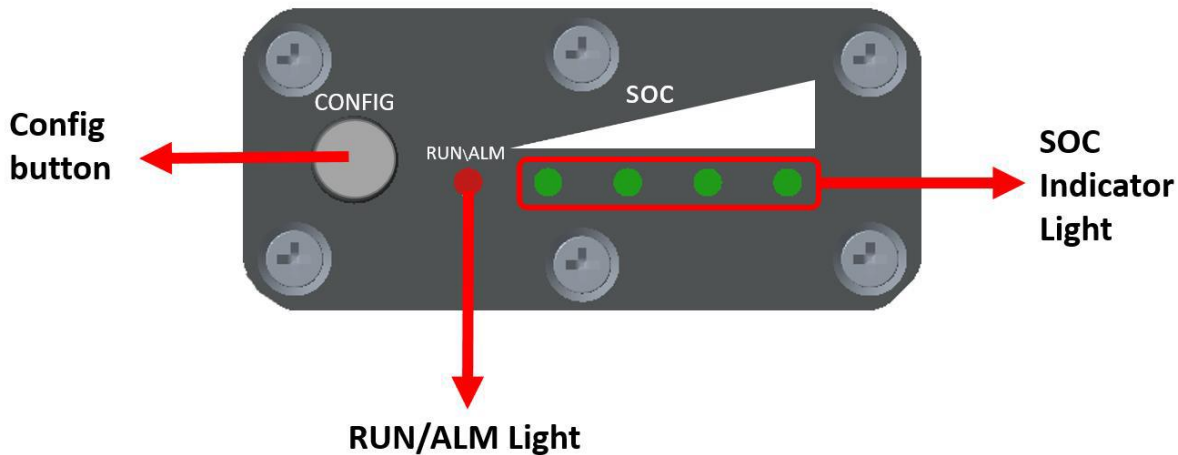


1. Before using T-monitor, be sure to connect the power cable of T-monitor to the ULTIMUS battery (pay attention to distinguishing positive and negative poles), and connect the communication cable to the LINK IN port of the ULTIMUS battery master.
2. Alternatively, connect the communication cable to the T-monitor port of the T-BOX, and before doing so, ensure that the power and communication cable of the T-BOX are correctly connected to the ULTIMUS battery.



3. In order for T-monitor to display information correctly, put ULTIMUS battery into communication networking mode. The steps to enter the networking state are as follow:

- a) Connect the communication line between batteries correctly: connect the LINK OUT of the first battery to the LINK IN of the second battery, then connect the LINK OUT of the second battery to the LINK IN of the third battery, and so on.



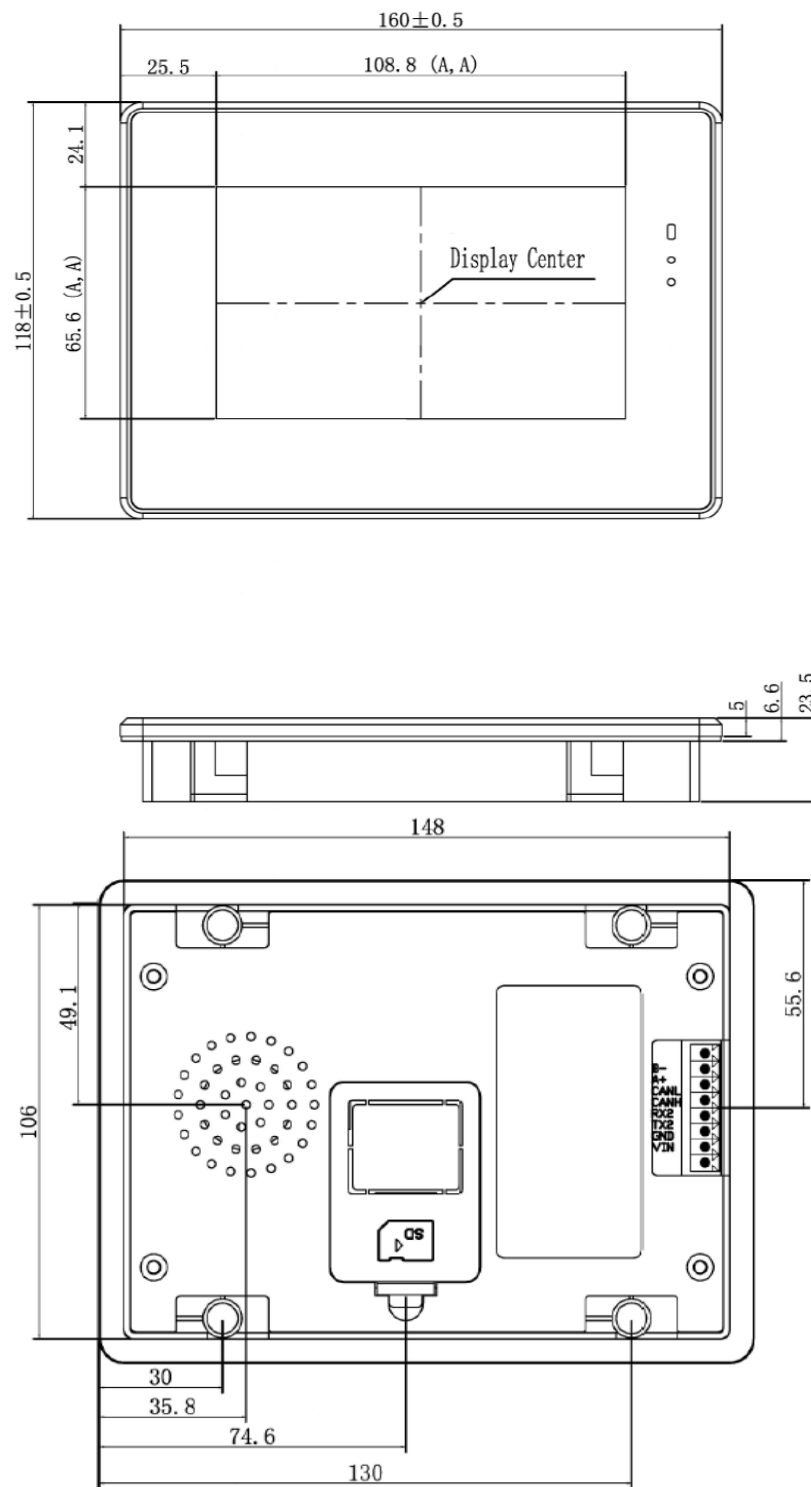
- b) Turn on the power switch of all batteries, press the CONFIG button on the display panel of the first ULTIMUS battery for more than 3 seconds, and put the batteries into the disconnected state. At this time, the SOC indicator light of the battery will flash simultaneously. If the SOC indicator light does not flash simultaneously, it indicates a failure to enter the disconnected state. Please try again.
- c) Press the CONFIG button on the display panel of the first battery for more than 10 seconds, and the battery will enter the communication network state. At this point, the SOC indicator lights of all batteries will flash alternately, and the networking process may take 2-3 minutes. After completing the communication network, the SOC indicator light of the battery will stop flash alternately and display the battery SOC. If the SOC indicator light does not stop flash alternately and display the battery SOC, it indicates a failure to enter the communication network state. Please try again. If the system only has one battery, the step d) can be skipped.
- d) Use the Bluetooth app, select communication networking, and fill in the system information based on the actual situation of the battery, including the system name, voltage platform, and number of series and parallel connections. After completing the settings, select the first battery as the main battery of the system for connection. At this point, the communication network of the system is completed, and the display screen can display system information.

5. Terminal Definition

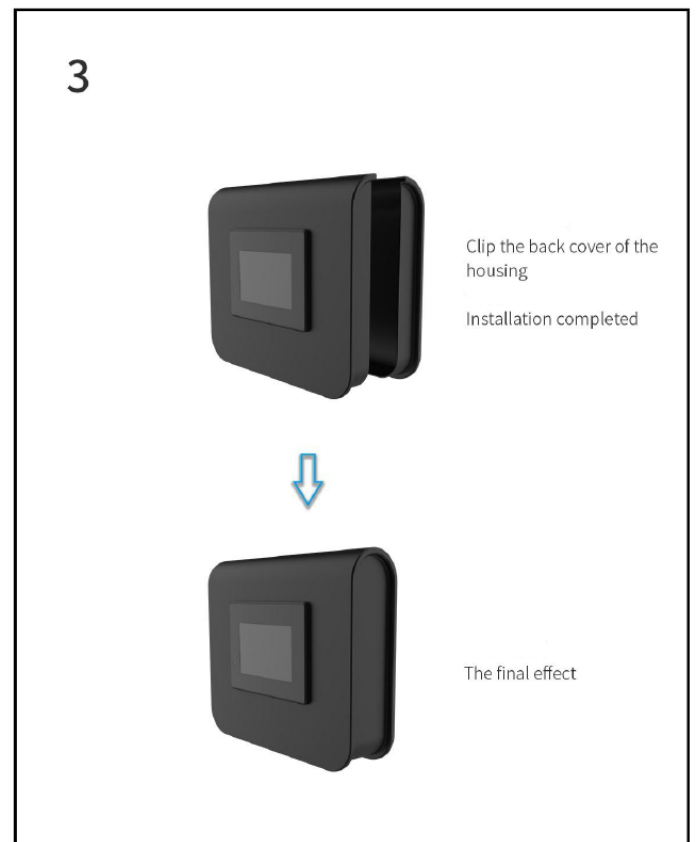
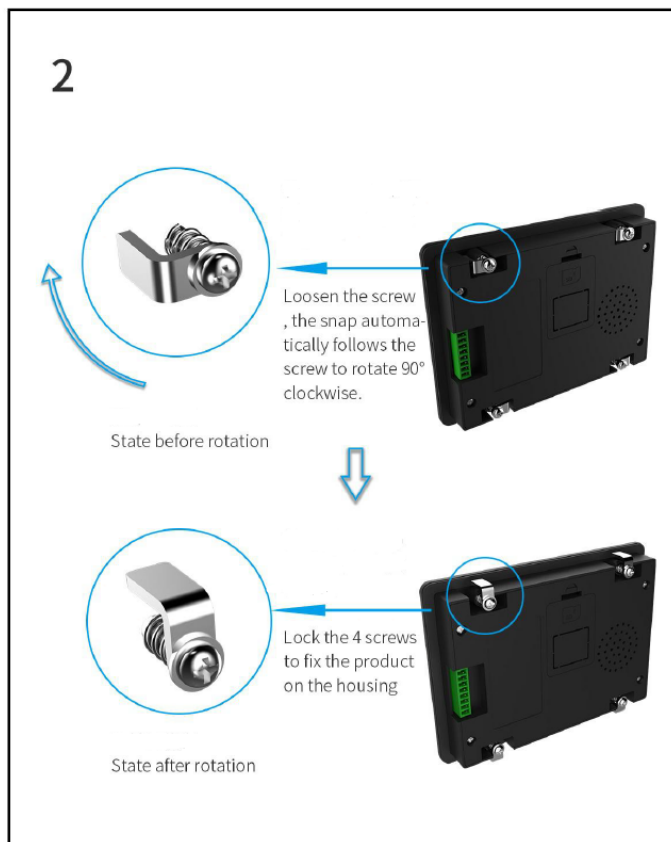
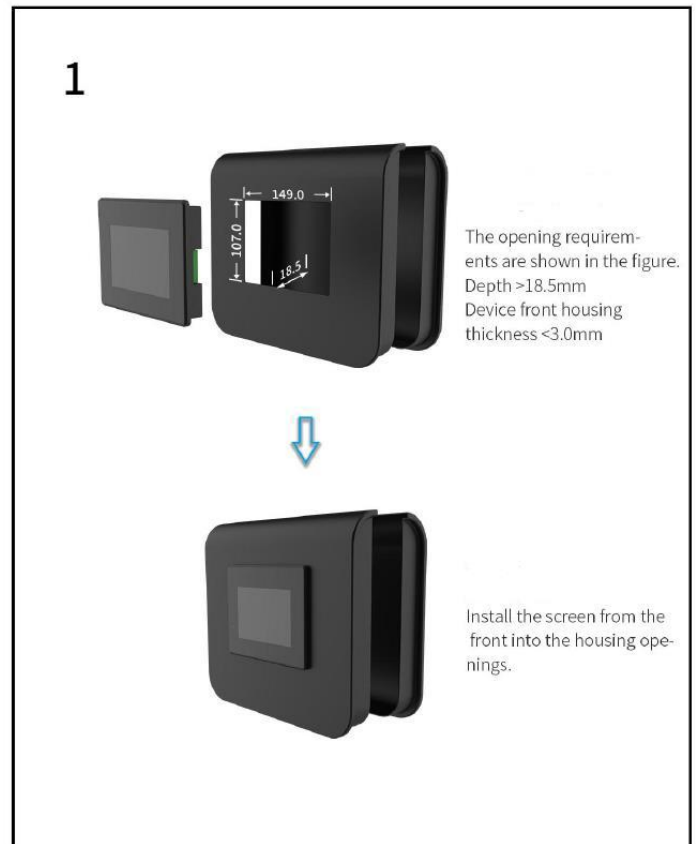
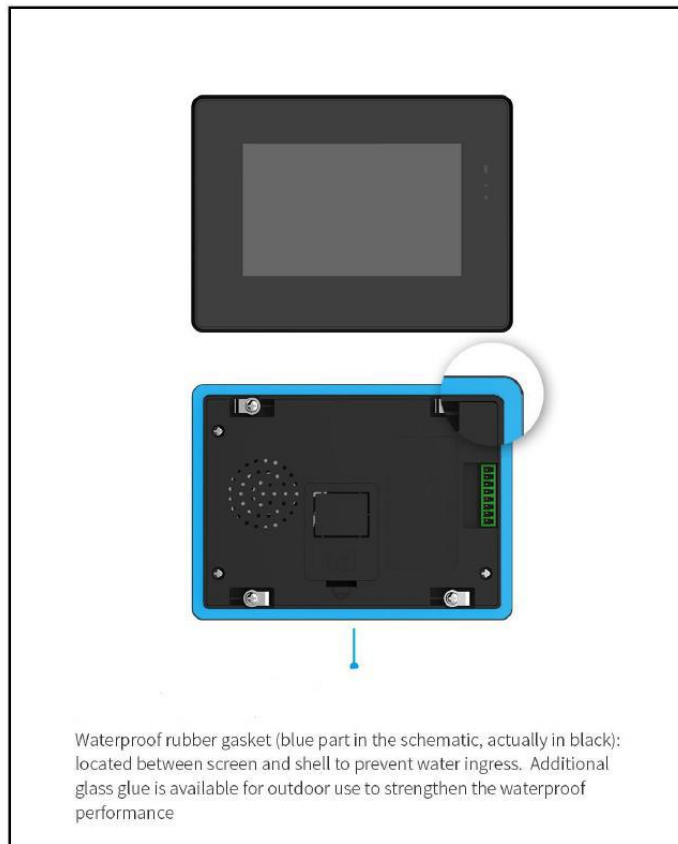
Terminal Number	Definition	Introduction
1	RS485 B	RS485 communication low signal
2	RS485 A	RS485 communication high signal
3	CAN L	CAN communication low signal
4	CAN H	CAN communication high signal
5	RX	RS232 communication receive
6	TX	RS232 communication transmit
7	GND	Negative electrode
8	VIN	Positive electrode (9-60V)

6. Dimensions

Refer to the attached drawing:



7. Installation Schematic



8. Warming and Protection

The warnings and protections information that may appear on the T-monitor are as follows:

WARNING		
Cell under voltage warning	Cell over voltage warning	Battery under voltage warning
Battery over voltage warning	Charge over current warning	Discharge over current warning
Low ambient temperature warning	High ambient temperature warning	Mos low temperature warning
Mos high temperature warning	Cell charge low temperature warning	Cell charge high temperature warning
Cell discharge low temperature warning	Cell discharge high temperature warning	Low capacity warning
Low insulating resistance warning	Cell disconnected warning	Cell failure warning
Cell heating abnormal warning	Cell/system over voltage warning	Cell/system under voltage warning
Discharge high temperature warning	Discharge low temperature warning	Charge high temperature warning
Charge low temperature warning	Discharge over current warning	Charge over current warning
Internal-net communication failure warning	Cells unbalance warning	

PROTECTION		
Cell under voltage protection	Cell over voltage protection	Battery under voltage protection
Battery over voltage protection	Secondary charge over current protection	Secondary discharge over current protection
Short circuit protection	Cell failure protection	Charge over current protection
Discharge over current protection	Low ambient temperature protection	High ambient temperature protection
Mos low temperature protection	Mos high temperature protection	Cell charge low temperature protection
Cell charge high temperature protection	Cell discharge low temperature protection	Cell discharge high temperature protection
Low capacity protection	Low insulating resistance protection	Cell disconnected protection
Mos failure protection	AFE failure protection	Cells voltage difference protection
Cell/system over voltage protection	Cell/system under voltage protection	Discharge high temperature protection
Discharge low temperature protection	Charge high temperature protection	Charge low temperature protection
Discharge over current protection	Charge over current protection	Mos failure protection
System failure protection	Cells unbalance protection	

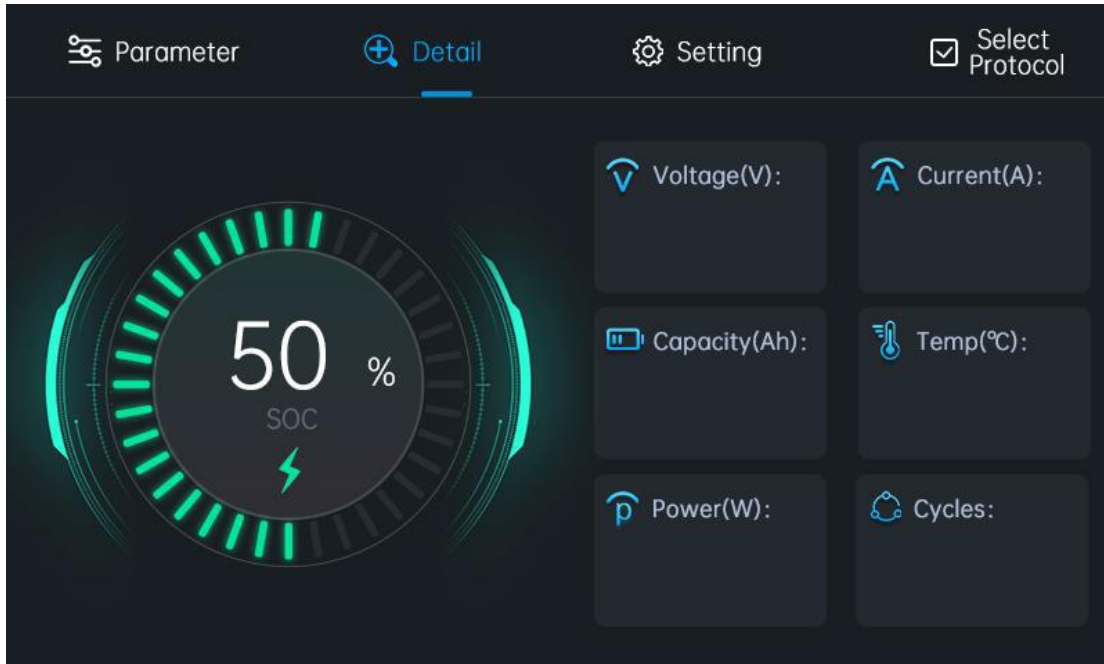
9. Page explanation



Parameter:

- SOC: The SOC of the battery system,, displayed as a percentage. When the SOC is not greater than 10%, the interface will change from green to yellow.
- Voltage (V): The overall voltage of the battery system.
- Current (A): The current being passed through the battery system.
- Remaining Capacity (Ah): The overall remaining capacity of the battery system.
- Max Temp (): The maximum temperature of the battery system.
- Min Temp (): The minimum temperature of the battery system. The temperature unit can be changed between Celsius°C and Fahrenheit °F in the setting interface.
- Configuration: The number of series and parallel connections in battery systems.
- Sleep: Sleep mode button:
 - When this Sleep button is clicked, T-monitor will enter sleep mode, the power consumption of T-monitor will be immediately reduced.
 - The T-monitor will also enter sleep mode without touching for 60 seconds.
 - Touching any position on the screen will awaken T-monitor.
 - When the T-monitor is already in sleep mode, any warning/protection from the battery will awaken the T-monitor. If it is not in mute mode at this time, the T-monitor will make a warning sound when the screen is off. If it is in mute mode, nothing will happen. However, when it is awakened, the warning display triggered when the screen is off can still be seen.

- Warning: For various alarms or protections caused by the battery, clicking on Beep will turn off the sound. After clicking, the newly triggered warning will still make a warning sound. Clicking "Clear" will clear the current warning/protection that have occurred and stop the warning sounds.



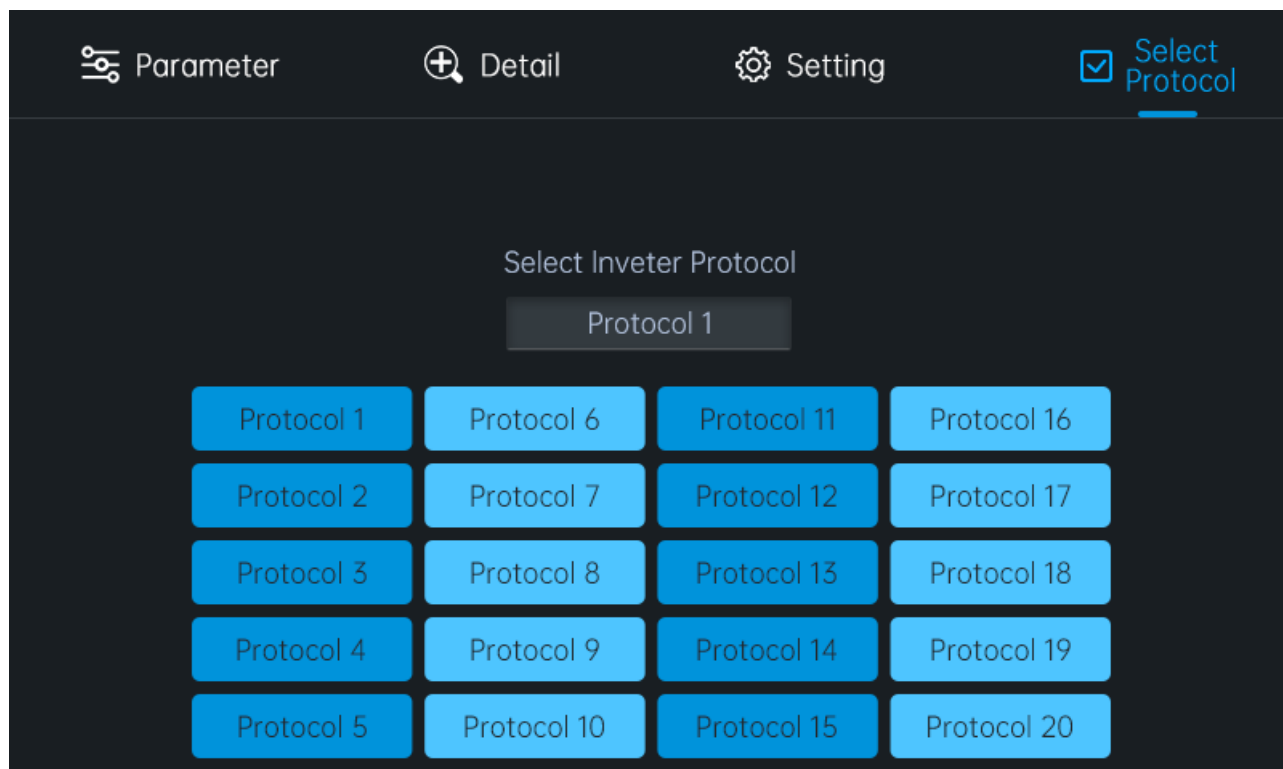
Detail:

- SOC: The SOC of the chosen pack, displayed as a percentage. When the SOC of the chosen pack is not greater than 10%, the interface will change from green to yellow.
- Voltage (V): The voltage of the chosen pack.
- Current (A): The current being passed through the chosen pack.
- Capacity (Ah): The remaining capacity of the chosen pack.
- Temp (): The temperature of the chosen pack. It is possible to select temperature unit, including Celsius°C and Fahrenheit °F.
- Power (W): The power being transferred through the chosen pack.
- Cycles: The number of cycles.

The screenshot shows the 'Setting' tab of the LiFeBlue Battery Ultimus App. At the top, there are four navigation options: 'Parameter' (with a list icon), 'Detail' (with a magnifying glass icon), 'Setting' (with a gear icon and a blue underline), and 'Select Protocol' (with a checkmark icon). Below the navigation bar, the 'Time Setting' section contains input fields for Year, Month, Day, Hour, Minute, and Second, followed by a 'Confirm' button. The 'Language Selection' section has a single input field. The 'Temperature Unit' section also has a single input field.

Setting:

- Time Setting: T-monitor has RTC, including year, month, day, hour, minute, and second. It is possible to modify the time through the setting interface. Click Confirm after completing the time setting.
- Language Selection: T-monitor can select language, including English and Chinese.
- Temperature Unit: T-monitor can select temperature unit, including Celsius °C and Fahrenheit °F.
- Mute mode: It is possible to choose to turn on or turn off the mute mode. When the mute mode is turn on, the T-monitor will not make any sound when any warning occurs.



Select Protocol:

Protocol ID	Inverter
Protocol 1	Victron/SMA/Studer Innotec/Sofar
Protocol 2	Sol-Ark/Solis/Goodwe/Deye/Growatt/ SAJ/LUXPOWER/Megarevo/INVT/Sermatec/ TBB/MUST/SUNGOLDPOWER SG/Sunsynk
Protocol 3	Schneider
Protocol 4	NMEA-2000
Protocol 5	CIBUS
Protocol 6	RV-C
Protocol 11	Voltronic/SUNGOLDPOWER SPH/ RCT/MPP/Alpha outback/Phocos
Others	Pending