

## Battery Monitor User Manual

### Overview

This product is a 12V lead-acid battery monitor, which consists of a wireless host unit (hereinafter referred to as the host) and a wireless display (hereinafter referred to as the display).

It can display the voltage, power, temperature and health of the battery in real time, and automatically test the starting and charging systems of the vehicle. Automatically alarm when the value exceeds the normal range.

### Safety Notes

- When installing the host, the Red terminal must be installed on the Positive pole (+) of the battery, and the Black terminal must be installed on the Negative pole (-) of the battery, do not reverse the connection.

- The display is built-in a lithium battery, please use a 5V charger that meets safety standards for charging. Do not explode and keep away from flammable materials when charging.
- For safety, do not operate the device while driving.

### Limitation of Liability

- To the extent permitted by applicable law, under no circumstances shall the seller be liable for any special, incidental, indirect or consequential damages arising from the use of the contents of this manual and the products described in this manual, nor shall compensate for any loss of profits, data, goodwill or anticipated savings.

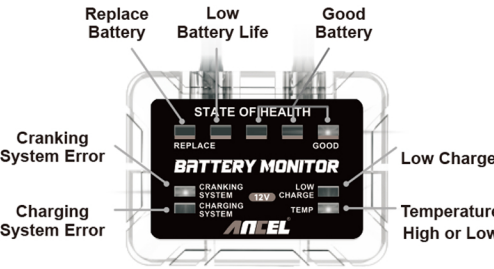
### Main Functions and Features

- Real-time display of battery health, temperature, power and voltage.
- Automatically test the starting and charging systems of the vehicle.
- Built-in alarm function. An alarm tone will be emitted for abnormal temperature, low battery, low voltage, starting system failure and charging system failure.

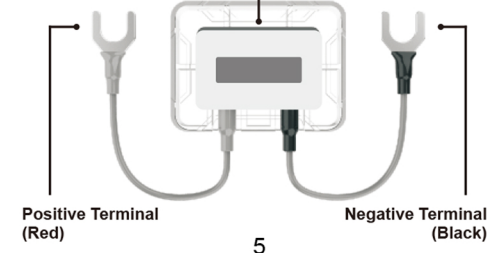
- The display is powered by lithium battery and solar panel, no cables, and no installation required. Type-C fast charging is available when the battery is low.
- Power and charging by solar panel make the device not require frequent charging.
- Adopt stable 433MHz wireless transmission technology.
- Built-in vibration sensor. The device will automatically turn on when the vehicle is slightly moved, and will automatically turn off after a long period of stationary.
- Built-in fuse and reverse connection protection.
- Professional algorithm, the longer connection time, the more accurate result.

### Appearance

#### •Host (Front Side)



#### (Back Side)



#### •Display



### Specifications

#### •Host

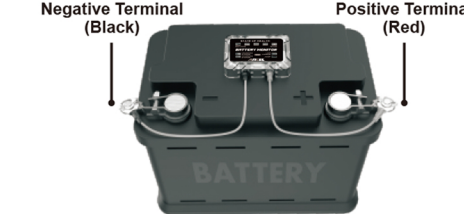
Applicable Battery	All 12V Lead-acid Batteries
Input Voltage	6V~25V
Working Temperature	-40°C~80°C (-40°F~176°F)
Power Consumption	2.3mA (Average)
Radio Frequency	433MHz
Display	9 LED Indicators
Protection	Short-circuit and Overcurrent Protection

#### •Display

Lithium Battery Capacity	750mAh
Charging Input	Solar Panel, Type-C Port (5V)
Display	Monochrome LCD with Backlight
Protection	Short-circuit and Overcurrent Protection
Radio Frequency	433MHz
Working Temperature	-20°C~70°C (-4°F~158°F)
Storage Temperature	-30°C~80°C (-22°F~176°F)

### Installation Steps

#### •Host



- Firmly attach the Negative (Black) connector to the Negative battery terminal.
- Firmly attach the Positive (Red) connector to the Positive battery terminal.
- Mount the device to the battery surface with the supplied double-sided tape. Please wipe the battery surface clean before fixing.

#### •Display

No installation required, just place it in front of the windshield.

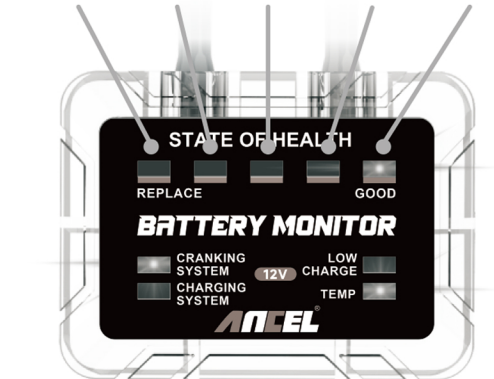
### Instructions

#### •Host

- Battery State of Health

Low High

LED 1 LED 2 LED 3 LED 4 LED 5



- Indicator Status Description

※ LED1 is on

Indicating that the battery has reached the disposal standard, please replace the battery.

※ LED2 is on

Indicating poor battery life.

※ LED3~5 is on

Indicating that the battery is in good health, LED5 is the best, LED4 and LED3 are next.

Note: Only one LED light will be on at any time.

- The battery health status indicator will not light up when the device is just installed for the first time, until the car engine starts once or the device works over one hour. In this situation, the indicator represents an estimated test result. It will be more accurate when the device works for over 48 hours.

- The device adopts intelligent learning algorithm, the longer working time, the more accurate result.
- If disconnect and reconnect the device, the data in the device will be cleared, which is equivalent to the first installation.

#### •Display

- For the first time, short press the key "⏻" to power on, then a fixed interface display will appear after power on.

Note: If there is no response after pressing the key "⏻", the built-in battery may be low, please use a 5V charger to charge it.

- After power on, the display will automatically search for the host and establish connection, then the successful connection icon "📶" is always on, and the screen starts to display real-time data.

- ※ SoH shows 1 cell: Indicating that the battery has reached the disposal standard, please replace the battery.
  - ※ SoH shows 2 cells: Indicating poor battery life.
  - ※ SoH shows 3~5 cells: Indicating good battery life. 5 cells are the best, 4 cells and 3 cells are the next.
- Press the key "⚙️" to switch the backlight mode.
    - ※ Auto mode (default): Automatically turn the backlight on or off according to the brightness of the ambient light.
    - ※ Power-saving mode: Turn off the backlight.

- Press the key "⏻" to force the power on and off. After the first power on, no need to manually force the power off. The display will automatically power on and off according to the vibration of the vehicle.

- Press the key "◀️" to switch the temperature unit to Celsius or Fahrenheit.

### Fault Alarm Description

- The LED1 on the host is on or display shows 1 cell SoH: Indicating that the battery has reached the disposal standard and should be replaced.

Note: Due to different vehicle conditions, temperature etc., the battery may still be able to start the engine, but it is recommended to replace it.
- The cranking system warning light on the host is on or the icon "🔧" on the display is on: Indicating low cranking voltage. It might be a cranking system failure or battery failure.

- The charging system warning light on the host is on or the icon "🔌 CHARGING" on the display is on: Indicating abnormal charging system. There may be cases such as high voltage, low voltage, or no charging in the charging system etc.

- The low charge warning light on the host is on or the icon "⚡ CHARGE" on the display is on: Indicating low battery level or the battery voltage is lower than 12V. Please charge .

- The temperature warning light on the host is on or the temperature value on the display is higher than 60°C(140°F): Indicating high battery temperature. High temperature environment will accelerate battery life degradation.

- The icon "⬆️" on the display is on: Indicating that the value is high.

- The icon "⬇️" on the display is on: Indicating that the value is low.

### Precautions

- Be sure to attach the host to the battery case, otherwise accurate battery temperature will not be obtained.
- Do not block the front of the solar panel on the display. The stronger the sunlight, the higher the charging efficiency of the solar panel. The solar panel is not sensitive to lamplight.
- It is normal for solar panels to convert electricity might be very weakly in different light environments.