User Manual

ANCEL BM300 Bluetooth Battery Monitor

Battery Monitor



APP

ANCEL BM300 is a 12V bluetooth battery monitor, which supports voltage test, cranking test, charging test and trip recording via bluetooth connection by App “ANCEL Battery Monitor”.

1.0 Product Parameters

Average Current	1mA	Short-circuit Protection	Built in
Input Voltage	6~20V	Reverse Connection Protection	Built in
Operating Temperature	-40°F~ 194°F	Bluetooth	4.0
Physical Dimensions	2.95"*1.97"*0.83"	Bluetooth Name	ANCEL Battery Monitor
Voltage Accuracy (9-16V)	±0.03V	App Keyword	BM300

2.0 Product Safety Performance

1.Made of fireproof material, more resistant to high temperatures.

2.Built in electrical overload circuit breaker, automatically shutting off the circuit if the current is too high.

3.Reverse-Polarity Protection, preventing damage to power supplies and electronic circuits in the event of a reverse voltage applied at the input or output terminals.

3.0 How to Install the Product



（Fig 1）

Install the Battery Monitor to the Vehicle Battery

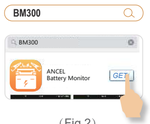
1. Connect the terminals to your batteries with the red terminal going to the positive pole and the black terminal to the negative pole.

2. Keep the BM300 body settled in a convenient location where the Bluetooth transmission signal is not blocked.

4.0 App Installation



（Fig 3）



（Fig 2）

1.Search “BM300” on App Store or Google Play to download App.（Fig 2）

2.Or scan the QR code printed on the package or product.（Fig 3）

4.1 App Using Scene



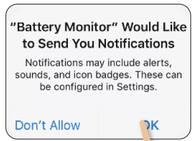
（Fig 4）

The bluetooth transmission range can be maximum 30 feet (10m) with no physical obstacles in the scope.

4.2 App Operation

4.2-1. Turn on your Bluetooth after launching the App.

4.2-2. Allow App access to notifications, and you will receive notifications of the car battery/cranking system/charging system data and problem detection in time.



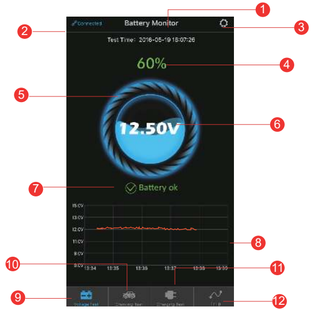
（Fig 5）



（Fig 6）

4.2-3. Allow App access to your location, once your phone enters the range of the bluetooth, you will be notified even the App is not running.

4.2-4. App Interface Introduction-- Main Interface



（Fig 7）

1. The device name or ID. User can set up the nickname on the System Setup.

2. Bluetooth connection status. Automatically connect to your mobile device by default.

3. System Setup.

4. Status of charge display (SoC).

5. Dynamically rotate when charging.

6. Real-time battery voltage.

7. Status of health display: 1. Battery OK(Green) 2. Charging(Green) 3. Low Power (Red).

8. Real-time voltage graph, tap on it to view the daily voltage graph .

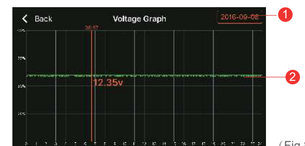
9. Voltage test.

10. Cranking test.

11. Charging test.

12. Trip recording.

4.2-5. App Interface Introduction—Voltage History Graph



（Fig 8）

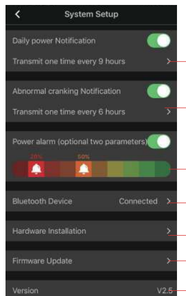


（Fig 9）

1. Date selection: Tap on the date in the upper right to enter a calender, where date in red means abnormal voltage on the day(s).

2. Historical voltage graph: A slider appears when you tap on the graph, displaying the test time on the top of it and the battery voltage.

4.2-6. App Interface Introduction—System Setup



（Fig 10）

1. Daily Power Notification: green means on, gray means off. The frequency of notification can be set.

2. Abnormal cranking Notification: The frequency of notification can be set.

3. Power alarm.
Slide the two bell icons to set the parameters. User will receive app notification about status of charge when battery power drops to the set point.

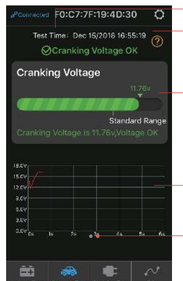
4. Bluetooth Device Setup: tap on it to enter Bluetooth device system setup. User can search for nearby devices or view previously connected devices. Bluetooth device name can be customized.

5. Hardware installation: user can view the installation introductions.

6. Firmware Upgrade: user can view the software version or upgrade to the new firmware when new version is available.

7. Version: display the current app version number.

4.2-7. App Interface In troduction—Cranking Test



（Fig 11）

1. Engine start time.
2. Cranking test: when the engine starts, the device will test the cranking system automatically and store the test result. Usually, it's normal if the cranking voltage is higher than 9.6V, while abnormal if the cranking voltage is less than 9.6V. If the voltage is too low, it might result from aging of battery, low power or starter fault, etc.
3. Display the cranking voltage values, green means normal, red means abnormal.
4. The cranking voltage graph.
5. Can display the recent two test results, the orange dot means the selected page.

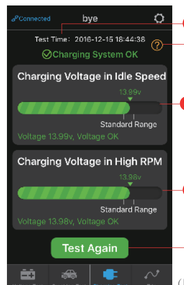
4.2-8. App Interface Introduction-- Charging Test



（Fig 12）



（Fig 13）



（Fig 14）

1. Click "Start Testing", it will automatically test idle condition voltage, then jump to Second Step.

2. High RPM Voltage Test: increase RPM as below and hold for 3-5 seconds until the test is completed.
4cyl - 2500/min
6cyl - 2000/min
8cyl - 1600/min

3. Interpretation of charging voltage test

3-1. Charging Voltage: normal
Shows the alternator output is normal, no problem is detected.

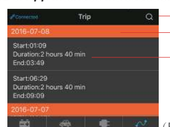
3-2. Charging Voltage: low
Problem is detected. Please check if engine transmission belt slips/disconnects or not. Check whether the cable connection between alternator and battery is normal or not. If transmission belt and cable connection are good, please refer to the car manufacturer's recommendations to exclude the alternator failure.

3-3. Charging Voltage: high
Problem is detected. Since most of automotive engines adapt built-in regulator, you need to replace alternator assembly(Old vehicle use external regulator, please replace regulator directly). Common voltage limits for automotive regulator is 14.7±0.5V. A high charging voltage can overcharge the battery and shorten its life and cause it to malfunction.

3-4. No Voltage Output: no engine voltage output is detected
Check that the alternator cable and alternator belt are working properly.

4. Charging test finished time.
5. Voltage under idle test, green means OK, red means abnormal.
6. High RPM voltage test, green means OK, red means abnormal.
7. Click button to re-test.

4.2-9. App Interface Introduction-- Trip Record

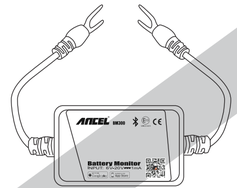


（Fig 15）

1. Click search button to view driving records via selecting date.
2. Date separator bar, specific to a certain day.
3. Start, running and end time of each driving.

5.0 ⚠ Tips

1. The product should not exceed the specified voltage range (6-20V). Excessive input voltage may damage the device.
2. App requires smart phones with Android 4.3 and higher, iPhone 4S and higher.
3. The mobile device will receive a notification when it enters the Bluetooth range.
4. If you select "not allowed to access location" for the first time, you will not receive a notification reminder. Please turn on the location in phone settings by selecting "always allow location access".
5. If the daily test alert function is turned off, it will not be notified even if your mobile phone is close to the tester. Please set to allow notification in your app and phone's settings.
6. If the exception test alert function is turned off, you will not be notified even if the mobile phone is close to the device. Please set to allow notification in your app and phone's settings.
7. Open the app and wait for the data synchronization before updating the firmware, otherwise the update will clear all data in the tester.
8. All historical data will be stored on the phone, and app update will not lose historical data. However, if the app is uninstalled, the mobile terminal data will be cleared.
9. The device will automatically monitor the vehicle's battery, cranking and charging systems, which can store up to 31 days of data. Please use the app at least once every 31 days. And make sure the device history data will has been synced to the phone before remove it from the battery otherwise all data will be cleared.
10. If your mobile phone and the tester cannot be connected via bluetooth, make sure that your mobile bluetooth is turned on and close to the device without hindrance.



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