

MA98415 INSTRUCTION



Monitor multiple batteries, as well as the cranking system and charging system of a vehicle. The MA98415 can be used to monitor up to 4 stand-alone 12V batteries, or the combined pack voltage, up to a 48V system. After being connected to the battery, connect the monitor to a mobile device (phone or tablet) via a mobile App. The App will then alert the user to the voltage of the batteries and fault conditions when the mobile device is within Bluetooth 4.0 range (about 10 meters). It will also record the duration of any engine run time to be able to monitor trip duration.

1.0 Product Specifications

Average Current	1.5mA
Input Voltage	6-20V
Operating Temperature	-40C° to 90C°
Product Dimensions	5.5 x 3.7 x 1.6cm
Voltage Accuracy	+/-0.03V
Short-circuit Protection	Yes
Reverse Polarity Protection	Yes
Bluetooth Version	4.0
Bluetooth Name	Matson Monitor
App Name	Matson Monitor

2.0 Product Safety Specifications

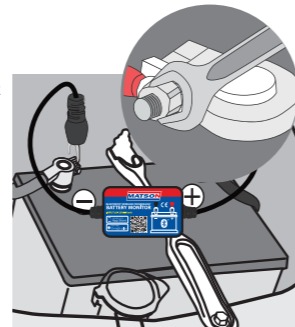
The product case and cable materials are designed to withstand high temp environments, up to 90 degrees Celsius, so mounting to a battery in the engine bay is okay in most instances. Try to keep the unit as cool as possible.

It also features built in short circuit protection and reverse polarity protection to protect both the vehicle and the unit in case of reverse polarity connection.

3.0 Installation

Note: Be very careful not to fully disconnect car battery leads from battery during installation, you may lose vehicle memory settings!

- 1) Firmly attach the Red connector to the Positive (+) battery terminal and the Black connector to the Negative (-) battery terminal.



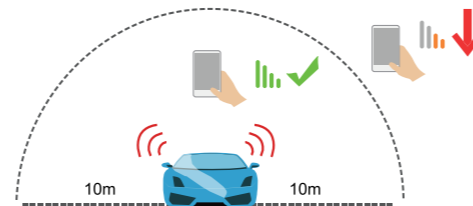
- 2) Using the double sided Velcro provided, attach the product to the vehicle battery. Clean the surface that the unit will be attached to first. It is recommended to attach the unit to the top of the battery to minimize interference with the communication signal.

- 3) When connecting to a battery pack (24/36/48V) a monitor must be attached to each individual battery.

4.0 App Installation



- 1) Scan the QR code on the product, which will direct you either to the App Store or Google Play, then download and install the App. OR
- 2) Search on the App store or Google Play for the app named Matson Monitor. Download and install the app.

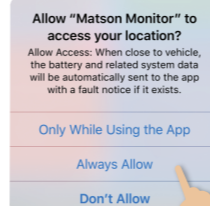


Note: Without any interference, your mobile device will be able to communicate with the battery monitor out to a distance of 10 metres. If there are solid objects in the way, this distance will be reduced.

4.1 App Setup

Note: Without any interference, your mobile device will be able to communicate with the battery monitors out to a distance of 10 metres. If there are solid objects in the way, this distance will be reduced.

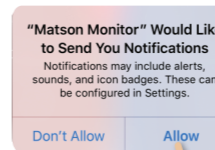
- 1) Click or press the app to run it. Do not try to find and connect to the device by the phones list of available Bluetooth devices. This will cause the app to ask for a PIN, which does not exist. If this happens, delete the app, install it again, then open the app when near the device. The app will connect to the device automatically upon opening.



- 2) You will need to allow the app to access your location even when not in use. If this is not enabled, the device will not be able to send notifications to your mobile device.

Your information is not identifiable, collected or stored, or shared with any third party.

- 3) You will also need to allow your mobile device to receive notifications. If this is not enabled, your device will not be able to receive information and notifications from the battery monitor.



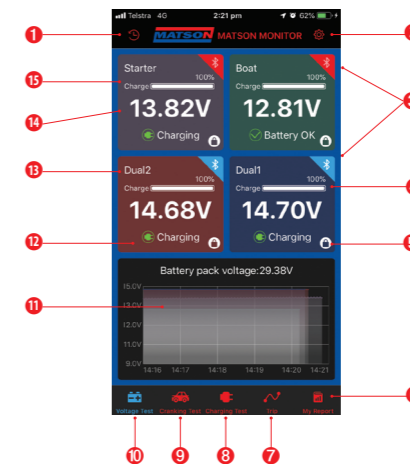
- 4) To change the name of a device to something easy to recognise, touch the voltage display tile of the unit to change, then touch the name at the top of the menu that appears. You will then be able to delete the old name, and enter a new one.

- 5) **Connect and disconnect** available devices by touching the voltage display tile and then selecting Connect Device or Disconnect Device as required.

- 6) **Binding** locks a monitor to the app display, even when it is out of range, disconnected, and other monitors are in range and available. When binding is removed, the app will allow devices in range to be displayed as they become available. To bind or remove binding, touch the Voltage Display Tile, then select Bind or Remove Binding as required.

- 7) **Pack Voltages** – To see the voltage of a battery pack, attach a monitor to each battery, then connect those devices to the app. Disconnect any other available devices from the app to see the combined pack voltage, and the individual voltages of each battery in the pack.

4.2 App Interface



- 1) Voltage history icon, touch this to see historical voltage graphs.
- 2) System Setup icon, press this to access the settings menu.
- 3) Bluetooth connection indication, blue is connected, red is disconnected. Touch this to connect or disconnect devices.
- 4) Battery charge level indicator, shows the charge level of that battery.
- 5) Binding Indicator, shows whether device is bound to this app or not.
- 6) Report Icon, press this to see the reporting screen.

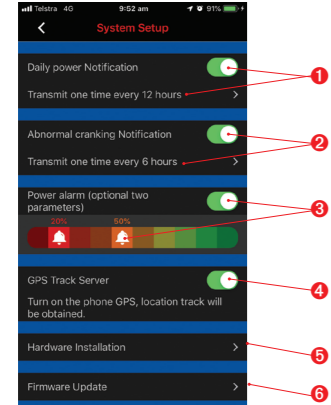
- 7) Trip Detail Icon, press this for trip detail info.
- 8) Charging Test Icon, press this to perform charging system testing.
- 9) Cranking Test Icon, Press this to perform cranking system testing.
- 10) Voltage Info Screen, default screen with live battery info.
- 11) Recent Activity Display, graphs voltage activity over the last 5 minutes, updates live.
- 12) Live Battery Status, describes current battery state.
- 13) Custom device name, re-name each device for easy recognition.
- 14) Live battery voltage.
- 15) Voltage Display Tile.

4.3 App Interface – Voltage History Graph



- 1) Date Select: Press this to display a calendar. Press a particular date to see the voltage recorded over that 24-hour period. Dates displayed in Red have voltage abnormalities (below 12.4V) or problems to report.
- 2) After selecting a date, a graph will be displayed. Choose which monitors to be displayed by touching their names to show or hide them. Touching the graph screen will display the exact voltage and time at that point. Slide your finger across the graph to find info about precise points.

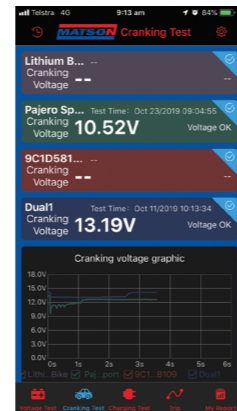
4.4 App Interface – System Setup



- 1 Change this slider on and off to receive a daily notification of battery condition (when in range). Default is 1 notification each 12 hours (when in range).
- 2 Change this slider on and off to receive Abnormal Cranking Voltage notifications (when in range). Typically this will indicate when a battery voltage drops very low when starting a vehicle, and is a good indicator of a failing battery.
- 3 Change this slider to receive low voltage warnings (when in range). Move the bells along the slide chart to set the two levels you would like to be warned about.
- 4 GPS Track Server – Turn this off if you do not want to keep a record of your trip information and location (This data is not stored by Tridon or shared with any third party).
- 5 Hardware Installation – Instructions for how to install the battery monitor to the battery.
- 6 Firmware Update – Occasionally updates and improvements will be made to the firmware of the monitor, an alert will come through to notify any improvements, stand near the device when updating.

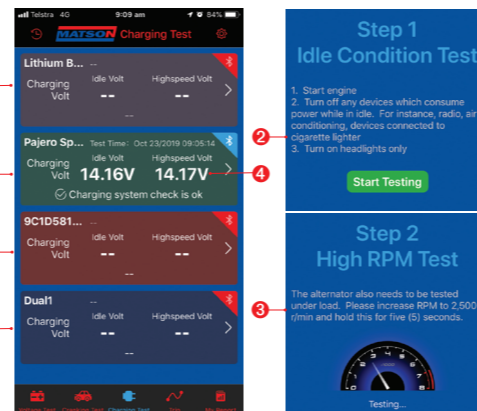
4.5 App Interface – Cranking Test

- 1 Results for the last test of each battery. This test is performed automatically when the device senses a vehicle starting load.
- 2 Test Result: Displays Cranking Voltage Result. As the engine starts, the device measures the voltage level during the starting process. Usually, if the voltage is 9.6V or greater, the system is ok. If the voltage is below 9.6V it can be an indication of an abnormality such as an ageing or damaged battery, or a starter fault etc. If the result is not OK, seek further advice from an auto electrician or mechanic.
- 3 Cranking Voltage Graph: This graph displays cranking voltage over the time taken to start the engine.



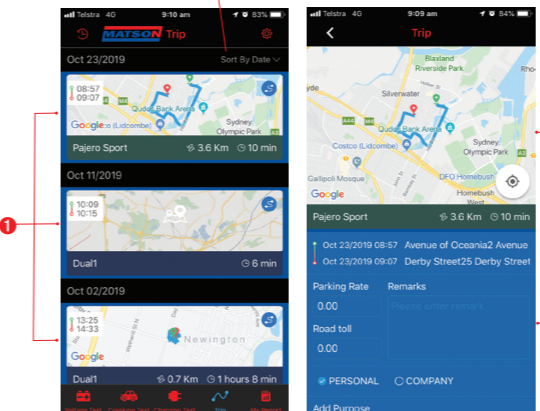
4.6 App Interface – Charging Test

- Select the Charging Test screen.
MAKE SURE THE VEHICLE IS IN NEUTRAL GEAR – DO NOT PLACE IN FORWARD OR REVERSE!!!!
 With the engine running, follow on screen instructions:
- 1 Select the correct vehicle/battery from the list by touching it.
 - 2 Start Test: Press the start test button.
 - 3 High RPM Voltage Test: Increase RPM to 2500/min and hold steady for 5 seconds.
 - 4 Results displayed on the app screen.



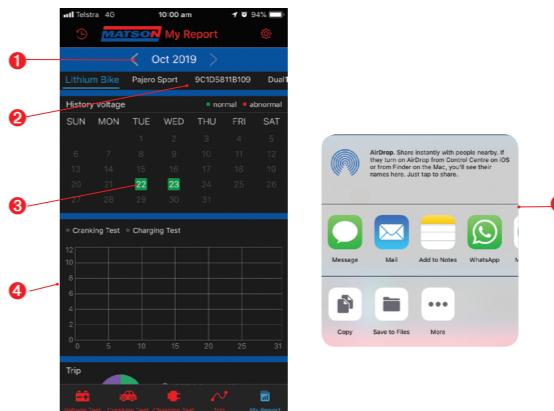
4.7 App Interface – Trip Record

- 1 Select the Trip screen, then choose between any of the available recorded trips by tapping on the map.
- 2 Trips can be sorted by date, or by device name.
- 3 Detailed travel track record, powered by Google Maps.
- 4 Detailed info about trip distance and duration, as well as estimated start and finish addresses. Options to enter details about parking costs, tolls, notes, and whether or not the trip was for personal or business use.



4.8 App Interface – Monthly Activity Report

- 1 Select month.
- 2 Select vehicle.
- 3 Calendar dates for that month will be highlighted Green or Red to indicate normal or fault conditions.
- 4 Cranking and charging test results graphed over the month to show voltage trends.
- 5 Reports can be shared via your choice of application on your mobile device.



5.0 Operation Tips

- 1) Product should not be exposed to higher than 20V or it will be damaged.
- 2) App requires smart devices. Earliest compatible versions are Android 4.3 and iPhone 4S.
- 3) Mobile device will only receive notifications within Bluetooth range (10M).
- 4) During initial setup, if the user does not allow the mobile device to access location data, the mobile device will not receive notifications. This can be fixed by entering the mobile device settings menu and allowing access to location data for the app.
- 5) If the "daily test alert" or "daily exception alert" functions are not enabled in the app, the mobile device will not receive these notifications. They can be enabled in the app at any time.
- 6) Firmware updates will clear all data in the device if not allowed to sync to the app first. To avoid this, make sure the mobile device is in range of the battery monitor and allow the sync to complete before starting the firmware update.
- 7) If the app is upgraded or updated, all historic data will be retained. If the app is deleted from the mobile device, all historic data will be lost.
- 8) The battery monitor device can monitor and store up to 31 days of data without syncing to the mobile device. If the Mobile device does not come within range of the battery monitor for more than 31 days, the old data will be discarded to make space for new data.
- 9) On setup, when the mobile device is searching for the Bluetooth battery monitor, make sure the mobile device has Bluetooth switched on, and is close to the battery monitor (within 10m) without any obstructions.