



# SOLAR APP USER MANUAL



The purpose of this app is to help you operate and monitor KickAss solar charge controllers. The app is dependent on Bluetooth, and to use it successfully you must have a smartphone with the following:

- Bluetooth function working and switched on.
- GPS function working and switched on.
- Android firmware version 5.0 or above, or IOS firmware version 9.0 or above.

If any of the above are missing, the app may fail. Please also be aware that you may not be able to use this app on certain models of smartphones (like some older versions of Samsung phones).

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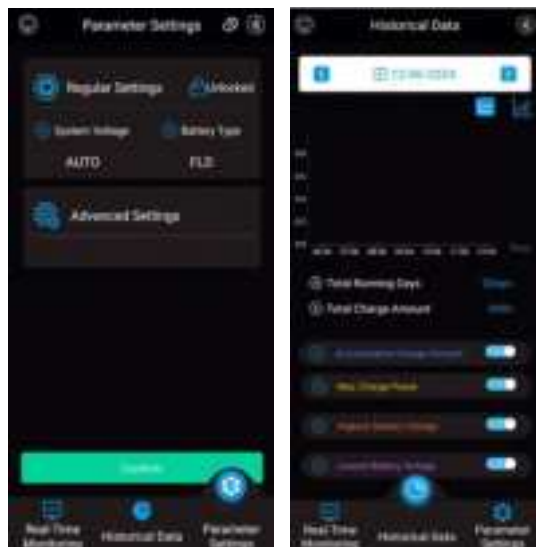
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- GPS function working and switched on.
- Android firmware version 5.0 or above, or IOS firmware version 9.0 or above.
- If any of the above are missing, the app may fail. Please also be aware that you may not be able to use this app on certain models of smartphones (like some older versions of Samsung phones).

Open the app by tapping the KA SOLAR  icon on your smartphone. Once it loads, you will see the app's main screen "Real-Time Monitoring", as shown below.

You can switch between the "Historical data" screen and "Parameter Settings" screen by tapping the icons on the app's main menu:



Note that there won't be any active information on any of the screens until you connect with the charge controllers via Bluetooth.

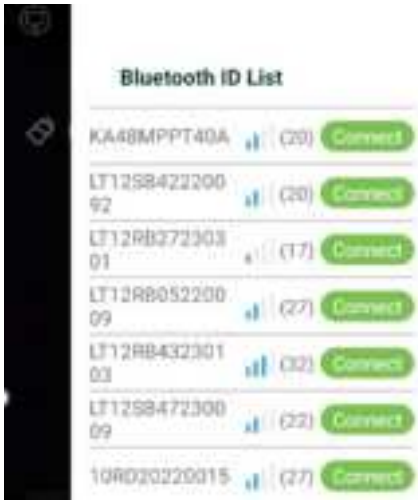


The app must be connected to the relevant controller via Bluetooth to work correctly.

Firstly, make sure the “Bluetooth” and “GPS” functions in your smartphone are available and switched “ON”. Position your smartphone close to the target controller. Open the app, and tap the Bluetooth connection button at the top right corner to view the Bluetooth devices available for connection.



On the right-hand side, you will see a slide menu displaying the Bluetooth IDs of nearby devices, ranked by signal strength. If you don't know your device ID, just connect to the device with the strongest signal.



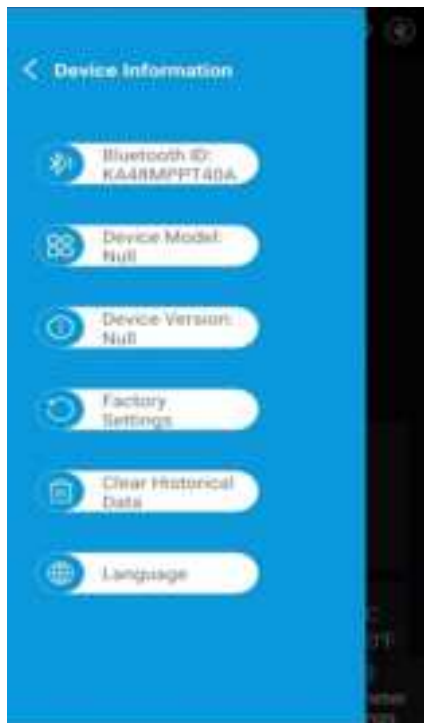
To confirm whether you have connected to the right device, especially if you have multiple charge controllers available for connection in the same spot and at the same time, you can view the “Device Information” screen. To access this screen, tap the device information button at the top left corner.



On the left-hand side, you will see a slide menu displaying device information including Bluetooth ID, Controller Model Number (original), and Device Firmware Version Number. You will also see options relating to:

- \* Factory settings
- \* Clearing historical data
- \* Language settings

These will be covered later in the manual.



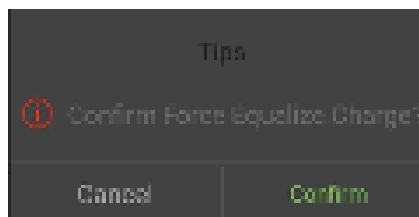
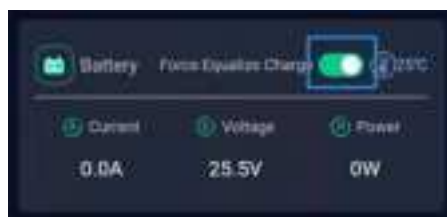
| No. | Item                        | Purpose                                           | Notes                                                                                                                                                 |
|-----|-----------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Battery Voltage Information | To display the present battery voltage            |                                                                                                                                                       |
| 2   | Solar Input Information     | Solar input information area                      |                                                                                                                                                       |
| 3   | PV Voltage                  | To display the present PV input voltage           |                                                                                                                                                       |
| 4   | Charge Mode                 | To display the present PV charge mode             | Null / MPPT / Boost / Float / Equalise                                                                                                                |
| 5   | Battery Information         | Battery information area                          |                                                                                                                                                       |
| 6   | Battery Charge Current      | To display the present battery charge current     | Not the PV input current                                                                                                                              |
| 7   | Battery Voltage             | To display the present battery voltage            |                                                                                                                                                       |
| 8   | Battery Temperature         | To display the present battery temperature        | Only available when battery temperature sensor is connected and attached to the battery. Otherwise, 25°C will permanently be displayed on the screen. |
| 9   | Battery Charge Power        | To display the present battery charge power       |                                                                                                                                                       |
| 10  | Controller Information      | Controller information area                       |                                                                                                                                                       |
| 11  | Controller Temperature      | To display the present controller temperature     | Indicates the temperature inside the controller.                                                                                                      |
| 12  | Controller Error Info       | To display any controller error information       | "Battery over-discharge," "controller over-heating," etc. Please refer to the user manual for more information.                                       |
| 13  | Today's Running Data        | To display the system working status              | Status only for the present day                                                                                                                       |
| 14  | Highest Voltage             | To display the highest battery voltage of the day | Value only for the present day                                                                                                                        |
| 15  | Lowest Voltage              | To display the lowest battery voltage of the day  | Value only for the present day                                                                                                                        |
| 16  | Charge Amount               | To display the total charge amount of the day     | Value only for the present day                                                                                                                        |
| 17  | Max Charge Power            | To display the max charge power of the day        | Value only for the present day                                                                                                                        |



On the Battery Information screen, you will see a “Force Equalize Charge” switch in the “off” position. To use this function, turn the switch “on” and tap “CONFIRM” in the following dialog box. The controller will then enforce one Equalization Charge for the battery.



Please note that once you tap “CONFIRM” in the dialogue box, the charge cannot be cancelled. If you have made a mistake and do not want to initiate a Force Equalize Charge, disconnect both the PV and battery connections from the controller, and also disconnect the Bluetooth device from the app. When you reconnect everything, you will find the switch has reverted to the “off” position.

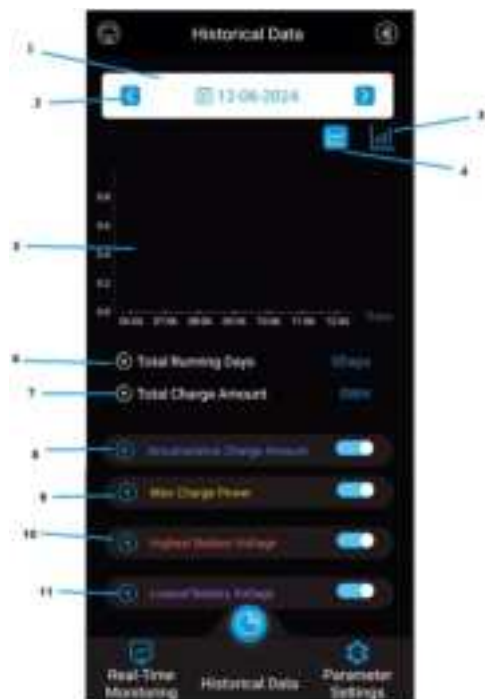


### Force Equalize Charge – Things To Know

\* The controller is set by default to perform an automatic equalization charge every 30 days. However, if the controller is disconnected from the system, this 30-day interval will reset and start counting from day one again. As a result, the battery may never receive an equalization charge. Therefore, the “Force Equalize Charge” function allows users to manually initiate an equalization charge if required.

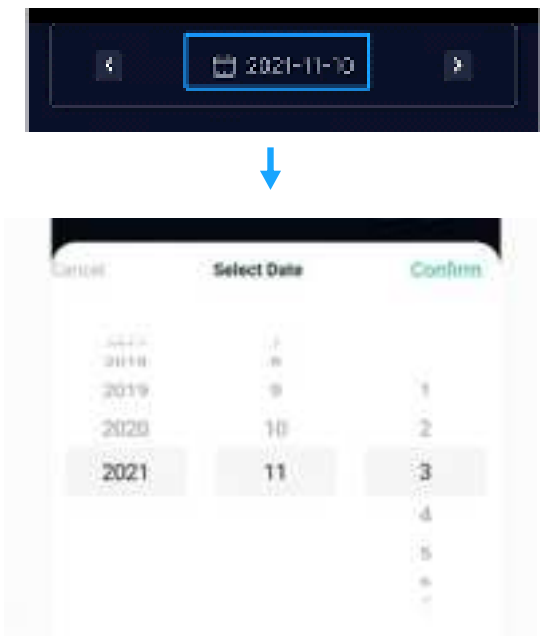
\* This function is only available for the following battery types: “FLD” (Flooded), “SEL” (Sealed or AGM), and “USE” (User-defined). When the battery type is set to “GEL” (Gel) or “Li” (Lithium), the switch icon will not appear in the Battery Information screen. Please note that performing an Equalize Charge on Gel and Lithium batteries can cause permanent damage.

\* Some models of our controller do not support this function, so you may not see the switch on the Battery Information screen. Additionally, for some older versions of our controllers, this function may not be available even if the switch appears on the screen (the switch may revert to “off” after being turned “on” for a few seconds).

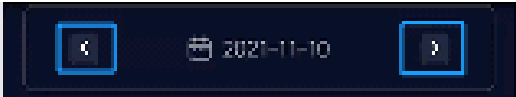


| No. | Item                             | Purpose                                         | Notes                                         |
|-----|----------------------------------|-------------------------------------------------|-----------------------------------------------|
| 1   | Date                             | To select a certain date for data review        | A calendar will display.                      |
| 2   | Date Increase / Decrease         | To increase / decrease the date for data review |                                               |
| 8   | Accumulative Charge Amount       | Accumulative charge amount that day             | Can be switched on / off                      |
| 9   | Max Charge Power                 | Max charge power recorded that day              | Can be switched on / off                      |
| 10  | Highest Battery Voltage          | Highest battery voltage recorded that day       | Can be switched on / off                      |
| 11  | Lowest Battery Voltage           | Lowest battery voltage recorded that day        | Can be switched on / off                      |
| 3   | Curve Graph Switch               | Switch to curve graph display                   |                                               |
| 4   | Histogram Switch                 | Switch to histogram display                     |                                               |
| 5   | Curve Graph / Histogram Overview | Curve graph / histogram display                 | Historical data overview from the last 7 days |
| 6   | Total Running Days               | System total running days                       |                                               |
| 7   | Total Charge Amount              | System total charge amount                      |                                               |
| 14  | Total Discharge Amount           | System total discharge amount                   |                                               |

On the Historical Data screen, you can view a seven-day record of the system's operation in a diagram. Tap "Date" to select a specific date, and the diagram below will display the system's working record for the 7 days preceding the selected date.



To adjust the date day-by-day, you can also tap on the arrows to the left and right of the "Date" field.



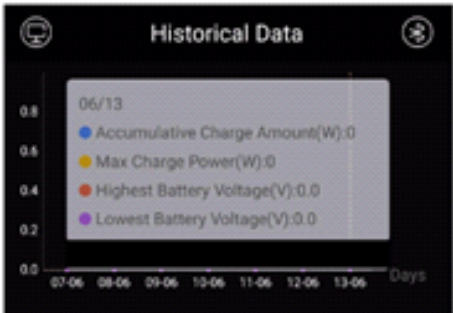
**Date Selection – Things To Know**

\* The app can record up to 300 days of system working data. Any data beyond this range will be considered invalid, and the system will revert to the last valid date.

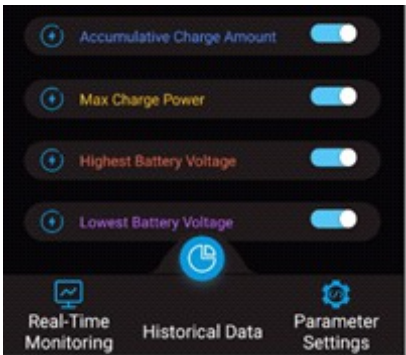
You can view the diagram as either a curve graph or a histogram – to switch between the two displays, tap the relevant icon in the top right of the diagram.



Tap on any area in the diagram to view detailed data of the four active items, as shown below:



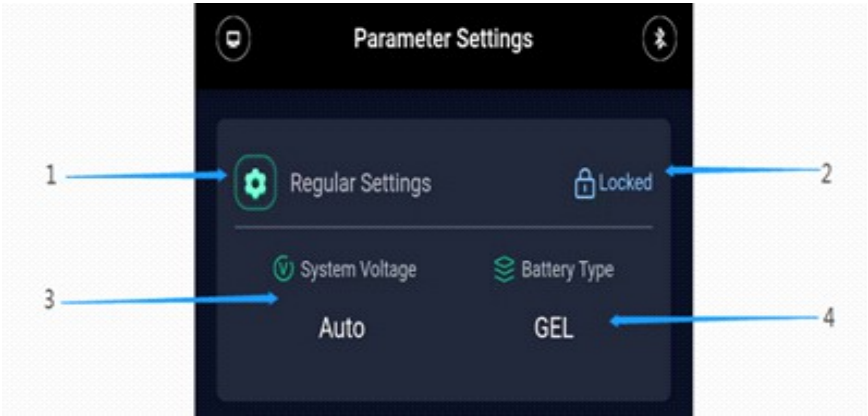
Use the toggles to either display or hide any of the items shown in the diagram:



### Visual Displays – Things To Know

\* The numbers on the left side of the diagram do not include units, but you can view the full values with units in the detailed view box for all 4 items.

The default settings for battery types “GEL” (gel battery), “FLD” (flooded battery), and “SEL” (sealed or AGM battery) are the same. Since these are all Lead-Acid batteries, we do not allow many parameters to be set for them.

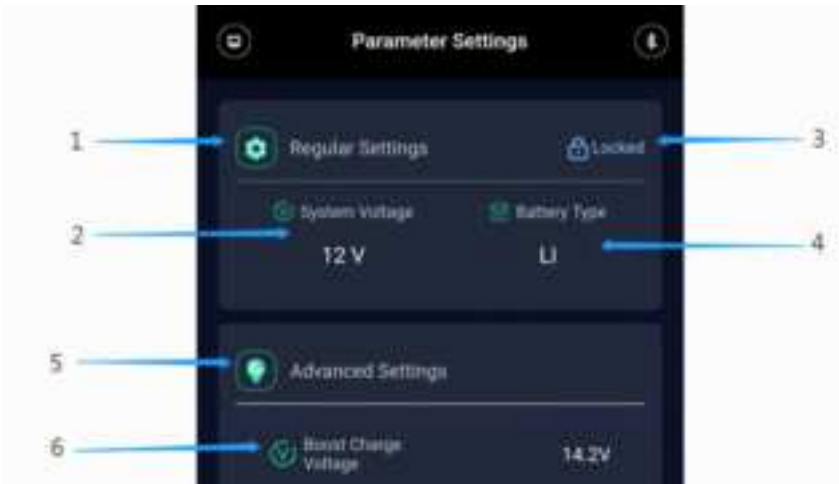


| No. | Item                         | Purpose                                   | Notes                                        |
|-----|------------------------------|-------------------------------------------|----------------------------------------------|
| 1   | Regular Settings Information | For charge controller regular settings    | For general settings                         |
| 2   | Setting Lock                 | To lock or unlock the settings screen     | To prevent wrong settings entered by mistake |
| 3   | Battery System Voltage       | Battery system voltage display & settings | Not adjustable for GEL/FLD/SEL               |
| 4   | Battery Type Setting         | Battery type display & settings           | To set battery type GEL/FLD/SEL/LI/USE       |

**GEL/FLD/SEL Battery Type Settings – Things To Know**

\* The default settings for “GEL,” “FLD,” and “SEL” are compatible with most types of lead-acid batteries. Please use these default settings for optimal performance. If you need to set different charge parameters for your lead-acid battery instead of using the default settings, please consult a professional before making any changes.

The Battery Type LI screen displays information and settings for lithium batteries. When you set the battery type to "LI," the following screen will appear:



| No. | Item                          | Purpose                                                            | Notes                                              |
|-----|-------------------------------|--------------------------------------------------------------------|----------------------------------------------------|
| 1   | Regular Settings Information  | For charge controller regular settings                             |                                                    |
| 2   | Battery System Voltage        | Battery system voltage display & settings                          | 12V-24V-36V-48V manual setting for Lithium Battery |
| 3   | Setting Lock                  | To lock or unlock the settings screen                              |                                                    |
| 4   | Battery Type Setting          | Battery type display & setting                                     | To set battery type GEL/FLD/SEL/LI/USE             |
| 5   | Advanced Settings Information | To input advanced settings                                         | For Lithium battery settings only                  |
| 6   | Boost Charge Voltage          | View and set over-charge or max charge voltage for lithium battery | For Lithium battery settings only                  |

### LI / Lithium Battery Type Settings – Things To Know

- \* The default setting of “LI” Battery Type is for 14.2V Lithium Iron Phosphate (LiFePO4).
- \* You should check your lithium battery specifications before choosing your setting.

User Mode (USE) allows battery or solar professionals to customise battery charge parameters for specific battery types and unique usage requirements that differ from common battery settings. When you select "USE" under Battery Type, the following screen will appear, providing a full range of battery parameters available for adjustment.



| No. | Item                          | Purpose                                             | Notes                                                  |
|-----|-------------------------------|-----------------------------------------------------|--------------------------------------------------------|
| 1   | Regular Settings Information  | For charge controller regular settings              |                                                        |
| 2   | Battery System Voltage        | Battery system voltage display & settings           | 12V-24V-36V-48V manually setting for User Type battery |
| 3   | Settings Lock                 | To lock or unlock the settings screen               |                                                        |
| 4   | Battery Type Setting          | Battery type display & setting                      | Set battery type: GEL/FLD/SEL/LI/USE                   |
| 5   | Advanced Settings Information | To input advanced settings                          | For User Battery Type settings only                    |
| 6   | Equalize Charge Voltage       | To view and set equalize charge voltage             |                                                        |
| 7   | Boost Charge Voltage          | To view and set boost charge voltage                |                                                        |
| 8   | Float Charge Voltage          | To view and set float charge voltage                |                                                        |
| 9   | Boost Charge Recovery Voltage | To view and set boost charge recovery voltage       |                                                        |
| 10  | Equalize Charge Time          | To view and set equalize charge time                |                                                        |
| 11  | Boost Charge Time             | To view and set boost charge time                   |                                                        |
| 12  | Temperature Compensation      | For battery maintenance in high and low temperature |                                                        |
| 13  | Equalize Charge Interval      | To view and set equalize charge interval in days    |                                                        |

**USE / User Battery Type Settings – Things To Know**

- \* Only professionals should perform advanced operations in Voltage & Time Settings for the USE type of battery.
- \* If you have changed any settings under the USE battery type by mistake, it is best to restore it to the factory settings and then reconfigure it.

You may notice a "lock" icon in the upper-right corner of the Regular Settings area. When it is in the "locked" status, you cannot make any changes in the Parameter Settings screen; only when it is "unlocked" can you adjust the settings.

To unlock the settings, tap on the "locked" lock icon and select "CONFIRM" in the following dialog box.

To lock the settings, tap on the "unlocked" lock icon and select "CONFIRM" in the following dialog box.



On the Regular Settings screen, you can set your desired Battery Type by tapping the relevant option in the list.

When you select battery type GEL, FLD or SEL/AGM, the battery System Voltage will be set to "AUTO" automatically.

|         |  |
|---------|--|
| FLD     |  |
| SEL/AGM |  |
| GEL     |  |
| LI      |  |
| USE     |  |

When you select battery type LI or USE, the system will allow you to set the Battery System Voltage to any of the following parameters: 12V / 24V / 36V / 48V. "AUTO" option is not available for these battery types.



## Battery Type & System Voltage – Things To Know

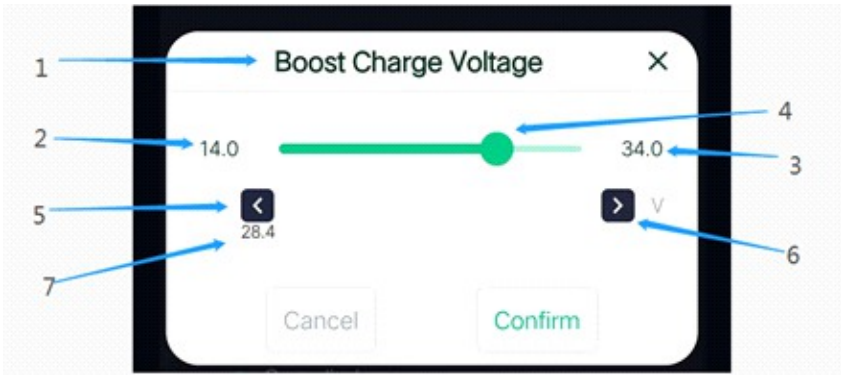
- \* There is no confirmation required for regular function settings. Therefore, when you enter settings for the Battery Type or Battery System Voltage, they will automatically be applied.
- \* For gel batteries, please choose "GEL" as the Battery Type. For most other types of sealed lead-acid batteries, such as AGM, select "SEL".
- \* We do not recommend using the "USE" mode unless you are an experienced professional, as there is a risk of damaging your battery.

Many instances of damage to the controller or the entire solar charge system can be attributed to incorrect settings. If you are not thoroughly familiar with the controller's setting protocols and logic, we strongly recommend consulting a professional before making any adjustments in the Advanced Settings.

In the Advanced Settings section, different parameters can be configured based on the selected Battery Type. For more details, please refer to section 4.1 of this manual. Below, we provide instructions for configuring each of these items.

To adjust charge voltage settings, tap on the value area of the relevant voltage items. A dialog box will appear where you can modify the voltage value. After making your adjustments, tap "CONFIRM", which will send the command to the controller. Alternatively, you can finalise these changes before the settings are locked again.

Example:



| No. | Item                    | Purpose                                                                    | Notes                                                                |
|-----|-------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------|
| 1   | Voltage Items           | "Boost Charge Voltage", "Float charge voltage", and other related settings |                                                                      |
| 2   | Minimum Voltage Value   | The minimum voltage value that can be set                                  | This value will automatically change when the system voltage changes |
| 3   | Maximum Voltage Value   | The maximum voltage value that can be set                                  | This value will automatically change when system voltage changes.    |
| 4   | Voltage Adjustment Tool | Adjust the voltage value by moving the green dot                           |                                                                      |
| 5   | Voltage Decrease Button | Decrease the value by one step                                             | One step = 0.1V on 12V system;<br>0.2V/24V; 0.3V/36V; 0.4V/48V       |
| 6   | Voltage Increase Button | Increase the value by one step                                             | One step = 0.1V on 12V system;<br>0.2V/24V; 0.3V/36V; 0.4V/48V       |
| 7   | Voltage Value to Be Set | The current voltage value about to be set                                  |                                                                      |

## “Charge Voltage” Settings – Things To Know

- \* Voltage setting hierarchy for USE / User Type batteries: Equalize charge voltage  $\geq$  Boost charge voltage > Float charge voltage > Boost charge recovery voltage. Any deviation from this hierarchy may result in a setting failure.
- \* To adjust the time parameters, tap the relevant time/day on the screen. Change the time in the dialog box, then tap CONFIRM. Alternatively, complete these adjustments before the settings are locked again.



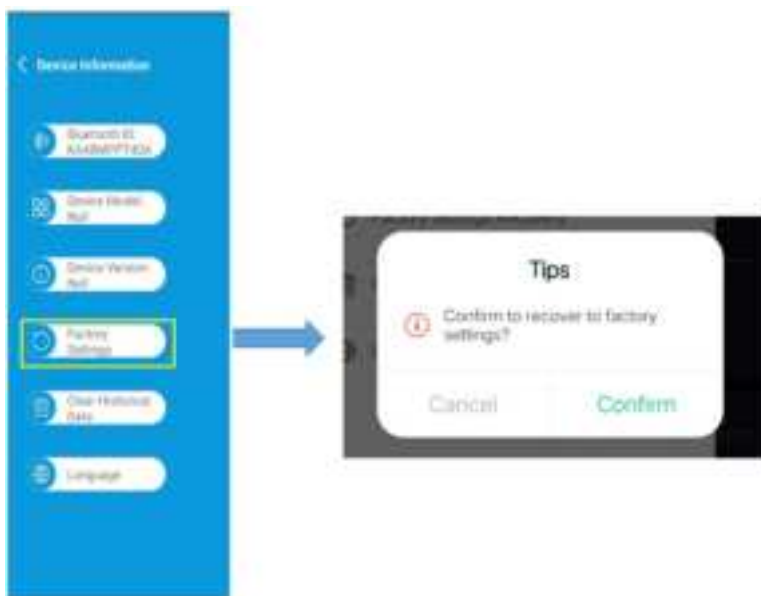
| No. | Item                 | Purpose                                                                  | Notes                          |
|-----|----------------------|--------------------------------------------------------------------------|--------------------------------|
| 1   | Minimum Time Value   | The minimum time value that can be set                                   |                                |
| 2   | Maximum Time Value   | The maximum time value that can be set                                   |                                |
| 3   | Time Decrease Button | Decrease the time by one unit                                            | One step = 1 second/minute/day |
| 4   | Time Increase Button | Increase the time by one unit                                            | One step = 1 second/minute/day |
| 5   | Time Value to Be Set | The current time value about to be set                                   |                                |
| 6   | Time Adjusting Tool  | Increase or decrease the time by moving the green dot                    |                                |
| 7   | Time Items           | Equalize Charge Time”, “Boost Charge Time”, and other time related items |                                |

## Time Items – Things To Know

- \* If you are using GEL or other batteries that don’t need an equalize charge, you can decrease the “Equalize Charge Interval” value to 0 per day.
- \* If you are unsure, please get help from a professional – incorrect settings can damage your batteries.

On the “Device Information” screen, you will find a “Factory Settings Recovery” function, which allows you to reset the controller to its default factory settings.

If you suspect that incorrect settings have been applied to the controller, or if it is malfunctioning and you are not sure why, you can use this function to restore the factory settings. Afterwards, seek professional advice for further adjustments.



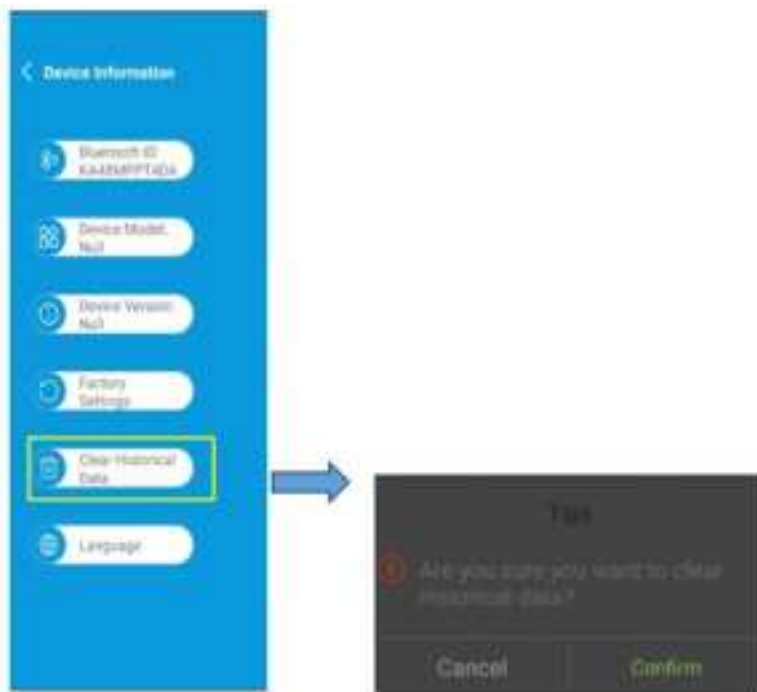
Tap "Confirm" in the dialogue box, and the controller will immediately reset to the factory settings. Please note that for some controllers, there may be a short delay before the default settings appear in the app.

### **“Factory Settings Recovery” – Things To Know**

- \* Restoring to factory settings will erase any previously set data or configurations on the controller. This cannot be undone.
- \* If you are unsure, consult a professional before proceeding.

On the “Device Information” screen, there is a “Clear Historical Data” function, which allows you to clear the historical data for the relevant controller.

When the controller connects to the battery, it starts recording data. If you wish to clear the data for a fresh start, you can use this function.



Tap “CONFIRM” in the dialogue box, and the relevant controller will begin erasing the historical data immediately. Please note that it may take some time for all data to be deleted.

### **“Clear Historical Data” – Things To Know**

- \* Clearing historical data will only erase the data recorded in the controller. It will not erase or change any previously input settings.
- \* If you are unsure, consult a professional before proceeding.

### Step 1

- \* Open the app, and connect to the target Bluetooth device ID.
- \* Review the data on the “Device Information” screen.

### Step 2

- \* Monitor your system’s status via the “Real-time Monitoring” screen.
- \* Run a “Force Equalize Charge” as needed.

### Step 3

- \* Review the information on the “Historical Data” screen, in curve graph or histogram form.

### Step 4

- \* View the battery type setting.
- \* Set the battery type and charge voltages accordingly.