



EG4 Electronics LiFePOWER4 Communications Hub User Manual

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LiFePOWER4 Communications Hub



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Safety Information



Danger: High Voltage and Current

1. Beware of high battery voltage and current. Please ensure that the battery module breakers and/or any switches are in the “open” or “off” position before installing or working with the communication hub.
2. Test all exposed conductors with a voltmeter before touching them. Any voltage exceeding 36V can cause serious injury or death.
3. Do not make any connections or disconnections while the system is operating. This could result in serious injury and/or death.
4. Wear proper personal protective equipment (PPE) when working with your system. This can include but is not limited to, safety glasses, gloves, and proper clothing.
5. High voltage DC can melt or weld tools and cause serious injury or blindness due to metal splatter.
6. All wiring should be approved by a licensed electrician or your local authority having jurisdiction (AHJ) for electrical permitting.

Brief Introduction

The EG4 LiFePOWER4 Communication Hub is a communication device that interprets the 48V LiFePOWER4 battery protocols into information that is readable by the inverter selected in the settings. The hub can establish communication with two battery banks, each consisting of 15 batteries, for communication between 30 LiFePOWER4 modules.

Installation

Packaging List and Location Selection

Packaging List

When the product is unpacked, the contents should match those listed here:

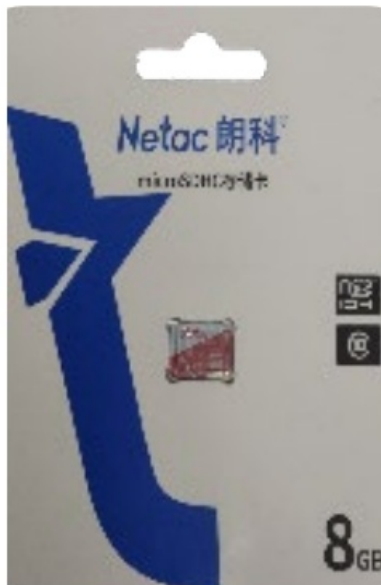
- (1) EG4 Communication Hub



- (1) 48Vdc Power Cable



- (1) 8GB Micro SD Card



- (4) M4-0.7 Bracket Bolts



- (2) Mounting Brackets



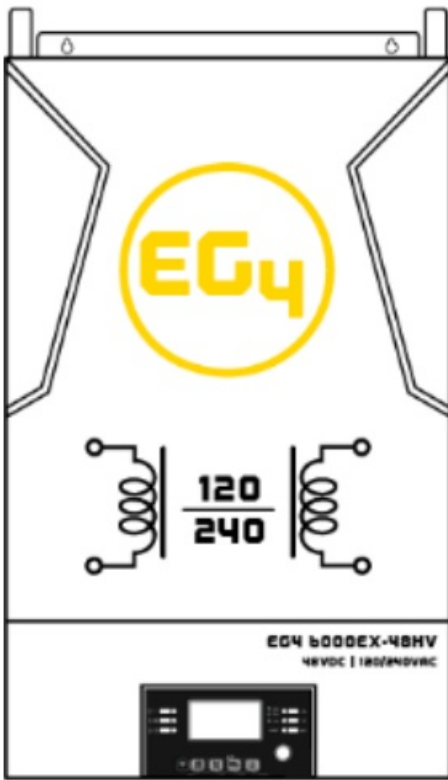
Requirements for Installation Location

The communication hub should not be placed in direct sunlight, rain, snow, or other extreme weather conditions. Direct UV exposure can cause LCD screen damage. The **EG4 Communication Hub** is **only intended for indoor use at room temperature**. High humidity levels can render this unit inoperable and void your warranty.



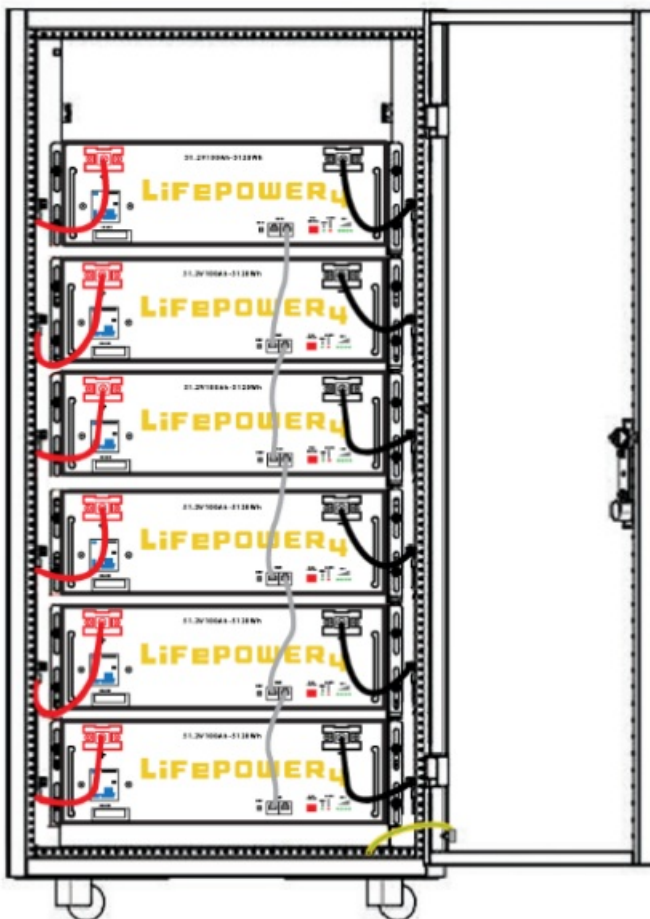
Mounting the Communication Hub

The communication hub is intended to be easily installed alongside any battery and inverter configuration. (See image on the right). The mounting screws are spaced about 2.4 in. (60.9mm) vertically and 9.27 in. (235.5mm) horizontally. The unit can be mounted to a flat surface or with the mounting brackets to serve as stands.



Hub Overview

Power Supply Connection



Only use the power supply cable included with the Communication Hub to power the system. This cable should only be used with 48V batteries. Before connecting the terminal box to the unit, make sure the ring terminals are

securely fastened to the battery connection.



Grounding

There is a bare metal section on the hub that is intended for grounding. If necessary, users can attach a grounding wire here to ground the hub in accordance with local regulations.

Communication Connection



The battery that will communicate directly with the communication hub must be set to DIP switch address 1. (See image on left)

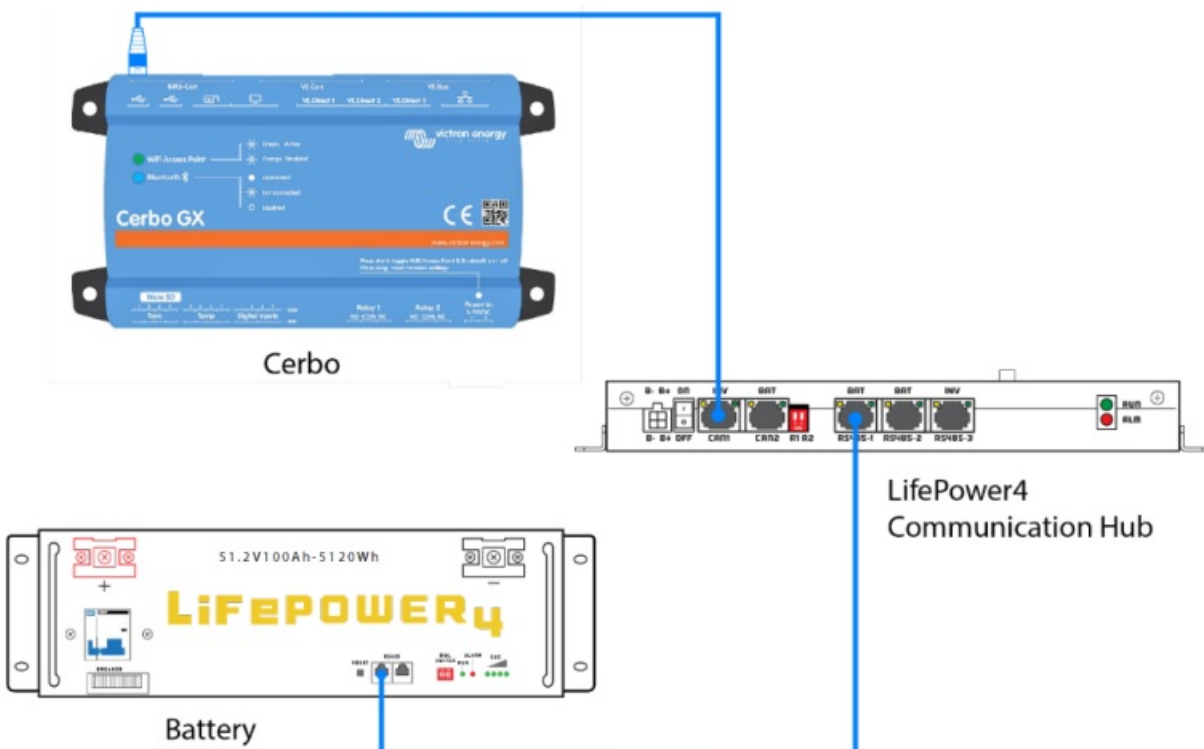


Important

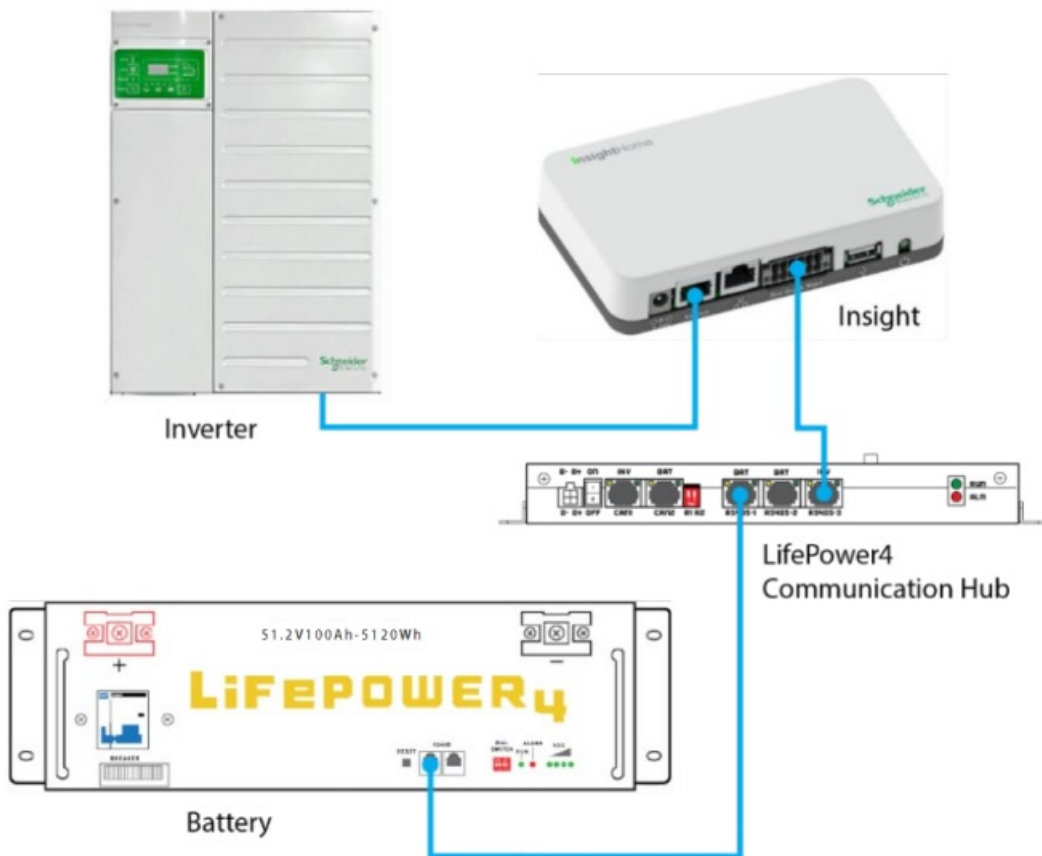
Do not use address 0 at all (all DIP switches down) The comm hub acts as the “host” in the bank, so it needs to have this address available for both RS485 BAT ports. Due to this, “Pack 16” will never display any data.

The Communication Hub can support BMS addresses from 1-15 batteries into RS485-1 and addresses 17-31 in RS485-2 for a total of 30 batteries. Connection of CAN BMS batteries into CAN-2 is currently not supported. Inverters are connected via CAN-1 for inverters using CAN protocols. If the inverter uses RS485 protocols, connect via RS485-3. **(See Section 4.2.2 & 4.3.3 for inverter protocol selection)** Below are some system connection examples:

Victron (CAN bus)

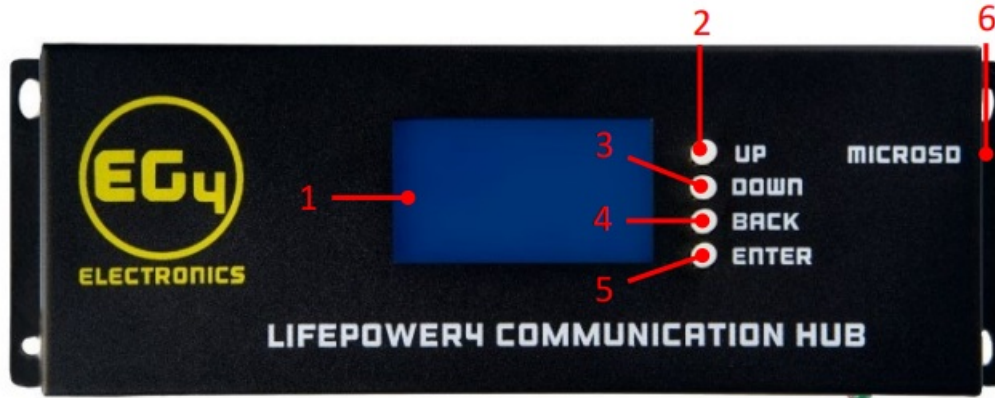


Schneider (RS485)



Communication Hub Diagram

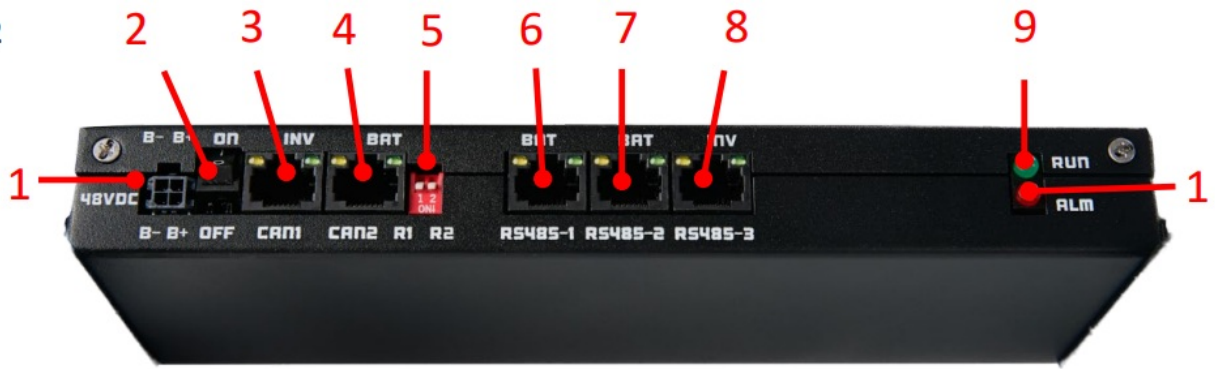
Figure 1



| No. | Item | Description |
|-----|----------------|--|
| 1 | Display Screen | Parameters and module information |
| 2 | UP | Moves the cursor up or increases the value |
| 3 | DOWN | Moves the cursor down or decreases the value |
| 4 | BACK | Return to the main interface |
| 5 | ENTER | Press to modify or confirm a selection in the setting interface. (Press and hold for 10s to enter settings) |
| 6 | MICROSD | Micro SD card slot |

Figure 2

Figure 2



| No. | Item | Description |
|-----|---------|--|
| 1 | B+, B- | 48VDC power connection (positive and negative) |
| 2 | ON/OFF | On/Off power switch |
| 3 | CAN1 | CAN port for communication to inverter |
| 4 | CAN2 | CAN port for communication to CAN batteries <i>(for future use)</i> |
| 5 | R1, R2 | Dip switches for address configuration |
| 6 | RS485-1 | RS485 communication port of the BMS. A single bank can chain up to 15 B MSs with addresses 1-15 |
| 7 | RS485-2 | RS485 communication port of the BMS. A single bank can chain up to 15 B MSs with addresses 17-31 |
| 8 | RS485-3 | RS485 communication port to inverter |
| 9 | RUN | Run LED, flashes to display run status (See Section 4.3.2) |
| 10 | ALM | Alarm LED, flashes to display alarm status (See Section 4.3.2) |

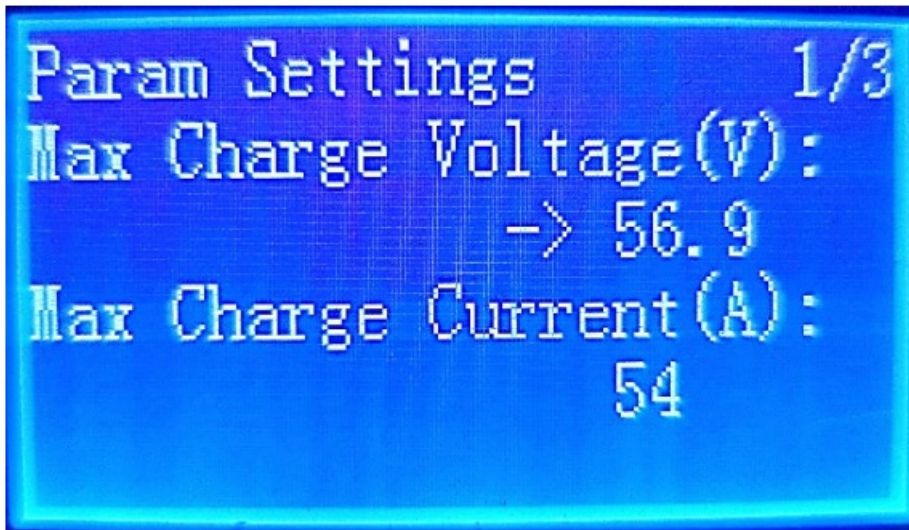
Operation Guide

Accessing Settings

Press and hold the “ENTER” button for about 10 seconds while on the home screen to access the settings menu. You will be able to adjust your maximum charge amperage per battery, maximum charge voltage, selected protocol, and baud rate. To return to the main menu, press the “BACK” button.

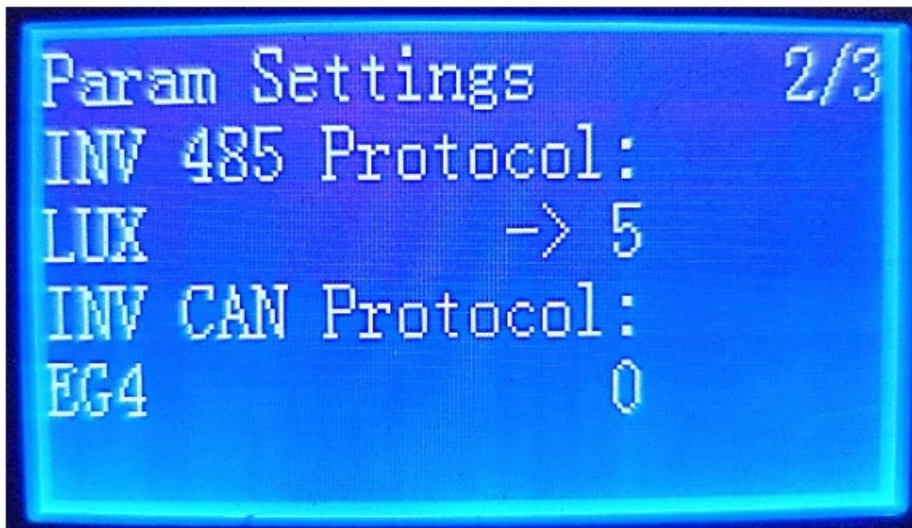
Parameter Settings

Maximum Parameters (Page 1)



You can adjust the maximum charge voltage and amperage in the settings menu to suit your needs. You can also limit the amperage at which each battery charges. We recommend configuring these to match the LiFePOWER4 battery specifications. (Refer to LiFePOWER4 specification sheet for a full list of recommended parameters.)

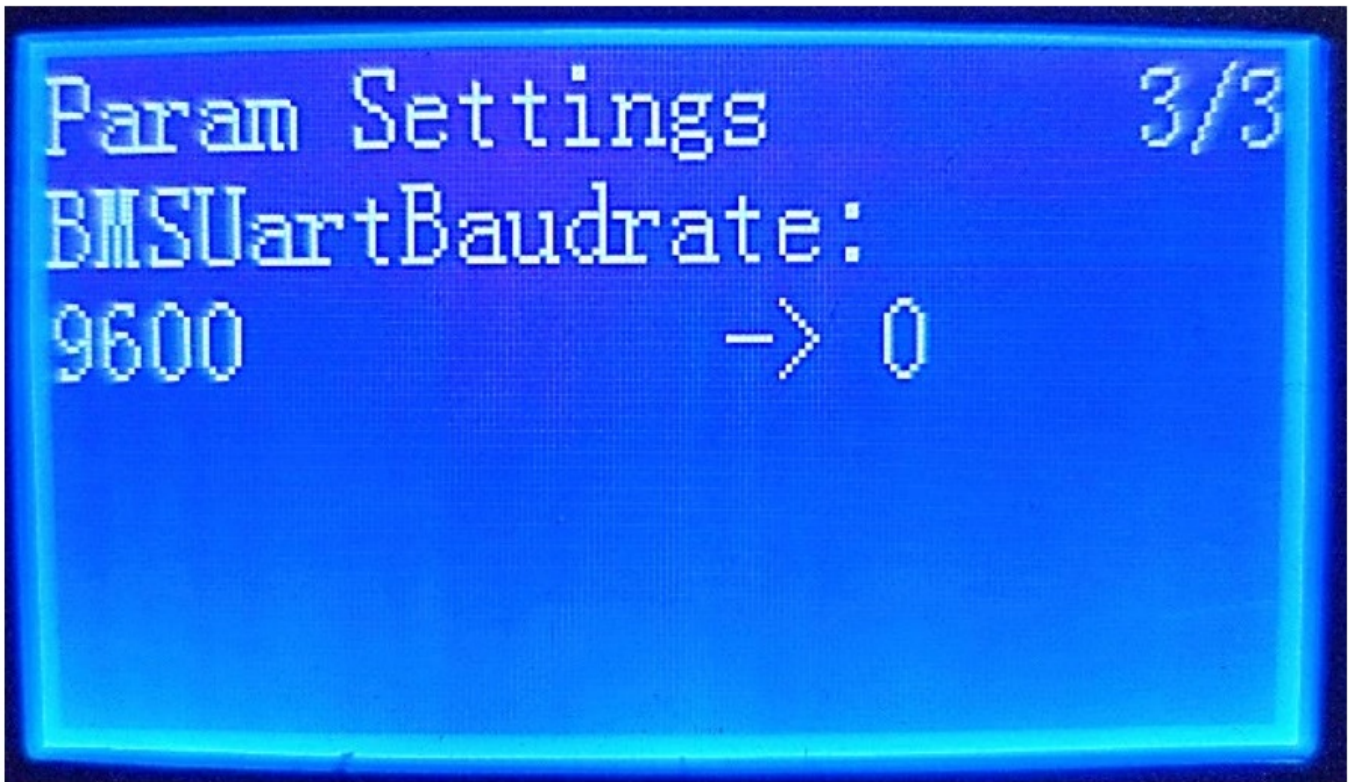
RS485 Protocol List (Page 2)



| No | Protocol | Brand |
|----|-----------|------------|
| 0 | EG4 | EG4 |
| 1 | GROWATT | Growatt |
| 2 | SCHNEIDER | Schneider |
| 3 | VOLTRONIC | Voltronics |
| 4 | PYLON | Pylontech |
| 5 | LUX | Luxpower |

CAN Protocol List (Page 2)

| NO. | Protocol | Brand |
|------------|-----------------|-------------------------|
| 0 | EG4 | EG4 |
| 1 | VICTRON | Victron |
| 2 | SCHNEIDER | Schneider |
| 3 | GROWATT | Growatt |
| 4 | AISWEI | Aiswei |
| 5 | SOL-ARK | Sol-Ark |
| 6 | SMA | Sunny Island |
| 7 | SOFAR | Sofar |
| 8 | SOLIS | Solis |
| 9 | GOODWE | GoodWe |
| 10 | DEYE | Deye |
| 11 | SIGINEER | Sigineer |
| 12 | SAJ | SAJ |
| 13 | DYNESS | Dyness |
| 14 | INVT | INVT |
| 15 | MEGAREVO | Megarevo/ EG4 8k-EXP |
| 16 | LUX | Luxpower |



The rate at which information is transferred in a communication channel is referred to as the baud rate. In the context of a serial port, “9600 baud” means that the serial port can transfer a maximum of 9600 bits per second. Important

Do not change the baud rate of the Communication Hub, as this can render the device incompatible with the batteries.

Visibility Function

LCD Screen

The display on the communication hub will show the consolidated voltage, current draw, state of charge, temperature, system (battery bank) communication status, inverter communication status, and the number of batteries in the bank. While in the main menu, pressing up or down will cycle through different pack details, such as individual battery cell voltages.

LED Indicators

Each communication port is equipped with two indicator lights, one yellow and one green. The yellow light should always remain on, while the green light will blink during active communication. There is also a green LED labeled “RUN” that will flash during proper operation and a red light labeled “ALM” that will turn on during an alarm state.

Storage Function

A microSD card is required to store data during faults or alarms.

Removing the SD card will immediately clear all data stored in it.

You can record BMS address, cell voltage, total voltage, charge/discharge capacity, charge/discharge current, temperature, as well as many other parameters at the time of a fault or alarm. Storage content is read through the monitoring interface in a LIFO (last in, first out) manner.

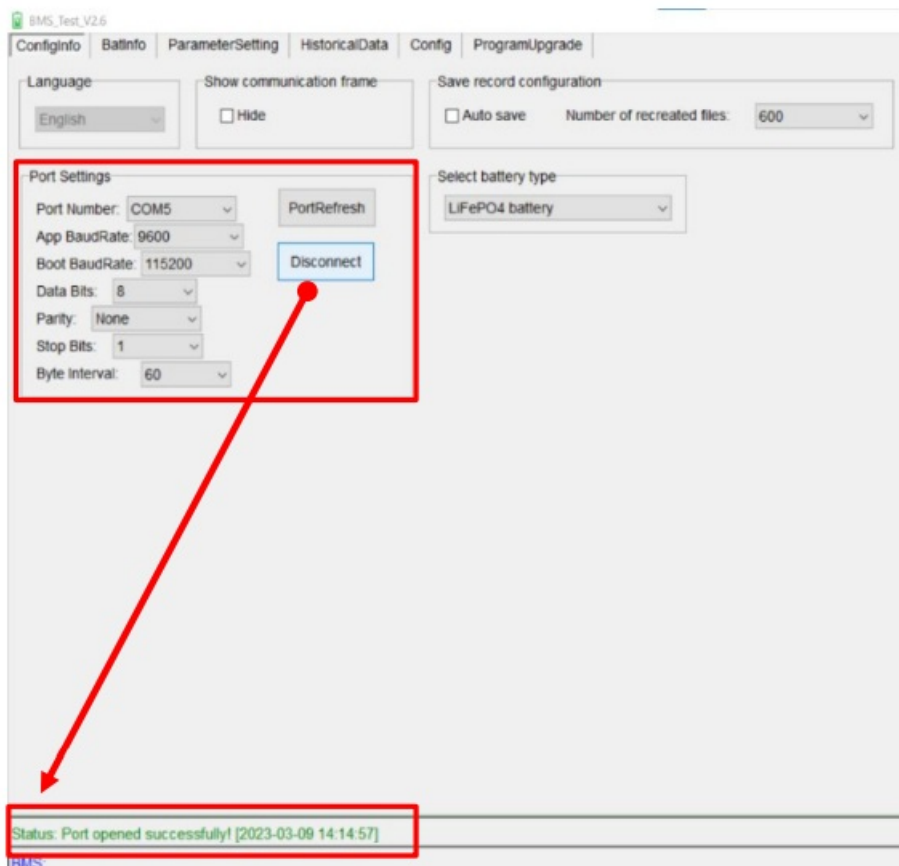
Troubleshooting & Maintenance

Extracting Data from SD Card

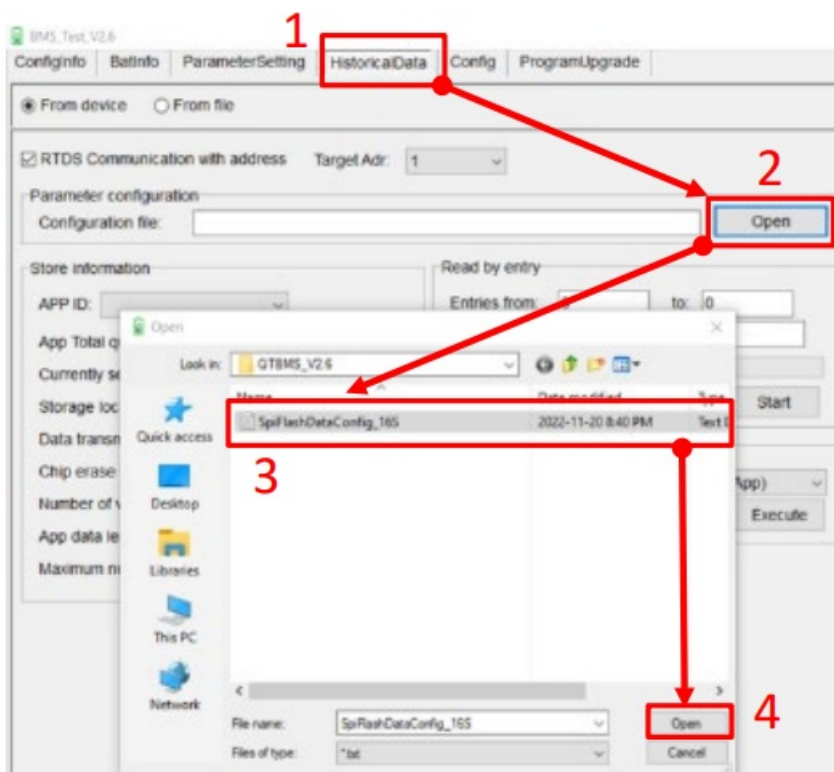
To view and extract data from the SD card you will need the application BMS Test, which can be downloaded from the EG4 website: <https://eg4electronics.com/downloads/>. Follow the installation instructions located here: <https://youtu.be/1BlyzMdy2TM>.

Steps to view and extract SD card data

1. After installing BMS Test, open the software and ensure you are connected to the battery. (See image on right)



2. Click on the "Historical Data" tab. In the "Parameter configuration" box, click "Open," and select the data file named



- Under the “Read by entry” box, change the “Entries from” 0 to 100.

Read by entry

Entries from: 0 to: 100

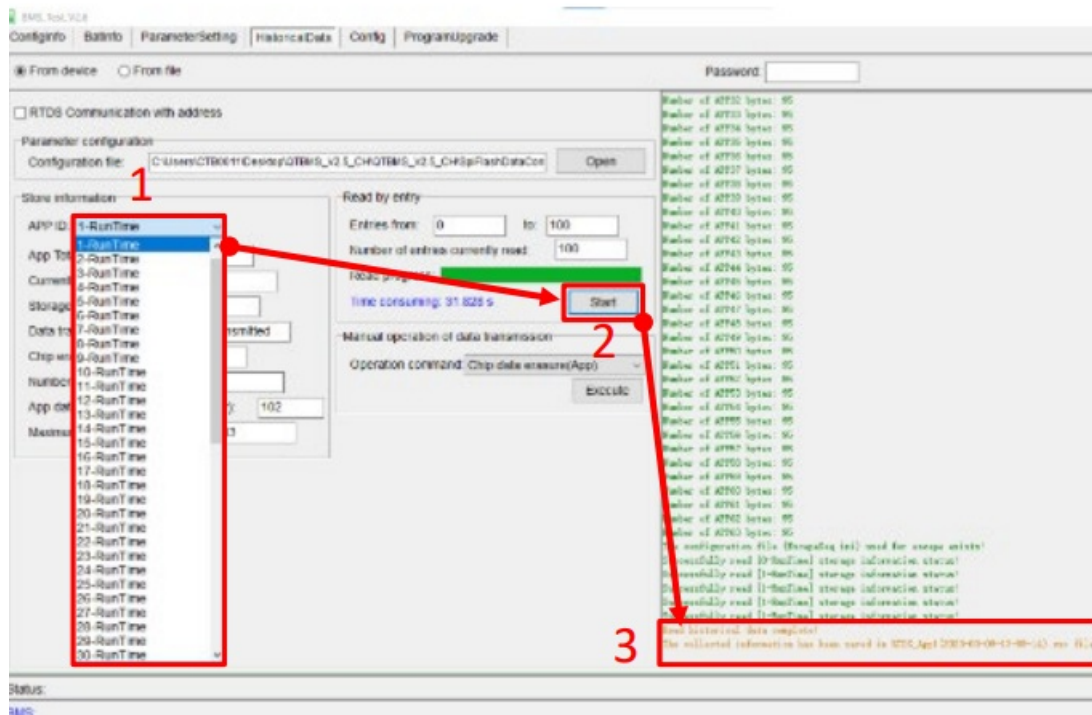
Number of entries currently read:

Read progress:

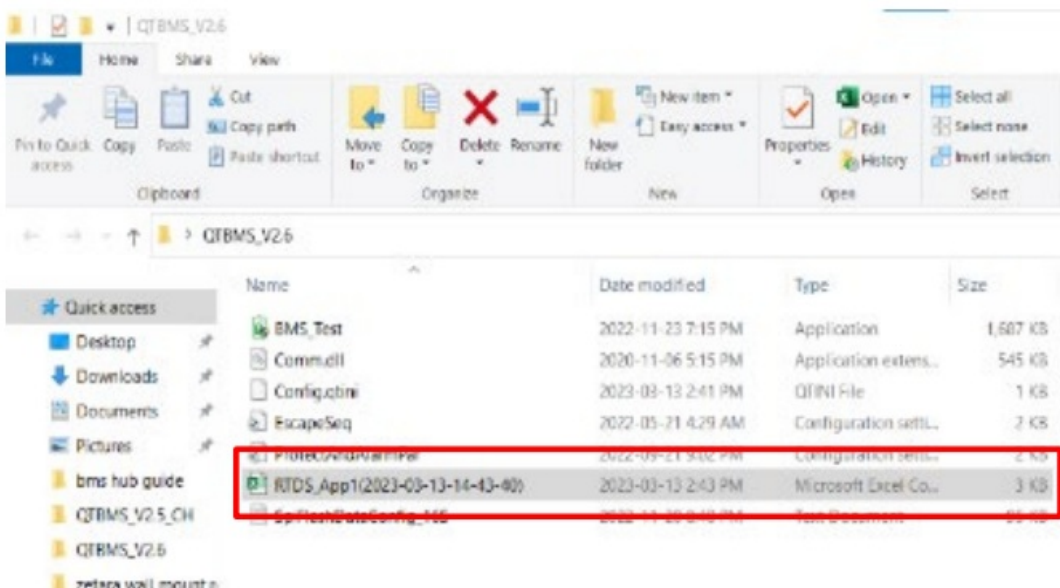
Time consuming: 0.000 s

Start

- Under “Store information,” select your battery ID under “APP ID:” and click “Start” in the “Read by entry” box to create an Excel file of the data logs of that battery.



- The file will be in the BMS Test software folder in your PC with a RTDS file name.




| | |
|---|---|
| Nominal Operating Parameters | |
| Operating Voltage | 20-60VDC |
| Charge/Discharge Setting Range | 0-100A |
| Nominal Environmental Parameters | |
| Rec. Temperature | 68–77°F (20–25°C) |
| Humidity | <55% |
| Communication Parameters | |
| Communication Ports | RS485/CAN Bus |
| General Specifications | |
| Dimensions (H×W×D) | 3.4 in.×9.7 in.×1.3 in. (8.5 cm×24.5 cm×3 cm) |
| Weight | 1.3 lbs. (0.6 kgs) |
| Warranty | 3 Year (only when used indoors) |

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 Version 1.0.0 | Information subject to change without notice.



Documents / Resources

| | |
|---|---|
|  | EG4 Electronics LiFePOWER4 Communications Hub [pdf] User Manual LiFePOWER4 Communications Hub, LiFePOWER4, Communications Hub, Hub |
|---|---|

References

- 
[EG4 Electronics | Power 4 LiFe | Batteries, Inverters, and Everything Solar](#)
- 
[Downloads | EG4 Electronics](#)