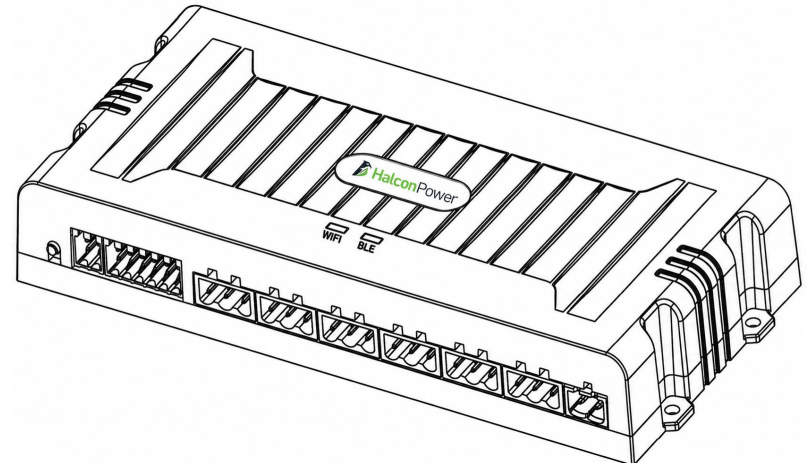




HALCOMMHUB Communication Hub User Manual



Dear users:

Thank you for choosing our products!

Safety Instructions

- 1. There are no parts inside the product that require maintenance or repair, and it cannot be disassembled by yourself.
 - 2. Please install the product indoors to prevent water from entering the interior of the product.
 - 3. It is recommended to install the product in a well-ventilated place.
 - 4. It is recommended to install a suitable fuse or circuit breaker outside the product.
 - 5. Please do not violently plug or unplug the device cable to avoid poor communication.
 - 6. After installation, check whether all line connections are tight to avoid poor communication caused by virtual connections on the interfaces.
 - 7. Please do not place this product in an area with flammable and explosive materials.
 - 8. Power off the relay-related equipment first, and then install and adjust the relay wiring.
- Warning:** Indicates that this operation is dangerous. Safety preparations must be made before operation.
- Note:** This operation is destructive.
- Tip:** Indicates suggestions and tips for the operator.

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1. Product introduction

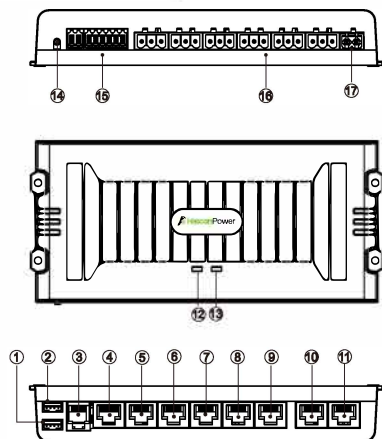
1.1 Product Overview

The HALCOMMHUB, Communication Hub, supports WIFI or Bluetooth Communication and can collect data as well as remotely control inverters, DCDC Chargers, MPPT solar charge controllers, batteries, and intelligent shunts. It is core of the vehicle electrical system. In addition, it has the functions of multi-channel temperature measurement, liquid level measurement, and multi-channel programmable relay control: it has the characteristics of a simple controller with easy installation.

1.2 Product features

- ◆ Support DC10~100V power supply.
- ◆ Support TTL, RS232, RS485, CAN communication.
- ◆ Support WIFI or Bluetooth communication.
- ◆ Support multi-channel temperature monitoring.
- ◆ Support multi-channel liquid level monitoring.
- ◆ Support multiple programmable relays.
- ◆ Support remote OTA upgrade.
- ◆ Industrial grade components, operating temperature range: -35°C~65°C.
- ◆ Simple structure and convenient installation.

1.3 Appearance and interface



	Item	Description
①	TTL2	TTL communication port
②	TTL1	TTL communication port
③	RS232	RS232 communication port
④	RS485/CAN-1	RS485/CAN communication port, non-isolated communication
⑤	RS485/CAN-2	RS485/CAN communication port, non-isolated communication
⑥	RS485/CAN-3	RS485/CAN communication port, non-isolated communication
⑦	RS485/CAN-4	RS485/CAN communication port, non-isolated communication
⑧	RS485/CAN-5	RS485/CAN communication port, non-isolated communication
⑨	RS485/CAN-6	RS485/CAN communication port, non-isolated communication (LCD interface)
⑩	RS485-7	RS485 communication port, non-isolated communication
⑪	BMS.RS485/CAN-8	BMS RS485/CAN communication port, non-isolated communication
⑫	WIFI	WIFI communication indicator light
⑬	BLE	Bluetooth communication indicator light
⑭	Reset	Reset/factory setting buttons
⑮	Temp.or Tank	8 sets of temperature/liquid level detection ports
⑯	Relay	6 sets of relay dry contact outputs
⑰	DC10~100V	Power input interface

2. Product application

2.1 Specification parameter table

Product number	HALCOMMHUB
Input voltage range	DC10~100V
Communication function	BLE/WIFI, TTL, RS232, RS485, CAN(RV-C)
BLE	2.4GHz
WIFI	802.11a/b/g/n 1*1; 2.4GHz/5GHz
Buzzer	Support fault alarm
Static power	<1.2W
Ambient temperature	-35°C~65°C
Cooling method	Natural heat dissipation
Size	183.0*84.0*28.5mm
Weight	265g

2.2 Definition and description of indicator lights

Indicator light	Indicate color	Instruction method	Status description
BLE	Blue	Go out	Bluetooth is not connected
		On off	There is data transmission and reception
		Steady	Bluetooth is connected, no data is sent or received.
WIFI	Green	Go out	There is data transmission and reception
		On off	Networking, no data transmission and reception
		Steady	Not connected to the internet

Idle status indicator light: the green light and the blue light go out for 1.8s at the same time, and are always on for 0.2s ;

Remove binding indicator light: the green light and the blue light go out for 0.4 at the same time, and are always on for 0.1s;

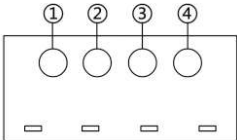
OTA upgrade indicator: green light on-> blue light on-> green light and blue light off. According to this rule, it is a flowing display.

2.3 Button description

Button	Operate	Illustrate	Function
Button	Press and hold for 2S	Reset	Reset
	Press and hold for 5S	Restore factory settings	Restore factory settings (relay returns to default manual mode, status is off)
	Press and hold for 10S	Compulsory distribution network	Restore factory settings (relay returns to default manual mode, status is off)
	Press and hold for 15S	Restart the screen	Restore factory settings (relay returns to default manual mode, status is off)

2.4 TTL communication

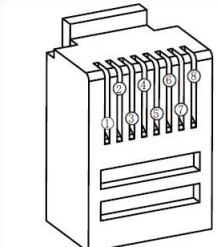
- 1) The default baud rate is 9600bps; parity bit: none; data bit: 8bit; stop bit: 1bit
- 2) The interface is defined as follows:

	S/N	Definition
	①	VCC(13.2V)/NC
	②	TX data sending
	③	RX data receiving end
	④	GND

2.5 RS485/CAN-1~5 communication

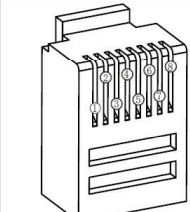
- 1) RS485 communication
Default baud rate 9600bps; Parity bit: None; Data bit: 8bit; Stop bit: 1bit Interface type: RJ45
- 2) CAN communication: default baud rate 250kbps; supports RV-C protocol

- 3) RJ45 interface communication line sequence definition:

	S/N	Definition
	①	CAN_L
	②	CAN_H
	③	NC
	④	NC
	⑤	Power ground/signal ground
	⑥	B/D-
	⑦	A/D+
	⑧	NC

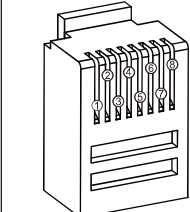
2.6 RS485LCD (Liquid Crystal Display) communication

- 1) RS485 communication:
Default baud rate 115200bps; Parity bit: None; Data bit: 8bit; Stop bit: 1bit Interface type: RJ45
- 2) CAN communication: default baud rate 250kbps; supports RV-C protocol
- 3) RJ45 interface communication line sequence definition:

	S/N	Definition
	①	CAN_L
	②	CAN_H
	③	VCC output13.2V
	④	Power ground
	⑤	Power ground
	⑥	B/D-
	⑦	A/D+
	⑧	VCC output13.2V

2. RS485-7 isolated communication

- 1) RS485 communication :
Default baud rate 9600bps; Parity bit: None; Data bit: 8bit; Stop bit: 1bit Interface type : RJ45
- 2) RJ45 interface communication line sequence definition :

	S/N	Definition
	①	NC
	②	NC
	③	NC
	④	NC
	⑤	Power ground/signal ground
	⑥	B/D-
	⑦	A/D+
	⑧	NC

2.8 BMS.RS485/CAN-8 isolated communication

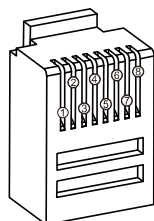
1) RS485 communication:

Default baud rate 9600bps; Parity bit: None; Data bit: 8bit; Stop bit: 1bit

Interface type: RJ45

2) CAN communication: default baud rate 250kbps; supports RV-C protocol

3) RJ45 interface communication line sequence definition:



S/N	Definition
1	B/D-
2	A/D+
3	Power Ground/Signal Ground
4	CAN_H
5	CAN_L
6	Power Ground/Signal Ground
7	A/D+
8	B/D-

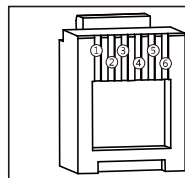
2.9 RS232 communication

1) RS232 communication:

Default baud rate 9600bps; Parity bit: None; Data bit: 8bit; Stop bit: 1bit

Interface type: RJ12

2) RJ12 interface communication line sequence definition:



S/N	Definition
①	RX data receiving end
②	TX data sending end
③	Power ground/signal ground
④	Power ground/signal ground
⑤	NC
⑥	NC

2.10 Programmable relay output

(1) Single pole double throw relay.

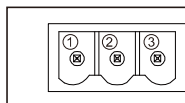
(2) Relay contact specifications 250VAC/6A, 30VDC/6A.

(3) From left to right, they are NO (normally open contact), COM (common point), and NC (normally closed contact).

(4) Relay triggering conditions:

1) Manual mode: When the relay switch on the APP is turned off, the relay coil does not work and is in a normally closed state (COM and NC are connected); when the relay switch on the APP is turned on, the relay coil works, in the normally open state (COM and NO are connected)

Trigger mode: Automatically runs according to the trigger conditions set by the APP.



S/N	Definition
①	NO(normally open contact)
②	COM(common point)
③	NC(normally closed contact)

2.11 Temperature and liquid level detection channel

Figure 2.10-1 has a total of 8 channels. By default, CH1~CH2 are temperature detection channels, and CH3~CH8 are liquid level detection channels.

CH1~CH8 channels support APP for switching configuration of temperature or liquid level.

The temperature detection channel needs to use the NTC standard temperature sensor model 10KF3950.

The liquid level detection channel supports 0~190℃ and 240~33℃ standard liquid level sensors.

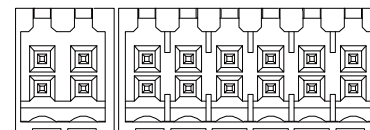


Figure 2.10-1

The temperature/liquid level detection channel uses the wire as shown in Figure 2.10-2. It is recommended to use a wire stripper to strip 8~10mm of the wire.

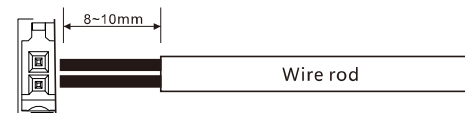


Figure 2.10-2

2.12 LCD screen

Pet-name ruby port in Figure 1-1 can be connected to the screen provided by our company to monitor and set the data.

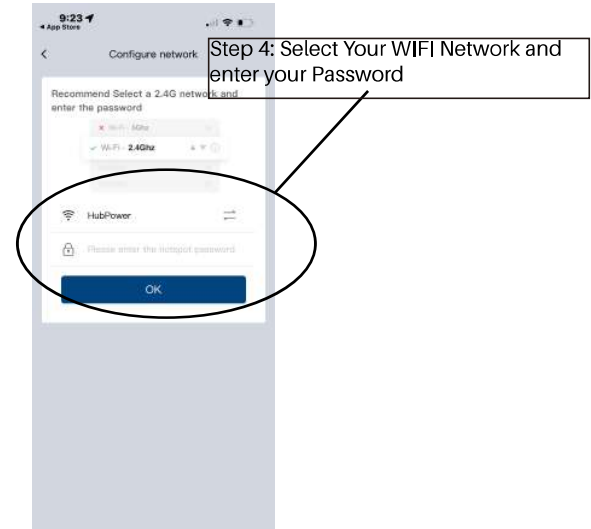
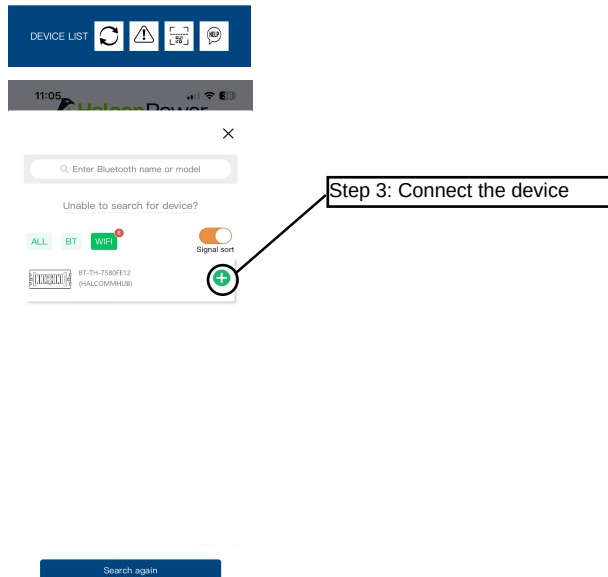
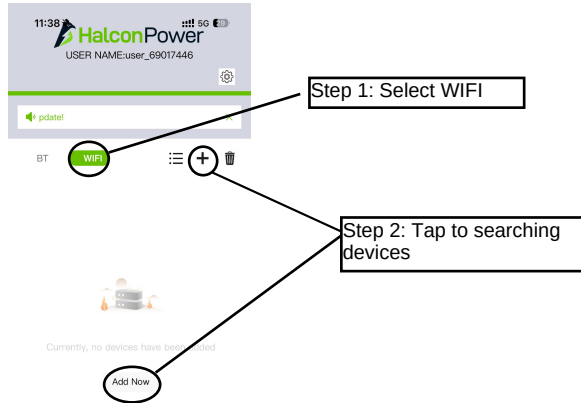
2.13 BLE/WIFI communication and APP download QR code

HALCOMMHUB integrates BLE and WIFI dual modules, and can connect to BLE or WIFI through the APP to monitor and set data on the device(s).



3. APP setting operation

3.1 About WiFi distribution network



4. Frequently asked questions and solutions

Phenomenon	Describe	Approach
The indicator light is off	BLE is not connected or WIFI is offline	1).Research and connect to BLE 2).Re-configure the WIFI network 3).Check whether the power supply of the device is normal
The relay does not work	The relay does not work	Re-fix the wiring of the relay dry contact
Device offline	Poor contact of the communication terminal	Re-fix the communication terminal

5. Product installation

5.1 Product installation

- ◆ Should be installed indoors to avoid direct sunlight and rainwater infiltration.
- ◆ It is forbidden to connect the input power supply reversely during installation, otherwise it will cause irreversible damage!

5.2 Installation steps

Step 1: Choose an installation location

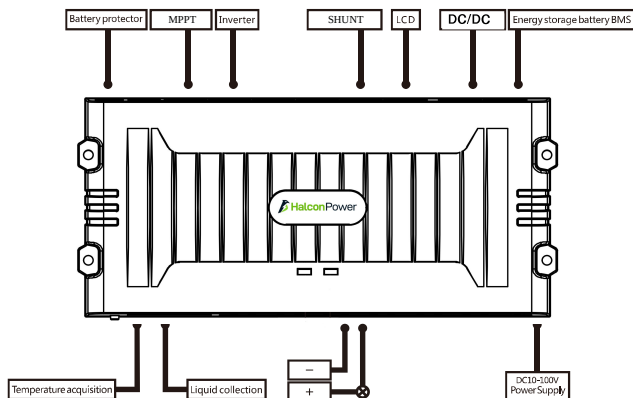
Avoid installation in places exposed to direct sunlight, high temperatures and water, and ensure that the surrounding area is well ventilated.

Step 2: Fix the product

Mark the installation position according to the installation dimensions of the product, drill 4 mounting holes of appropriate size at the 4 marks, then align the product fixing holes with the 4 pre-drilled mounting holes, and then tighten the 4 screws to secure them. (It is recommended to fix the screws diagonally first).

Step 3: schematic diagram of communication application

TTL 1/TTL 2/RS232/RS485/CAN (1 ~ 6)/RS485-7 isolated communication connection monitoring equipment. Among them, BMS RS485/CAN interface only supports communication with battery;



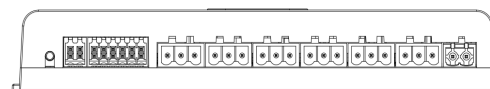
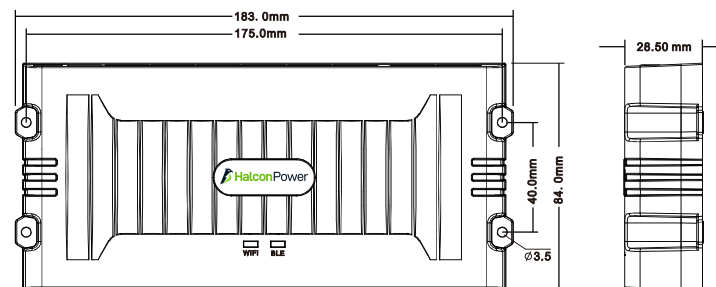
6. System maintenance

In order for the product to maintain optimal working performance for a long time, it is recommended that the following items be checked regularly.

- ◆ Check the wiring terminals for corrosion, insulation damage, high temperature or signs of burning /discoloration, chassis deformation, etc. If any are found, please repair or replace them in time.
- ◆ If the inspection finds that the wires are exposed, damaged, or have poor insulation performance, they should be repaired or replaced in time.
- ◆ Check if there is dirt, nesting insects and corrosion and clean it in time.

Warning: Electric shock hazard! When performing the above operations, be sure to ensure that all power supplies are disconnected before performing corresponding inspections or operations! Non-professionals, please do not operate without authorization.

7. Product size



Product size : 183.0*84.0*28.5mm
Mounting hole spacing : 175.0*40.0mm
Fixing hole position : 3.5mm