

FusionCharge SmartLogger3000, SmartModule1000A01

Quick Guide

Note: This quick guide includes cable connection instructions for the PV+ESS+charger solution.

Issue: 04

Part Number: 31500KCS

Date: 2025-12-01

HUAWEI TECHNOLOGIES CO., LTD.

Copyright © Huawei Digital Power Technologies Co., Ltd. 2025. All rights reserved.

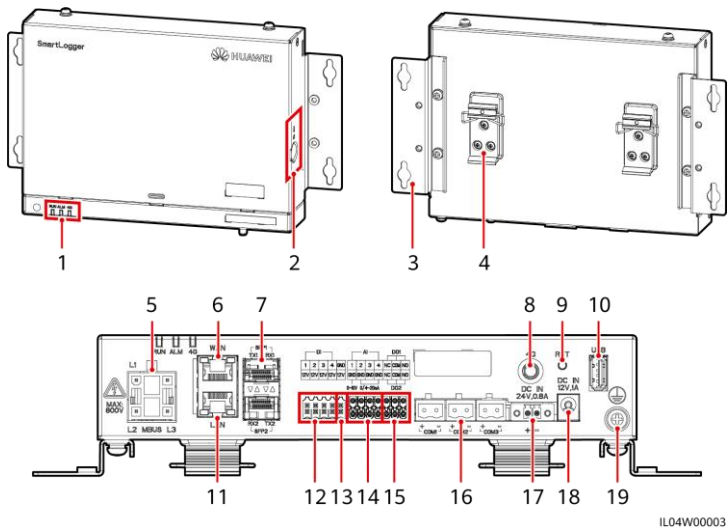


NOTICE

- The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.
- The DANGER, WARNING, CAUTION, and NOTICE statements described in this document do not cover all the safety precautions. You also need to comply with relevant international, national, or regional standards and industry practices.
- Only qualified professionals or trained personnel are allowed to perform operations on the equipment. Operators shall understand the components and functioning of a grid-tied PV power system, and shall be familiar with relevant local standards.
- During operations, use dedicated insulated tools and wear personal protective equipment, such as protective clothing, insulated shoes, goggles, safety helmets, and insulated gloves.
- Operation personnel shall understand a charging system, its working principles, and relevant national/regional standards.

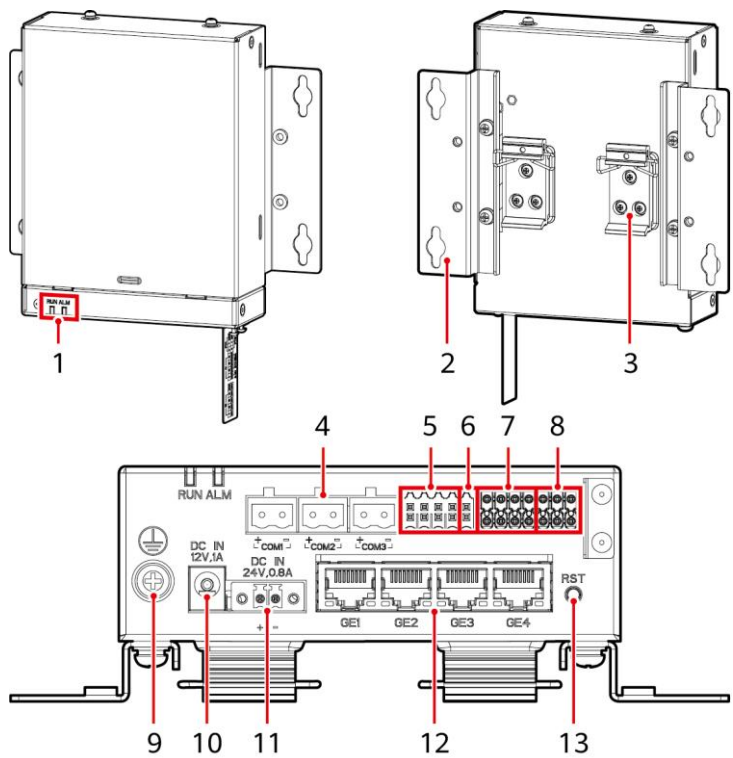
1 Product Overview

1. SmartLogger



- | | |
|--|--|
| (1) LED indicators (RUN, ALM, 4G) | (2) SIM card slot (SIM) |
| (3) Mounting ear | (4) Guide rail clamp |
| (5) MBUS port (MBUS) | (6) GE port (WAN) |
| (7) SFP ports (SFP1, SFP2) | (8) 4G antenna port (4G) |
| (9) RST button (RST) | (10) USB port (USB) |
| (11) GE port (LAN) | (12) DI ports (DI) |
| (13) 12 V output power port (12V/GND) | (14) AI ports (AI) |
| (15) DO ports (DO1, DO2) | (16) COM ports (COM1, COM2, COM3) |
| (17) 24 V input power port (DC IN 24V, 0.8A) | (18) 12 V input power port (DC IN 12V, 1A) |
| (19) Protective earthing (PE) point | |

2. SmartModule

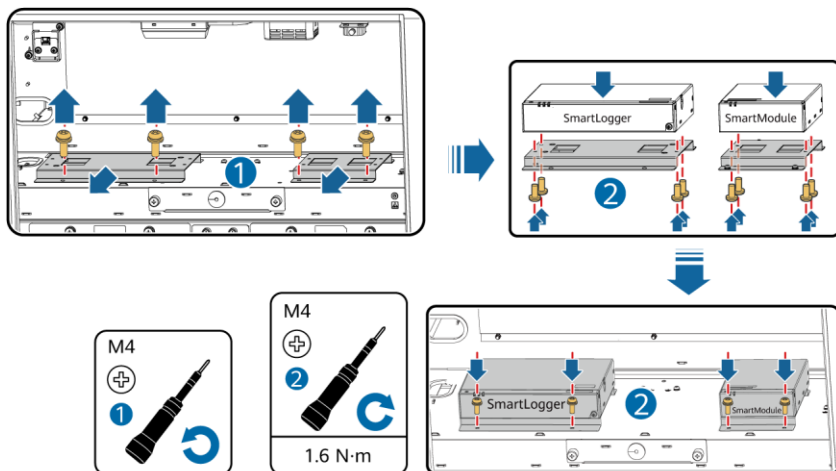


S000143

- | | |
|--|--|
| (1) LED indicators (RUN, ALM) | (2) Mounting ear |
| (3) Guide rail clamp | (4) COM ports (COM1, COM2, COM3) |
| (5) DI ports (DI) | (6) 12 V output power port (12V/GND) |
| (7) AI ports (AI) | (8) PT ports (PT1, PT2) |
| (9) PE point | (10) 12 V input power port (DC IN 12V, 1A) |
| (11) 24 V input power port (DC IN 24V, 0.8A) | (12) GE ports (GE1, GE2, GE3, GE4) |
| (13) RST button (RST) | |

2 Device Installation

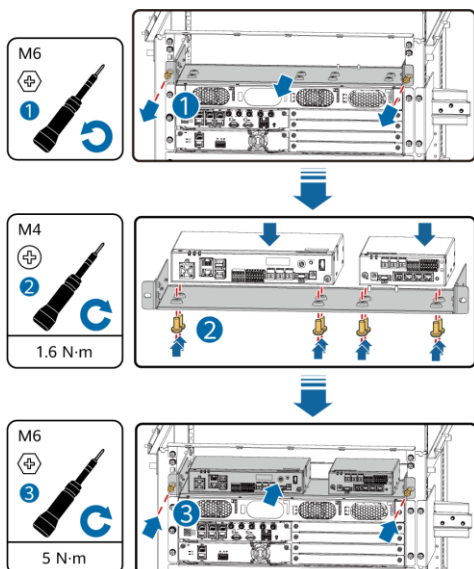
Installing the SmartLogger and SmartModule Behind the Main Control Front Door of the Non-Subrack-based Power Unit



P000018

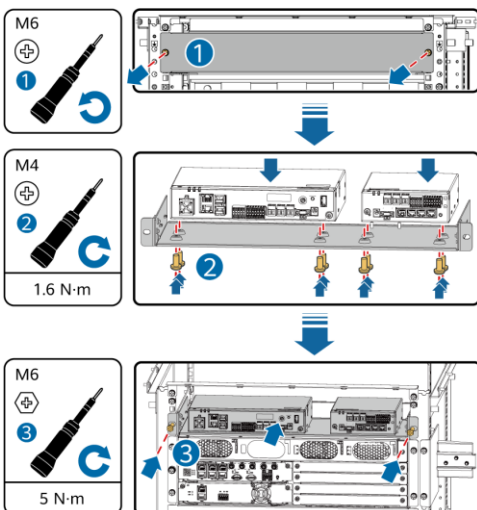
Installing the SmartLogger and SmartModule Behind the Main Control Front Door of the Subrack-based Power Unit

● Method 1



P002470

● Method 2



P003933

3 Electrical Connections

NOTICE

- Connect cables in accordance with the installation laws and regulations of the country or region where the project is located.
- Before connecting cables to ports, leave enough slack to reduce the tension on the cables and prevent poor cable connections.

3.1 Preparing cables

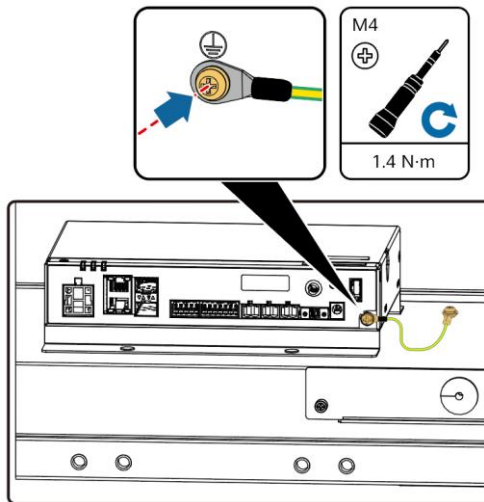
Type	Recommended Specifications
PE cable	Recommended cross-sectional area specifications (delivered with the product): • 4–6 mm² outdoor copper cable; • 12–10 AWG outdoor copper cable.
RS485 communications cable (SmartLogger)	Recommended cross-sectional area specifications (prepared by the customer): • 0.2–2.5 mm² two-core outdoor shielded cable; • 0.2–2.5 mm² multi-core outdoor shielded cable; • 24–14 AWG two-core outdoor shielded cable; • 24–14 AWG multi-core outdoor shielded cable.
12 V input power cable	/
Ethernet cable	Delivered with the product
MBUS terminal (optional for the SmartLogger)	Delivered with the product

3.2 Connecting the PE Cable

NOTE

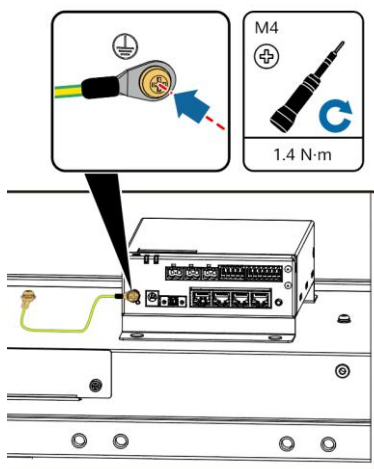
- To enhance the corrosion resistance of a ground terminal, you are advised to apply silicone grease or paint on it after connecting the PE cable.
- Connect a PE cable to the ground point of the SmartLogger or SmartModule as required.

Non-Subrack-based Power Unit



SmartLogger

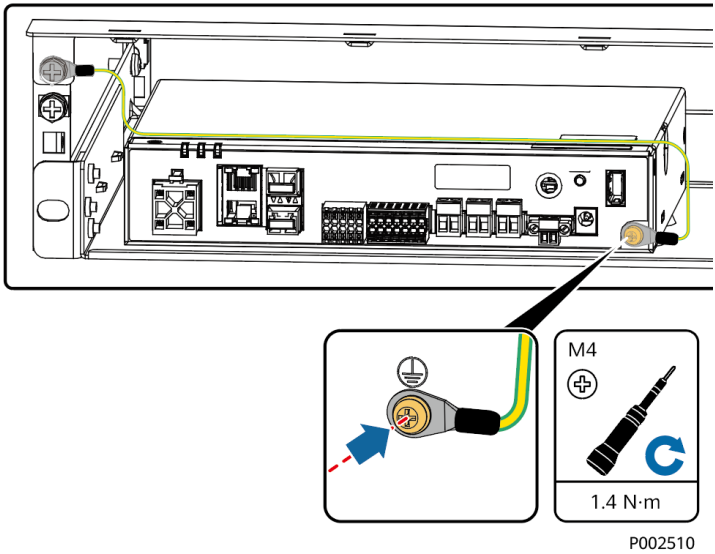
P002509



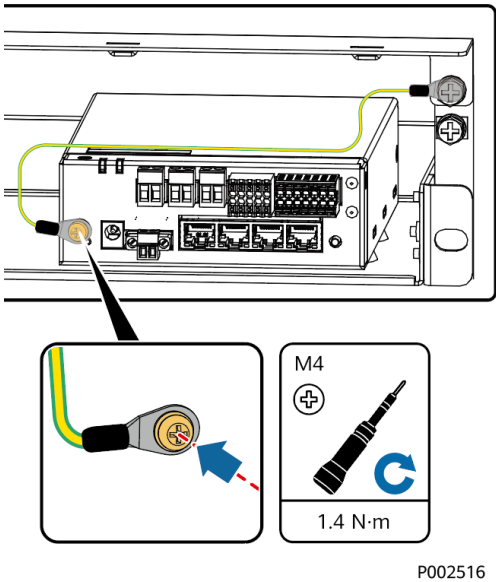
SmartModule

P002515

Subrack-based Power Unit



SmartLogger

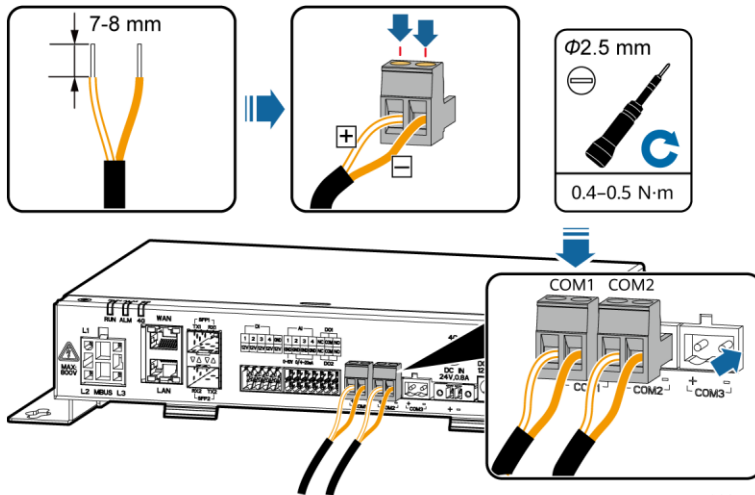


SmartModule

3.3 Connecting the RS485 Communications Cable

NOTE

- The recommended RS485 communication distance is less than or equal to 1000 m.
- The SmartLogger can connect to RS485 communications devices, such as a solar inverter, an environmental monitoring instrument (EMI), and a power meter over the COM port.
- Ensure that the RS485+ and RS485- terminals are respectively connected to the COM+ and COM- ports on the SmartLogger.

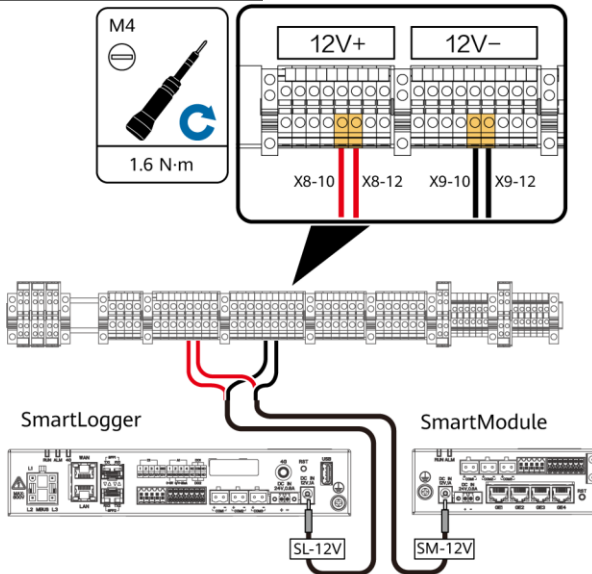


P002511

Port	Identifier	Description
COM1	+	Connects to Smart Power Sensor.
	-	
COM2	+	Connects to an inverter.
	-	

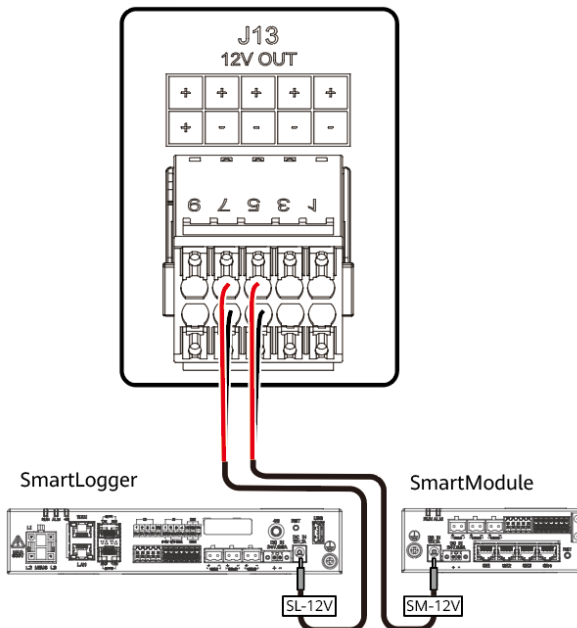
3.4 Connecting the 12 V Input Power Cable

Non-Subrack-based Power Unit



P002512

Subrack-based Power Unit



P002513

3.5 Connecting an Ethernet Cable

NOTE

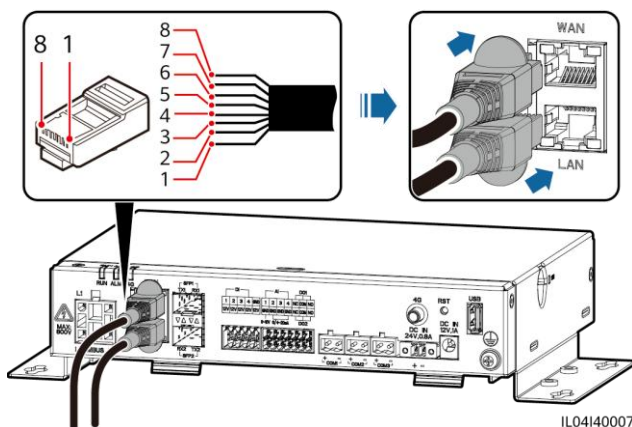
If the supplied network cable is too short, you are advised to prepare a network cable of CAT 5E or higher specifications and shielded RJ45 connectors. It is recommended that the cable length be less than or equal to 100 m. When crimping the network cable, ensure that the shielding layer of the cable is securely connected to the metal shell of the RJ45 connectors.

1. SmartLogger

NOTE

- The SmartLogger can connect to an Ethernet switch, router, or PC over a WAN port.
- The SmartLogger can connect to the SmartModule or a PC over a LAN port.

- (1) White-and-orange (2) Orange
(3) White-and-green (4) Blue
(5) White-and-blue (6) Green
(7) White-and-brown (8) Brown

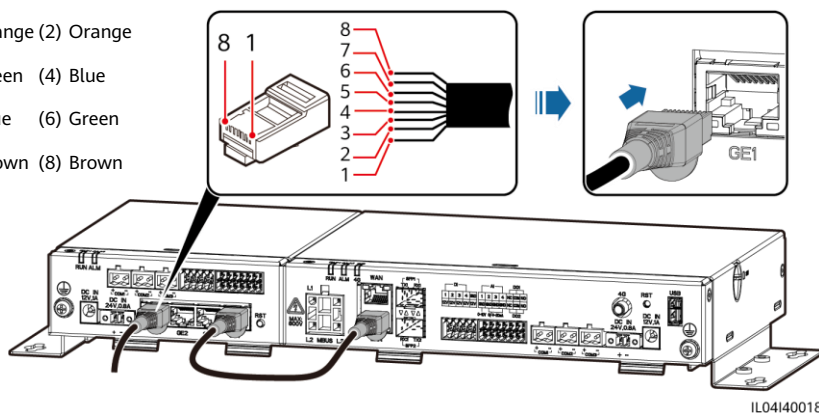


2. SmartModule

NOTE

- The SmartModule can connect to the SmartLogger and a PC over a GE port.
- The LAN port of the SmartLogger needs to be connected to a GE port of the SmartModule using an Ethernet cable.

- (1) White-and-orange (2) Orange
(3) White-and-green (4) Blue
(5) White-and-blue (6) Green
(7) White-and-brown (8) Brown

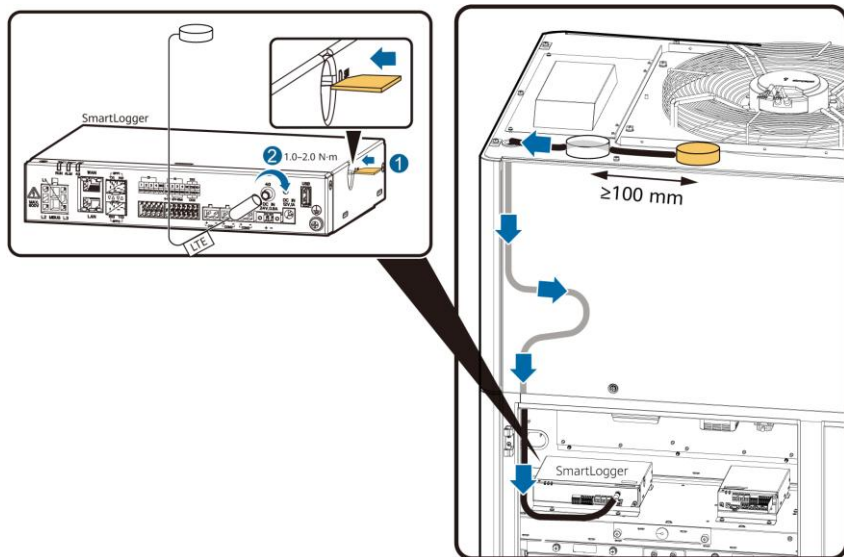


3.6 Installing a SIM Card and a 4G Antenna

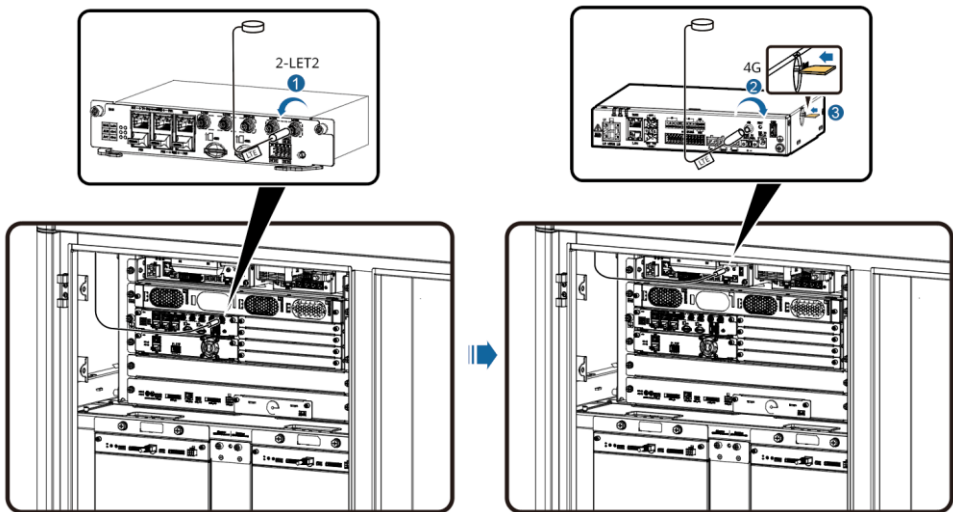
NOTE

- Prepare a standard SIM card (dimensions: 15 mm x 25 mm; capacity ≥ 64 KB).
 - Install the SIM card in the direction shown by the silkscreen on the SIM card slot.
 - Press the SIM card in place to lock it. In this case, the SIM card is correctly installed.
 - When removing the SIM card, push it inward to eject it.
1. Open the door of the heat exchange compartment of the power unit, remove the protective cover upward, and remove the sealing putty so that a cable can be routed into the electrical compartment through the cable box.
 2. Route the cable into the power unit through the cable hole on the top by referring to the cabling route of the original antenna. For a subrack-based power unit whose antenna cabling route has been preset, this operation is not required. You only need to remove the antenna from the 2-LET2 port.
 3. Connect the antenna labeled LTE to the 4G port on the SmartLogger.
 4. Seal the cable hole using sealing putty. For a subrack-based power unit whose antenna cabling route has been preset, this operation is not required.

Non-Subrack-based Power Unit



Subrack-based Power Unit



P002517

4 Check Before Power-On

No.	Criterion
1	The SmartLogger and SmartModule are installed correctly and securely.
2	All cables are connected securely.
3	Routing of the power cable and signal cable meets the requirements for routing electrical and ELV cables and complies with the cable routing plan.
4	Cables are bound neatly, and cable ties are secured evenly and properly in the same direction.
5	There are no unnecessary adhesive tapes or cable ties on cables.

5 Powering On the System

1. Connect to the power supply.

Check that the cables between the DC power supply and the SmartLogger and SmartModule are correctly connected. Then, turn on the upstream power switch of the DC power supply.

2. Observe the LED indicators to check the running status of the SmartLogger and SmartModule.

Station Controller	Indicator	Status		Meaning
SmartLogger	Running indicator (RUN)	Green off		The SmartLogger is not powered on.
		Blinking green slowly (on for 1s and then off for 1s)		The communication between the SmartLogger and the management system is normal.
		Blinking green fast (on for 0.125s and then off for 0.125s)		The communication between the SmartLogger and the management system is interrupted.
	Alarm/Maintenance indicator (ALM)	Alarm status	Red off	No system alarm is generated.
			Blinking red slowly (on for 1s and then off for 4s)	The system generates a warning alarm.
			Blinking red fast (on for 0.5s and then off for 0.5s)	The system generates a minor alarm.
			Steady red	The system generates a major alarm.
		Maintenance status	Green off	No local maintenance is in progress.
			Blinking green slowly (on for 1s and then off for 1s)	Local maintenance is in progress.
			Blinking green fast (on for 0.125s and then off for 0.125s)	Local maintenance fails or the SmartLogger is waiting to connect to the app.
			Steady green	Local maintenance is successful.
	4G indicator (4G)	Green off		The 4G/3G/2G networking function is not enabled.
		Blinking green slowly (on for 1s and then off for 1s)		The 4G/3G/2G dialup is successful.
		Blinking green fast (on for 0.125s and then off for 0.125s)		The 4G/3G/2G network is not connected or the communication is interrupted.
SmartModule	Running indicator (RUN)	Green off		The SmartModule is not powered on.
		Blinking green slowly (on for 1s and then off for 1s)		The communication with the SmartLogger is normal.
		Blinking green fast (on for 0.125s and then off for 0.125s)		The communication with the SmartLogger is interrupted.
	Alarm/Maintenance indicator (ALM)	Alarm status	Red off	No alarm is generated for the SmartModule.
			Blinking red slowly (on for 1s and then off for 4s)	The SmartModule enters the mode of ignoring digital certificate expiration.
			Blinking red fast (on for 0.5s and then off for 0.5s)	The SmartModule digital certificate is invalid.

 NOTE

If an alarm and local maintenance happen concurrently, the alarm/maintenance indicator shows the local maintenance state first. After local maintenance ends, the indicator shows the alarm state.

6 WebUI Deployment

 NOTE

The WebUI screenshots are for reference only.

1. Set the IP address for the PC on the same network segment as the SmartLogger IP address.

Port	IP Settings	SmartLogger Default Value	PC Setting Example
LAN port	IP address	192.168.8.10	192.168.8.11
	Subnet mask	255.255.255.0	255.255.255.0
	Default gateway	192.168.8.1	192.168.8.1
WAN port	IP address	192.168.0.10	192.168.0.11
	Subnet mask	255.255.255.0	255.255.255.0
	Default gateway	192.168.0.1	192.168.0.1

NOTE

- When the IP address of the WAN port is in the network segment from 192.168.0.1 to 192.168.0.255, set the default gateway to 192.168.0.1 and the IP address of the LAN port to 192.168.8.10. If the connected port is a LAN port, you need to adjust the network configuration of the PC.
- It is recommended that the PC be connected to the LAN port of the SmartLogger or the GE port of the SmartModule. When the PC is connected to the GE port of the SmartModule, change the network configuration of the PC in the same way as when the PC is connected to the LAN port of the SmartLogger.

- Enter **https://XX.XX.XX.XX** (IP address of the SmartLogger) in the address bar of your browser. If you are logging in to the WebUI for the first time, a security warning is displayed. Click **Continue to this website**.
- Select a desired language.
- If you log in to the WebUI for the first time, click **OK** in the dialog box that is displayed.
- Select a desired language, set a new password, and click **OK**. A message is displayed, indicating that the setting is successful.
- On the login page, select **Language** as required. Set the user name to **installer**, enter the password, and click **Log In**.

NOTE

- Ensure account security by changing the password periodically. Your password might be stolen or cracked if it is left unchanged for extended periods. If your password is lost, the device must be restored to its factory settings. The Company shall not be held liable for any loss resulting from improper password management.
- You will be locked out for 10 minutes after five failed password attempts in 5 minutes.
- A dialog box with recent login information is displayed after login. Click **OK**.
- Update the SmartLogger software as required. To update the SmartLogger software version, contact the Company's engineers to obtain the update package and guide and complete the update accordingly.

- On the **Deployment Wizard** page, set parameters as prompted. For details, see **Help** on the page.

NOTE

During parameter setting, click **Previous**, **Next**, or **Skip** as required.

- After the parameters are configured, click **Finish**.

7 FAQs

7.1 The SmartLogger Cannot Find Devices

1. Check the RS485 communications cable and AC power cable connections. If any cable is loose, disconnected, or reversely connected, rectify the connection.
2. Check the RS485 communications parameter settings. Ensure that the baud rate and communication address are set correctly and that the device address is within the search range of the SmartLogger.
3. Check whether the devices that do not support automatic identification, such as the EMI and power meter, have been manually added.
4. Check whether the devices connected to the SmartLogger are powered on.

7.2 The 4G Communication Is Abnormal

1. Check whether the SIM card is properly installed.
2. Check whether the SIM card is damaged or the charge is overdue.
3. Check whether the 4G antenna is tightened or damaged.
4. Check whether the management system parameters and wireless network parameters are set correctly.

7.3 The SmartLogger Cannot Communicate with the Management System

1. If a wired network is used, check whether the WAN port or SFP port of the SmartLogger is correctly connected.
2. If a wireless network is used, check whether the SIM card and antenna are correctly installed.
3. Check whether the parameters of the wired or wireless network are set correctly.
4. Check whether the management system parameters are correctly set.

7.4 How Do I Set Export Limitation Parameters

1. Log in to the WebUI and choose **Settings > Power Adjustment > Active Power Control > Export Limitation**.
2. Set corresponding parameters as prompted. For details, see **Help** on the page.

7.5 RST Button

Station Controller	Operation	Function
SmartLogger	Hold down the button for 1s to 3s.	When WLAN is set to OFF in idle state , hold down the RST button for 1s to 3s to power on the WLAN module and enable the WiFi function. The alarm/maintenance indicator (ALM) then blinks green quickly for 2 minutes (other indicators are off) and the DataLogger3K waits for connecting to the app. If the app is not connected, the WLAN module is automatically powered off and the WiFi function is disabled after the module is powered on for 4 hours.
	Hold down the button for more than 60s.	Within 3 minutes after the SmartLogger is powered on, hold down the RST button for more than 60s until all indicators are off and then wait until the RUN indicator is on. The SmartLogger restarts and restores its factory settings.
SmartModule	Hold down the button for 3s to 10s.	If the Communication using expired certificate function is disabled for the SmartLogger and the digital certificate of the SmartModule becomes invalid, after enabling the function, press the RST button for 3s to 10s to enable the SmartModule to enter the mode of ignoring digital certificate expiration and restore the communication with the SmartLogger. The alarm/maintenance indicator (ALM) blinks red slowly. After the digital certificate of the SmartModule is reloaded through the SmartLogger, the SmartModule communication can recover.
	Hold down the button for more than 60s.	Within 3 minutes after the SmartModule is powered on after power-off, hold down the RST button for more than 60s to restart the SmartModule and restore factory settings.

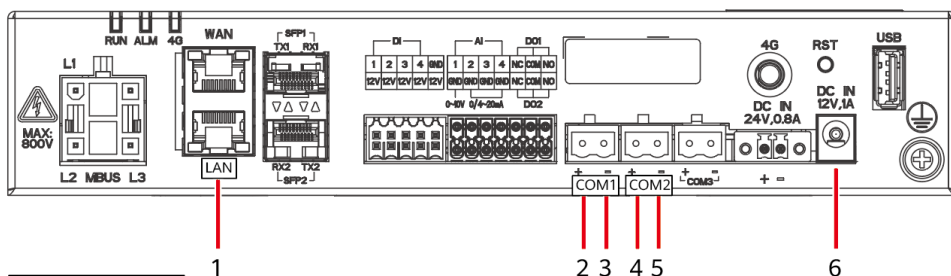
Appendix PV+ESS+Charger AC Cabling

NOTE

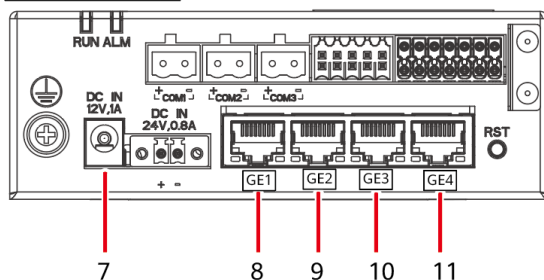
This appendix applies only to the AC PV+ESS+charger system. The actual cable connection depends on the site requirements.

1. Overview

SmartLogger



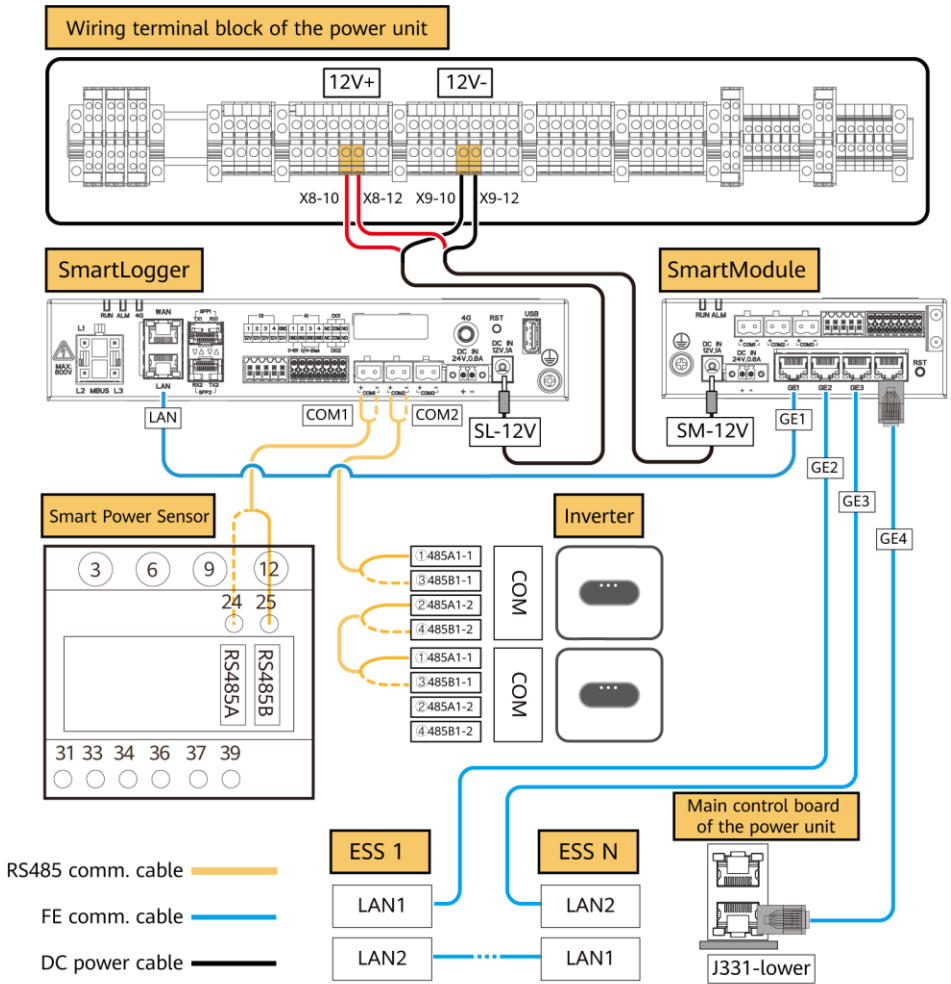
SmartModule



- | | | |
|------------|-----------|------------|
| (1) LAN | (2) COM1+ | (3) COM1- |
| (4) COM2+ | (5) COM2- | (6) SL-12V |
| (7) SM-12V | (8) GE1 | (9) GE2 |
| (10) GE3 | (11) GE4 | |

2. Port wiring

Non-Subrack-based Power Unit

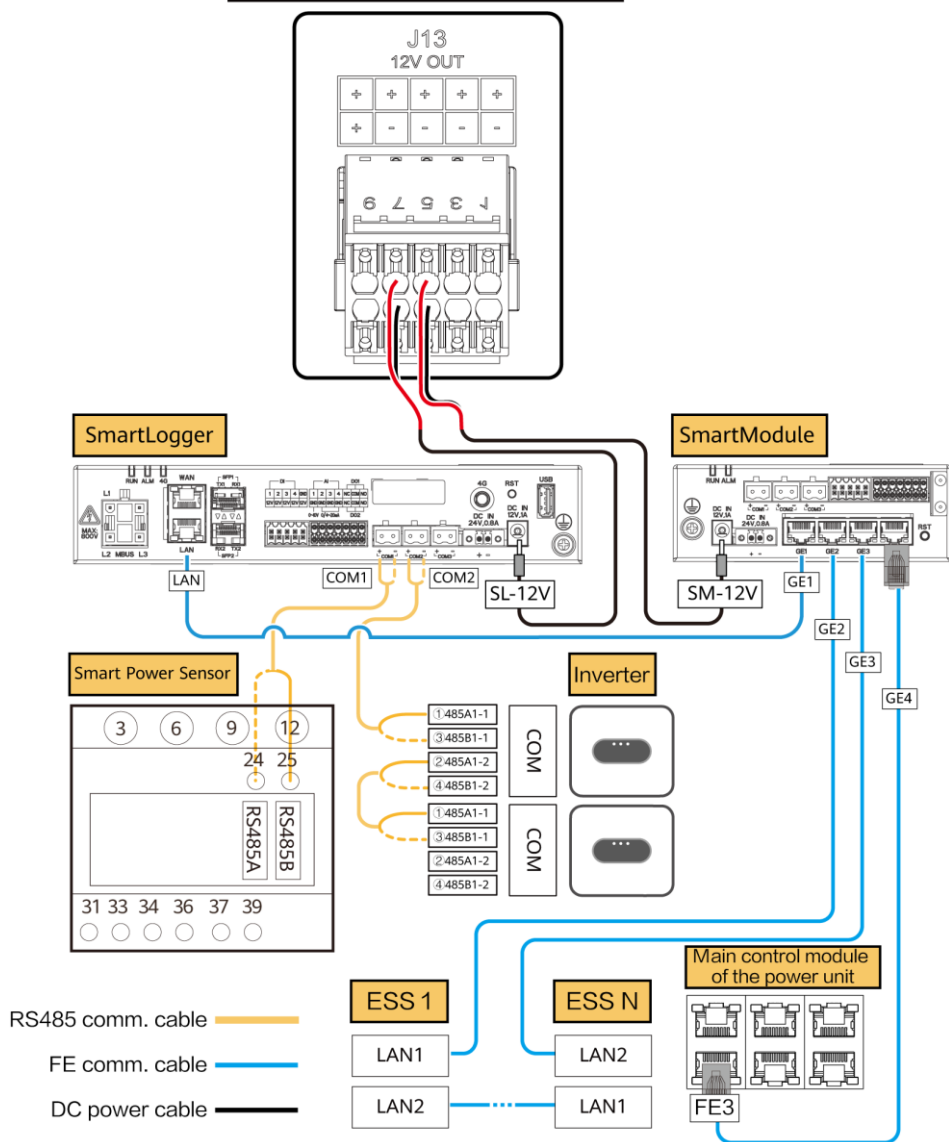


P002545

Comm. Cable Type	Product	Port	Port	Component
RS485 comm. cable	SmartLogger	COM1+	RS485A	Smart Power Sensor
		COM1-	RS485B	
		COM2+	① COM 485A1-1	Inverter
		COM2-	③ COM 485B1-1	
FE comm. cable	SmartModule	GE1	LAN	SmartLogger
		GE2	LAN1	ESS 1
		GE3	LAN2	ESS N
		GE4	J331-lower	Main control board of the power unit
DC power cable	SmartLogger	SL-12V	X8-10, X9-10	Wiring terminal block of the power unit
	SmartModule	SM-12V	X8-12, X9-12	Wiring terminal block of the power unit

Subrack-based Power Unit

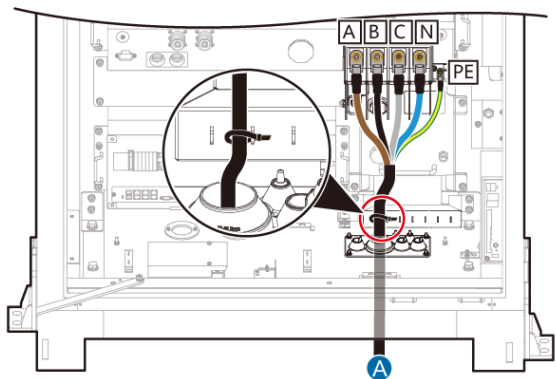
Wiring terminal block of the power unit



P002546

Comm. Cable Type	Product	Port	Port	Component
RS485 comm. cable	SmartLogger	COM1+	RS485A	Smart Power Sensor
		COM1-	RS485B	
		COM2+	① COM 485A1-1	Inverter
		COM2-	③ COM 485B1-1	
FE comm. cable	SmartModule	GE1	LAN	SmartLogger
		GE2	LAN1	ESS 1
		GE3	LAN2	ESS N
		GE4	FE3	Main control module of the power unit
DC power cable	SmartLogger	SL-12V	PIN 7, PIN 8	Wiring terminals of the power unit
	SmartModule	SM-12V	PIN 5, PIN 6	Wiring terminals of the power unit

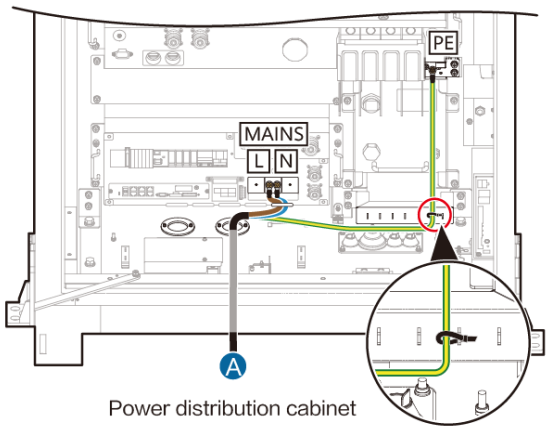
3. Installing PCS power cables for the ESS



Power distribution cabinet

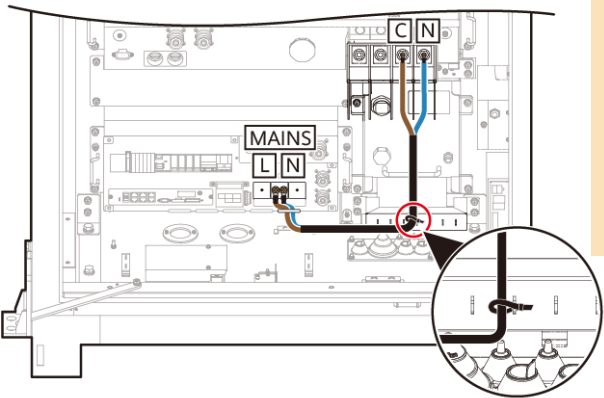
4. Installing auxiliary power supply cables for the ESS

Plan 1 (Recommended, powered by the mains)



Power distribution cabinet

Plan 2 (Obtaining electricity independently)

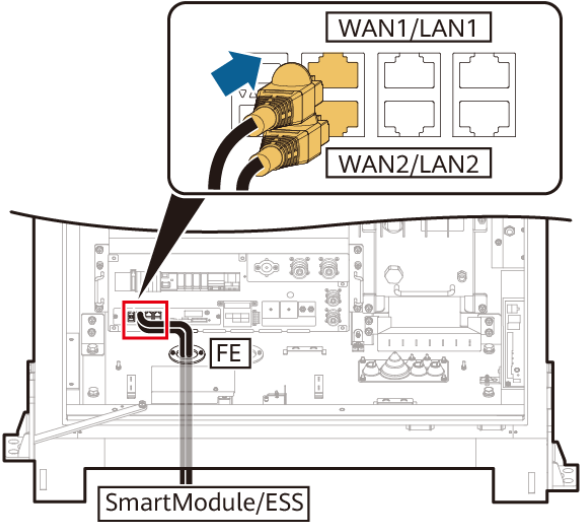


(The cable length from the ESS to the AC power distribution cabinet shall be greater than or equal to 5 m.)

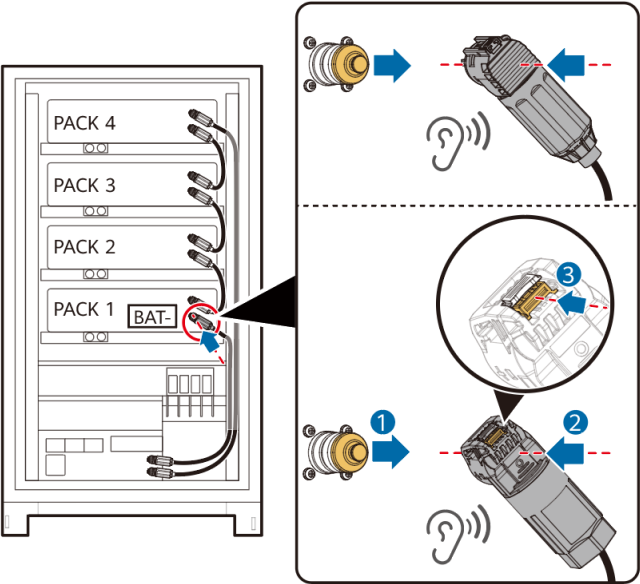
NOTE

Note: If solution 2 is used, the three-phase imbalance detection of the circuit breaker shall be set to ≥ 22 A. Otherwise, the ESS circuit breaker will trip.

5. Installing FE communications cables for the ESS

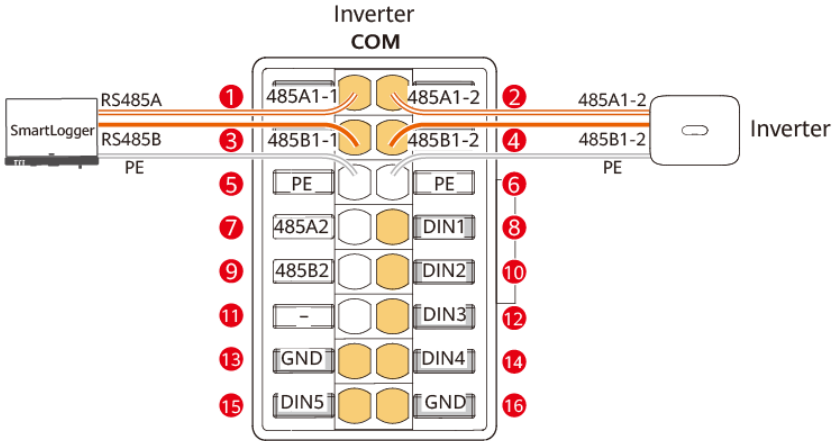


6. Installing battery pack cables for the ESS



7. Installing inverter signal cables

Inverter terminals



Customer Service Contact Information



<https://digitalpower.huawei.com>

Path: **About Us > Contact Us > Service Hotlines**

