

# SmartLogger1000A

## Quick Guide

Issue: 04

Part Number: 31500AFG

Date: 2020-09-30

**HUAWEI TECHNOLOGIES CO., LTD.**

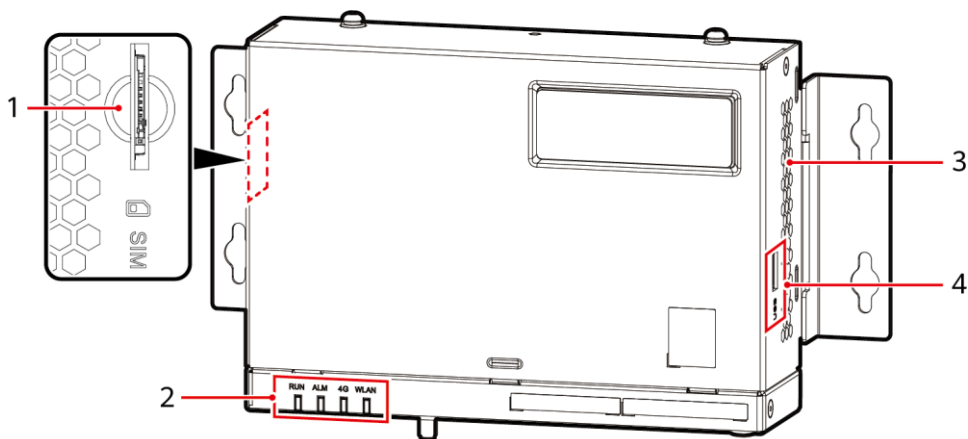


## NOTICE

1. The information in this document is subject to change due to version upgrades or other reasons. 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.
2. Before installing the device, read the *SmartLogger1000A User Manual* carefully to get familiar with product information and safety precautions. In the following text, SmartLogger1000A is abbreviated as SmartLogger.
3. Install and use the device according to this document and the user manual. Otherwise, the device may be damaged.

# 1 Overview

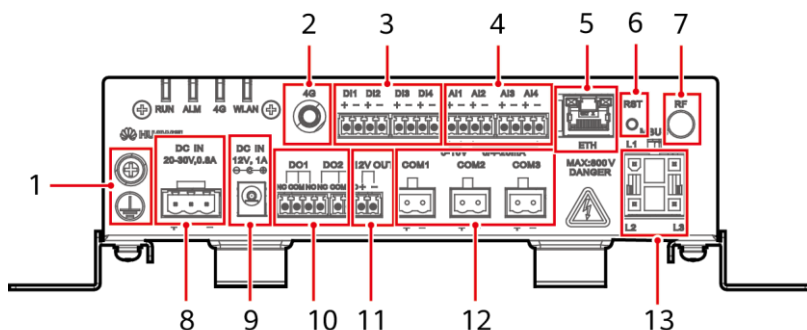
## Front View




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No.	Port (Silk Screen)	Function
1	SIM	SIM card slot
2	RUN, ALM, 4G, WLAN	LED indicators
3	N/A	Heat dissipation hole
4	USB	USB port

## Bottom View

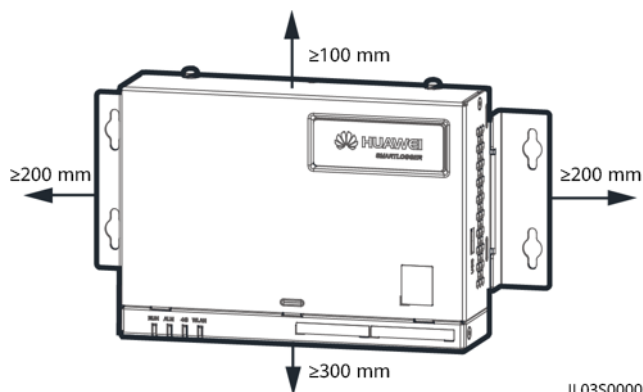


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No.	Port (Silk Screen)	Function
1		External grounding
2	4G	4G antenna
3	DI1-DI4	Digital input
4	AI1-AI4	Analog input
5	ETH	Ethernet electrical port
6	RST	<ul style="list-style-type: none"> <li>To restart the WLAN, hold down the button for 3s to 10s.</li> <li>To restore to the default IP address (192.168.0.10, valid within 5 minutes), hold down the button for more than 10s.</li> </ul>
7	RF	Reserved
8	DC IN 20-30V, 0.8A	20-30 V DC input
9	DC IN 12V, 1A	12 V power input
10	DO1-DO2	Digital output
11	12V OUT	12 V power output
12	COM1-COM3	RS485 communication
13	MBUS	MBUS port

## 2 Installing a SmartLogger

### 2.1 Installation Space



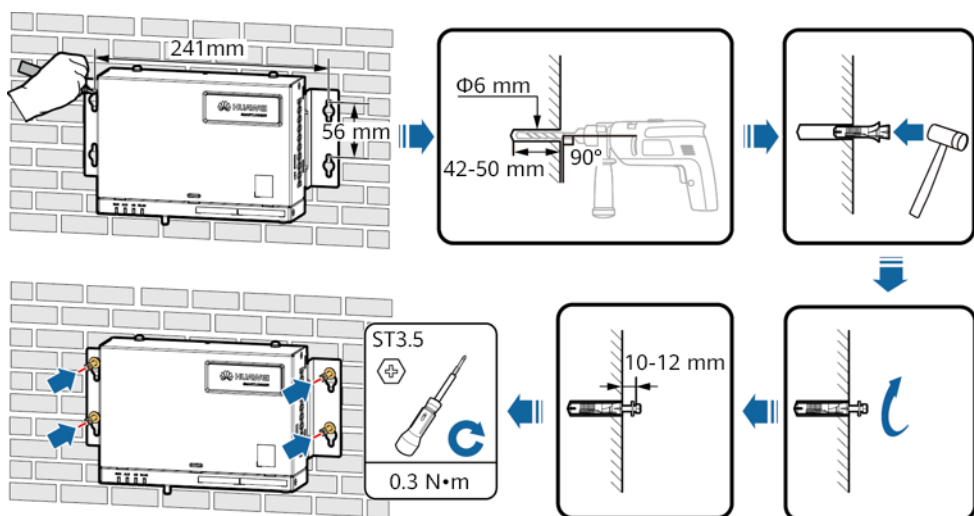
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### 2.2 Installing a SmartLogger

#### Wall-Mounted Installation

##### NOTICE

1. The weight of the SmartLogger is about 2 kg. Install it on a flat and secure wall.
2. When wall-mounting the SmartLogger, ensure that the cable connection area faces downwards for ease of cable connection and maintenance.

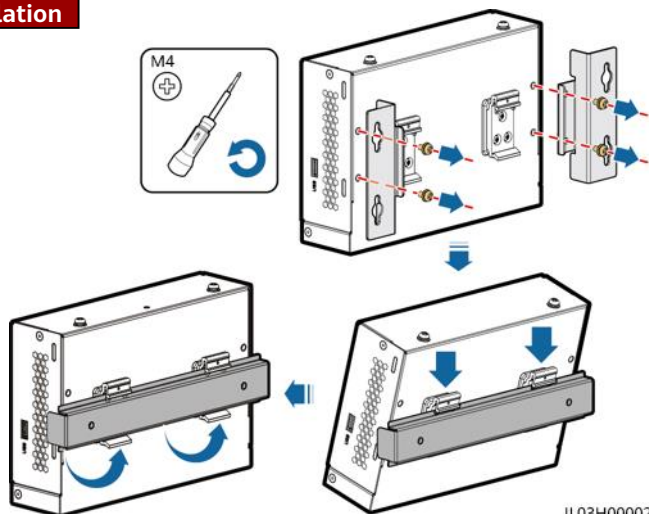


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## Guide Rail-Mounted Installation

### NOTE

1. Before installing the SmartLogger, prepare a standard 35 mm guide rail and secure it.
2. Ensure that the length of the guide rail is sufficient for securing the SmartLogger. The recommended length is 200 mm or greater.



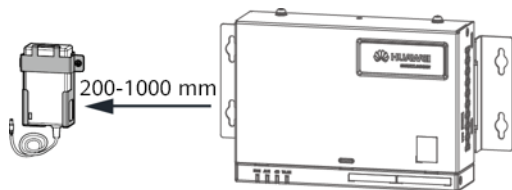
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## 3 Installing a Power Adapter

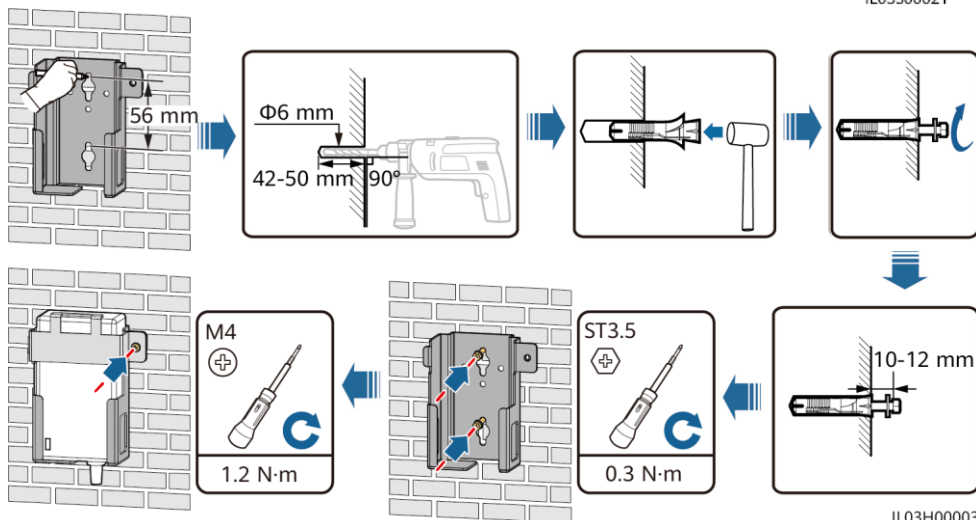
### Wall-Mounted Installation

### NOTE

It is recommended that the power adapter be installed on the left side of the SmartLogger. Keep the AC power cable port upward.



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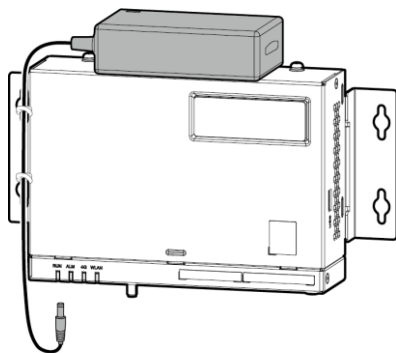


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## Flat Surface-Mounted Installation

### NOTE

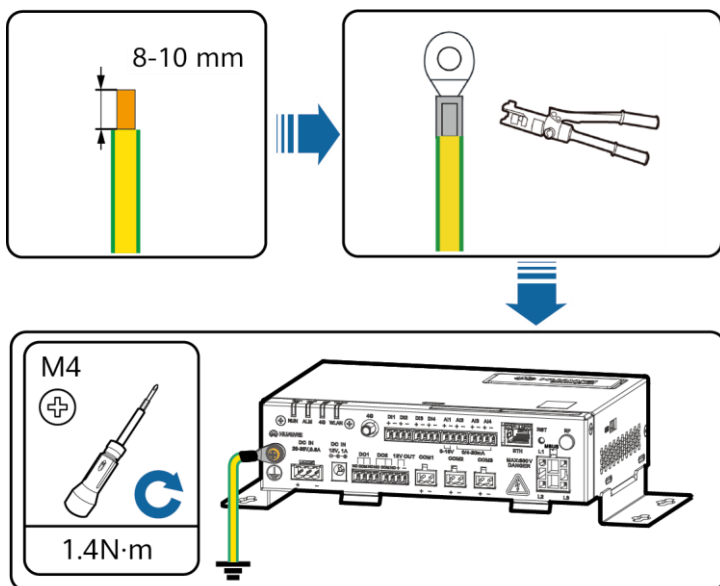
Ensure that the power adapter indicator faces upward or outward.



## 4 Preparing Cables

Type	Recommended Specifications
PE cable	Outdoor copper-core cable with a cross-sectional area of 4–6 mm <sup>2</sup> or 12–10 AWG
RS485 communications cable	Two-core or multi-core cable with a cross-sectional area of 1.5 mm <sup>2</sup> or 20 AWG
AI, DI, and DO cables	Two-core or multi-core cable with a cross-sectional area of 1.5 mm <sup>2</sup> or 20 AWG
MBUS (optional)	Supplied with the SmartLogger
Ethernet cable	Supplied with the SmartLogger
Power cable (optional)	Two-core cable with a cross-sectional area of 1.5 mm <sup>2</sup> or 20 AWG

## 5 Installing a PE Cable



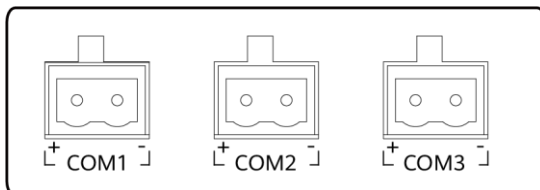
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## 6 Connecting an RS485 Communications Cable

### NOTE

1. It is recommended that the RS485 communication distance be less than or equal to 1000 m.
2. The SmartLogger can connect to RS485 communications devices, such as an inverter, an EMI, and a power meter.
3. Ensure that the RS485+ and RS485- terminals are respectively connected to the COM+ and COM- ports on the SmartLogger.

### Port Definition



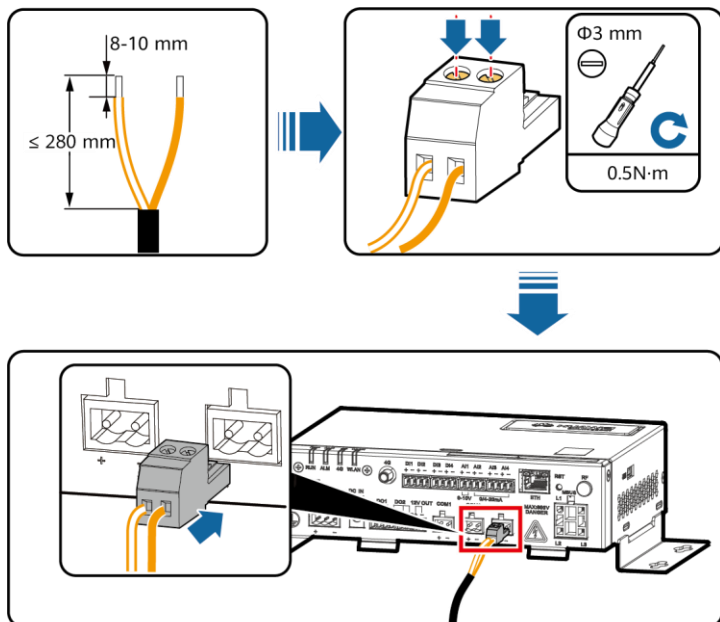
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Port	Identifier	Function
COM1-COM3	+	RS485A, RS485 differential signal+
	-	RS485B, RS485 differential signal-

### Cable Connection

### NOTE

The ports of COM1-COM3 can connect to RS485 communications devices.

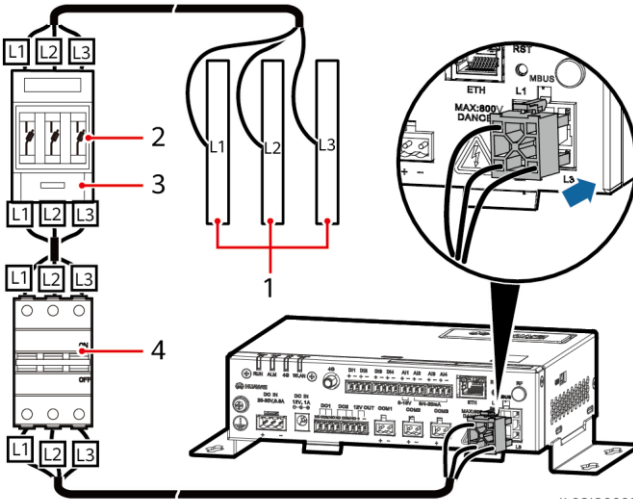


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## 7 Connecting an MBUS

### NOTE

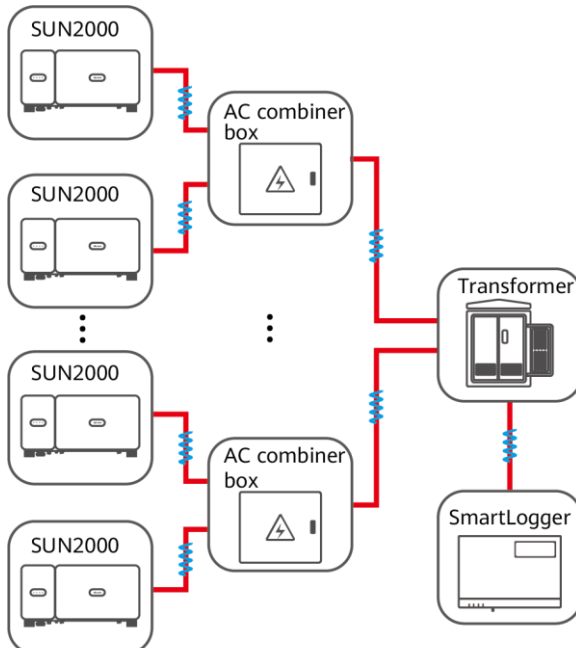
1. Ensure that the SUN2000 and SmartLogger are equipped with the MBUS module.
2. If the SmartLogger is connected to the SUN2000 through an MBUS, no RS485 communications cable needs to be connected.
3. If the SmartLogger communicates through an MBUS, a miniature circuit breaker (MCB) or knife fuse switch needs to be installed to prevent device damage in the case of short circuits.



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- (1) Busbars L1, L2, and L3
- (2) Fuse
- (3) Knife fuse switch
- (4) MCB

### Networking Diagram



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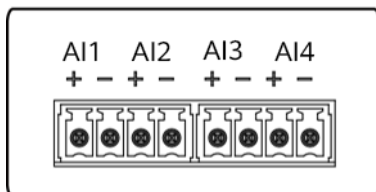


## 8 Connecting an AI Communications Cable

### NOTE

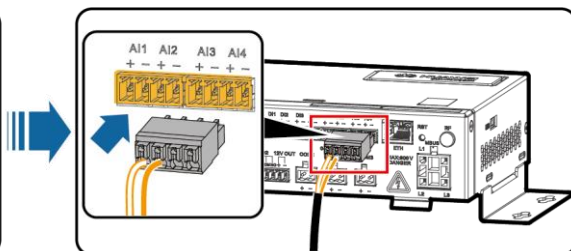
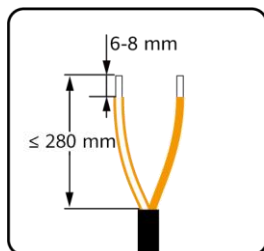
1. It is recommended that the transmission distance of AI signals be less than or equal to 10 m.
2. The SmartLogger can receive AI signals from sensors and EMI through AI ports.

### Port Definition



Port	Description
AI1	Supports 0–10 V input voltage
AI2–AI4	Supports 4–20 mA or 0–20 mA input current

### Cable Connection

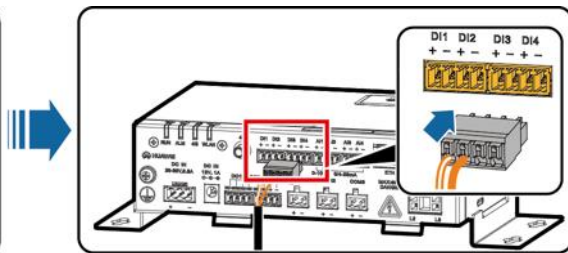
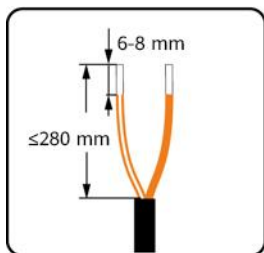


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## 9 Connecting a DI Communications Cable

### NOTE

1. It is recommended that the transmission distance of DI signals be less than or equal to 10 m.
2. The SmartLogger can receive signals including remote commands and alarms through the DI port. It can only receive passive dry contact signals.

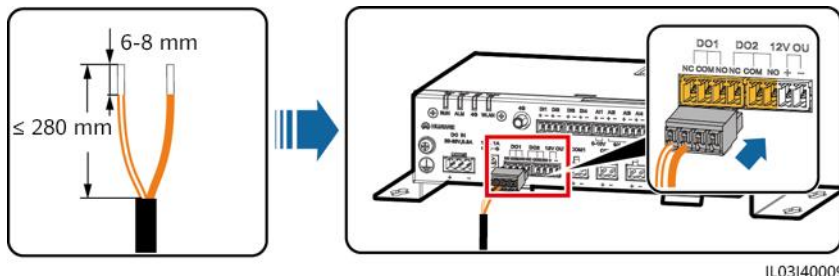


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## 10 Connecting a DO Communications Cable

### NOTE

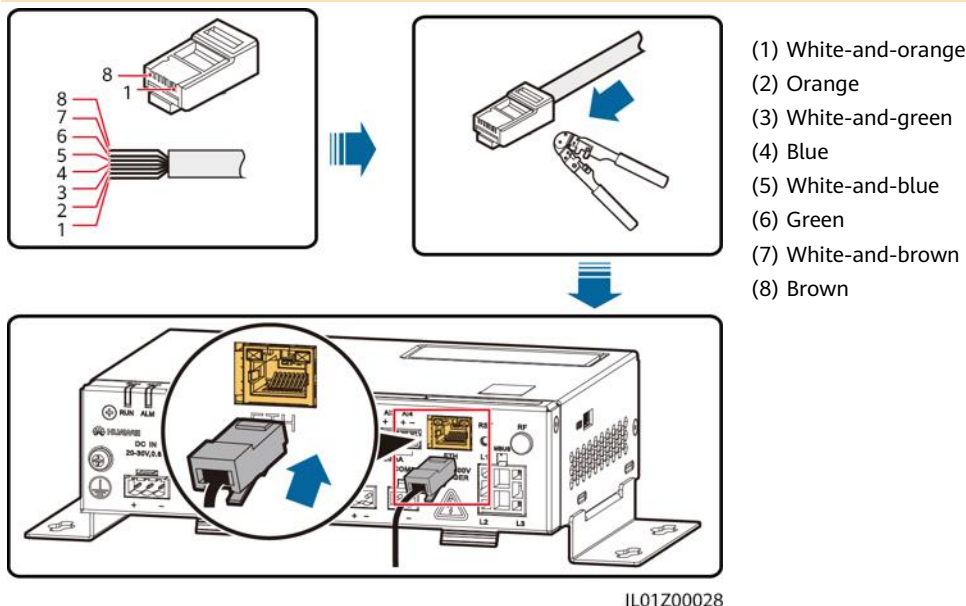
1. It is recommended that the transmission distance of DO signals be less than or equal to 10 m.
2. The DO port supports a maximum of 12 V signal voltage. NC and COM are normally closed contacts, while NO and COM are normally open contacts.



## 11 Connecting an Ethernet Cable

### NOTE

1. The SmartLogger can connect to Ethernet switches, routers, and computers through ETH ports.
2. If the network cable supplied with the SmartLogger is too short, prepare a CAT 5E network cable or a network cable of higher specifications. It is recommended that the cable length be less than or equal to 100 m.

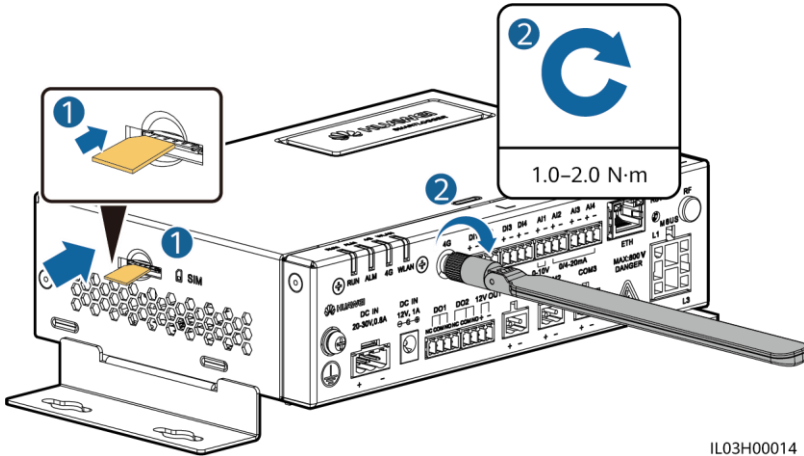


## 12 Installing a SIM Card and 4G Antenna

### NOTE

1. Prepare a standard SIM card (size: 15 mm x 25 mm, capacity  $\geq 64$  kB).
2. Install the SIM card in the direction shown by the silk screen and arrow on the slot.
3. Press the SIM card in place to lock it. In this way, the SIM card is correctly installed.
4. When removing the SIM card, push it inwards to eject it.

Monthly Traffic Requirement of SIM Cards		Traffic Baseline
Inverter	10 MB + 4 MB x Number of inverters	Supports the followings: <ul style="list-style-type: none"> <li>• Update device performance data every 5 minutes.</li> <li>• Upgrade the inverter, and export inverter logs and IV diagnosis data once a month.</li> </ul>
Power meter	3 MB x Number of power meters	
EMI	3 MB x Number of EMIs	



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## 13 Check Before Power-On

No.	Check Criterion
1	The SmartLogger is installed correctly and securely.
2	All cables are securely connected.
3	Routing of the power cables and signal cables meets the requirements for routing strong-current and weak-current 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 is no unnecessary adhesive tape or cable tie on cables.

# 14 Powering On the System

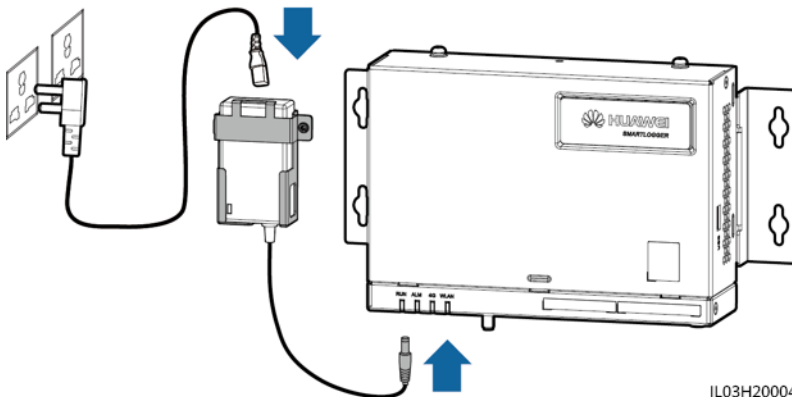
## 14.1 Power-On

1. Connect the input power cable.

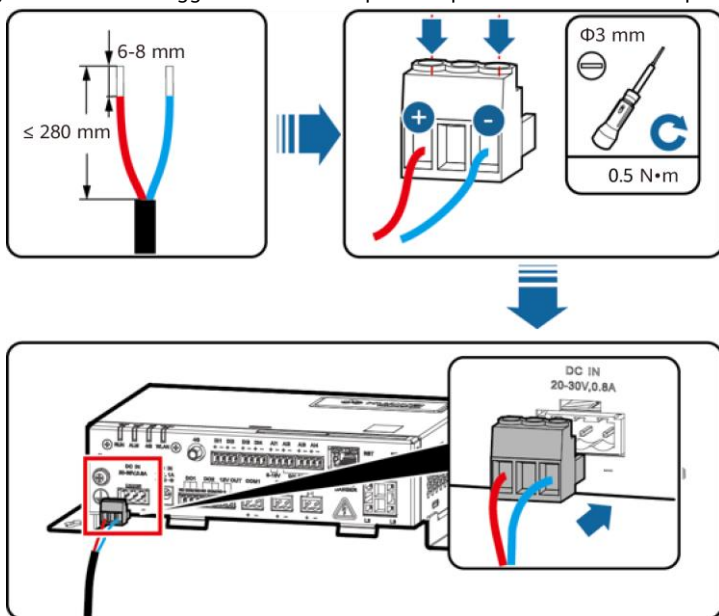
- Method 1: When the power adapter is used, connect the power adapter cable and turn on the switch on the AC socket side.

### NOTE

1. The rated input voltage of the power adapter is 100–240 V AC, and the rated input frequency is 50/60 Hz.
2. Select an AC socket that matches the power adapter.



- Method 2: When the DC power supply is used, connect the cable between the DC power supply and the SmartLogger. Turn on the upstream power switch of the DC power supply.



2. When MBUS is used, turn on all the upstream switch of the AC power cable.

## 14.2 LED Indicator Definition (Left to Right)

Indicator (Silk Screen)	Status		Definition
Running indicator (RUN)	Off		The SmartLogger is not powered on.
	Blinking green at short intervals (on for 0.2s and then off for 0.2s)		The management system is not registered or the communication is interrupted.
	Blinking green at long intervals (on for 1s and then off for 1s)		The management system is properly connected.
Alarm/Maintenance indicator (ALM) <sup>a</sup>	Maintenance status	Off	No local maintenance is in progress. <sup>b</sup>
		Blinking green at short intervals (on for 0.2s and then off for 0.2s)	Local maintenance failed.
		Blinking green at long intervals (on for 1s and then off for 1s)	Local maintenance is in progress.
		Steady green	Local maintenance succeeded.
	Alarm status	Off	No system alarm is generated.
		Blinking red at short intervals (on for 0.5s and then off for 0.5s)	A minor alarm is generated.
		Blinking red at long intervals (on for 1s and then off for 4s)	A warning is generated.
		Steady red	A major alarm is generated.
4G/3G/2G indicator (4G)	Blinking green at short intervals (on for 0.2s and then off for 0.2s)		The 4G/3G/2G card is not registered or the communication is interrupted.
	Blinking green at long intervals (on for 1s and then off for 1s)		The 4G/3G/2G dialup succeeded.
WLAN indicator (WLAN)	Off		No mobile phone is connected.
	Blinking green at long intervals (on for 1s and then off for 1s)		The mobile phone is registered successfully.

### NOTE

- When both an alarm and local maintenance occur at the same time, the alarm/maintenance indicator preferentially indicates the local maintenance status. It displays the alarm only after the USB flash drive is removed.
- Local maintenance refers to operations performed by connecting a USB flash drive to the SmartLogger USB port, such as software upgrade or data export using the USB flash drive.

# 15 Commissioning Through Deployment Wizard (WebUI)

## NOTE

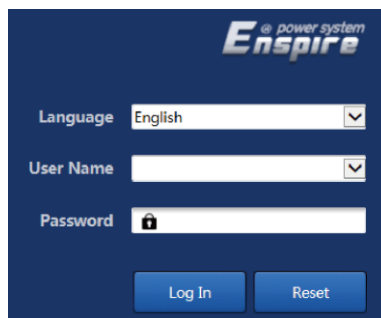
1. Operating system: Windows 7 or later versions
2. Browser: Chrome 52, Firefox 58, Internet Explorer 9, or their later versions
3. The WebUI snapshots are for reference only, and the actual display prevails.

1. Set the IP address for the SmartLogger in the same network segment as the computer IP address.

IP Setting	SmartLogger Default Value	Computer Setting Example
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

2. Enter **https://XX.XX.XX.XX** in the address box of the browser (XX.XX.XX.XX is the IP address of the SmartLogger). If you log in to the WebUI for the first time, a security risk warning is displayed. Click **Continue to this website**.

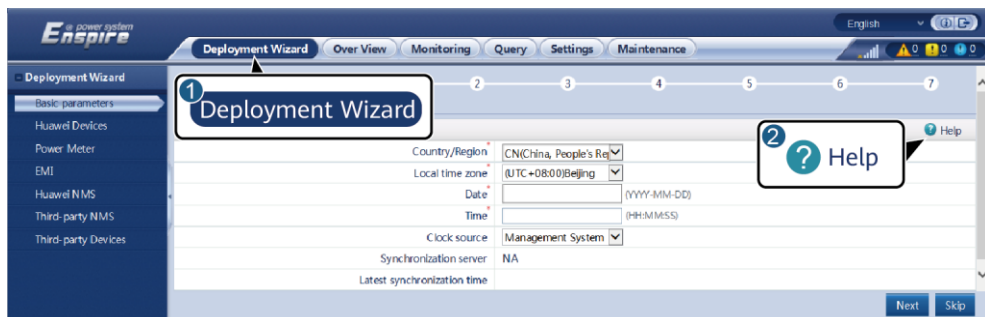
3. Select **Advanced User** or **Special User**.



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Parameter	Description
Language	Set it based on the site requirements.
User name	To commission the device, select <b>Advanced User</b> or <b>Special User</b> .
Password	<ul style="list-style-type: none"><li>• The initial password is <b>Changeme</b>.</li><li>• Use the initial password upon first power-on and change it immediately after login. To ensure account security, change the password periodically and keep the new password in mind. Not changing the initial password may cause password disclosure. A password left unchanged for a long period of time may be stolen or cracked. If a password is lost, devices cannot be accessed. In these cases, the user is liable for any loss caused to the PV plant.</li><li>• If you enter wrong passwords for five consecutive times within 5 minutes, your account will be locked out. Try again 10 minutes later.</li></ul>

4. Click **Help** and set parameters as prompted.



5. After the parameter configuration is complete, click **Finish**.

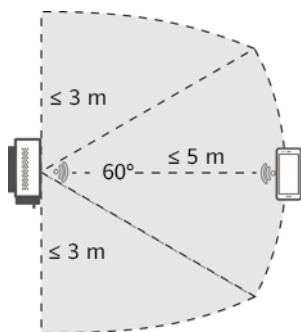
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## 16 Connecting the SUN2000 App

### NOTE

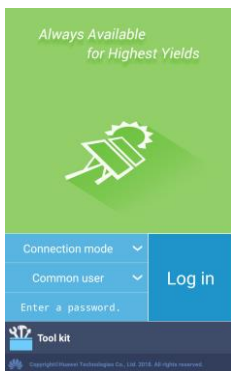
1. The SUN2000 app is an app that communicates with the SmartLogger through the WLAN. As a convenient local monitoring and maintenance platform, it provides functions such as alarm query, parameter settings, and routine maintenance. The app is named SUN2000.
2. Requirements for the mobile phone operating system: Android 4.0 or later.
3. Access the Huawei App Store (<http://appstore.huawei.com>) or Google Play (<https://play.google.com>), search **SUN2000**, and download the app installation package.

### WLAN Connection Range

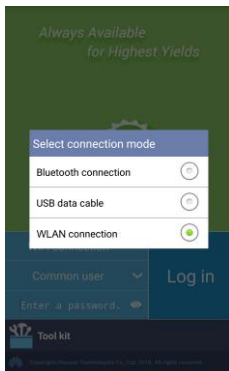


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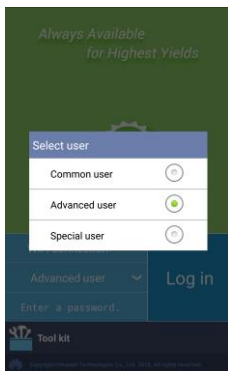
### Login Page



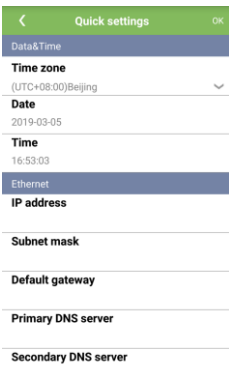
### WLAN Connection



### Select User



### Quick Settings



### Home



### NOTE

- The screenshots in this document correspond to app version 2.2.00.032 (Android).
- The initial WLAN name of the SmartLogger is **Logger\_SN** and the initial password is **Changeme**. The **SN** can be obtained from the SmartLogger label.
- The initial password for **Common user**, **Advanced user**, and **Special user** is **00000a**.
- Use the initial password upon first power-on and change it immediately after login. To ensure account security, change the password periodically and keep the new password in mind. Not changing the initial password may cause password disclosure. A password left unchanged for a long period of time may be stolen or cracked. If a password is lost, devices cannot be accessed. In these cases, the user is liable for any loss caused to the PV plant.

## 17 FAQ

### 17.1 The SmartLogger Cannot Be Powered On

1. Check whether the DC output power cable for the power adapter is connected to the 12V 1A port on the SmartLogger.
2. Check whether the power cable is connected to the power adapter.
3. Check whether the power cable is connected to the AC socket.
4. Check whether the power adapter is faulty.
5. Contact the vendor or Huawei technical support.

### 17.2 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, reconnect it securely and correctly.
2. Check the RS485 communications parameter settings. Ensure that the baud rate and communication address are set correctly and that the inverter address is within the search address 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 connected device is powered on.
5. Contact the vendor or Huawei technical support.

### 17.3 The 4G Communication Is Abnormal

1. Check whether the SIM card is properly installed.
2. Check whether the SIM card is damaged or whether 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.
5. Contact the vendor or Huawei technical support.

### 17.4 The SmartLogger Cannot Communicate with the Management System

1. Check whether the Ethernet electrical port or optical port of the SmartLogger correctly connects to a PC or router.
2. Check whether the wired or wireless network parameters are set correctly.
3. Check whether the management system parameters are set correctly.
4. Contact the vendor or Huawei technical support.

### 17.5 How Do I Set Export Limitation Parameters

1. Log in as **Special User** and choose **Settings > Export Limitation**.
2. Set parameters as prompted. For details, click **Help** on the page.



