

**SUN2000-(12KTL-25KTL)-M5 Series**

# **Quick Guide**

**Issue: 03**

**Part Number: 31500HLD**

**Date: 2023-02-15**

**Huawei Digital Power Technologies Co., Ltd.**

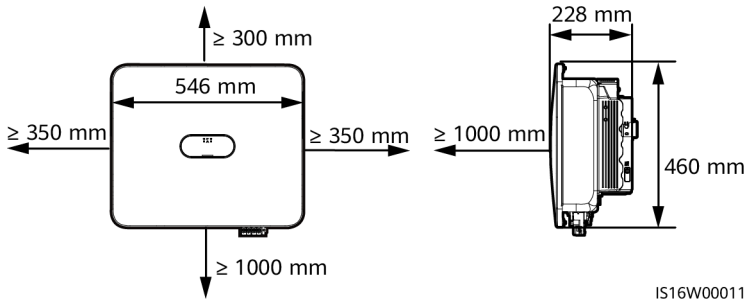


## NOTICE

- The information in this document is subject to change due to version upgrade 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.
- Only qualified and trained electrical technicians are allowed to operate the device. Operation personnel should understand the system composition and working principles, as well as the local regulations.
- Before installing the device, read the user manual carefully to get familiar with product information and safety precautions. Device damage caused by failure to abide by the storage, transportation, installation, and operation guidelines specified in this document and the user manual is not covered by the product warranty.
- Before installing the device, check that the package contents are intact and complete against the packing list. If any damage is found or any component is missing, contact your dealer.
- Use insulated tools and wear proper personal protective equipment (PPE) when installing the device.

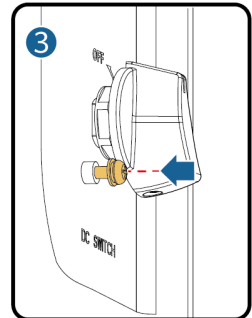
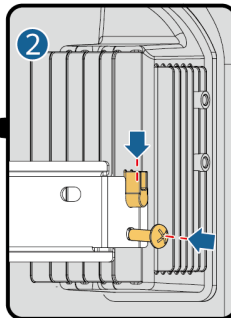
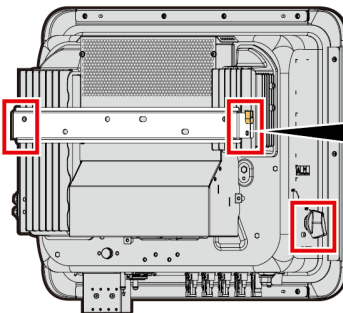
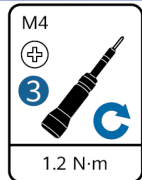
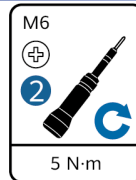
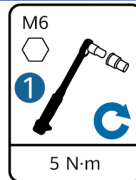
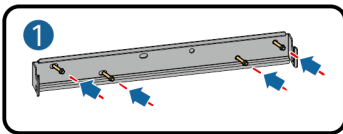
## 1 Clearance Requirements

If the installation clearance does not meet the requirements, the inverter power may be derated.



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## 2 Device Installation



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## NOTICE

If cables are not connected immediately after the device is installed, you need to install a junction box. Otherwise, the airtightness and waterproof performance of the device may be affected.

## 3 Electrical Connections

### 3.1 Preparations

#### ⚠ DANGER

- Do not connect the neutral wire to the enclosure as a ground cable. Otherwise, electric shocks may occur.
- Before connecting cables, ensure that the DC SWITCH on the inverter and all the switches connected to the inverter are set to OFF. Otherwise, the high voltage of the inverter may result in electric shocks.

#### ⚠ WARNING

- Do not connect loads between the inverter and the AC switch that directly connects to the inverter. Otherwise, the switch may trip by mistake.
- If an AC switch is used with specifications beyond local standards, regulations, or Huawei's recommendations, the switch may fail to turn off in a timely manner in case of exceptions, causing serious faults.

#### ⚠ CAUTION

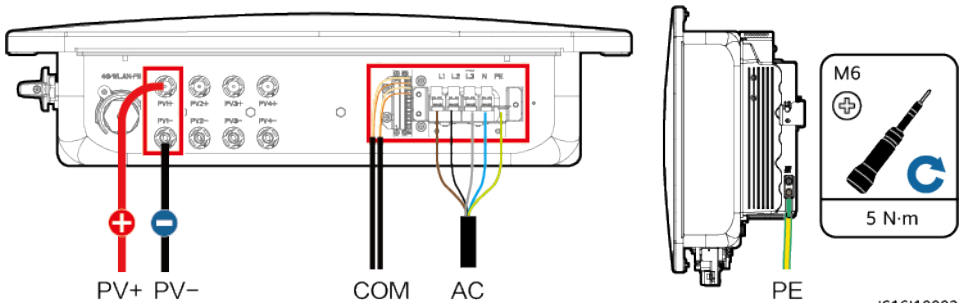
Each inverter must be equipped with an AC output switch. Multiple inverters cannot connect to the same AC output switch.

#### NOTICE

- To ensure that the inverter can be safely disconnected from the power grid when an exception occurs, connect an AC switch to the AC side of the inverter. Select an appropriate AC switch in accordance with local industry standards and regulations.
- Connect cables in accordance with local installation laws and regulations.
- The cable colors are for reference only. Select appropriate cables according to the local standards.
- When routing signal cables, separate them from power cables and keep them away from strong interference sources to prevent communication from being affected.

No.	Component	Description	Source
1	AC switch	Recommended: three-phase AC circuit breaker	Rated voltage $\geq 415$ V AC Rated current: <ul style="list-style-type: none"><li>• 12KTL–20KTL: 40 A</li><li>• 25KTL: 50 A or 63 A</li></ul>




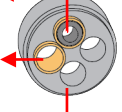
### 3.2 Cable Connections

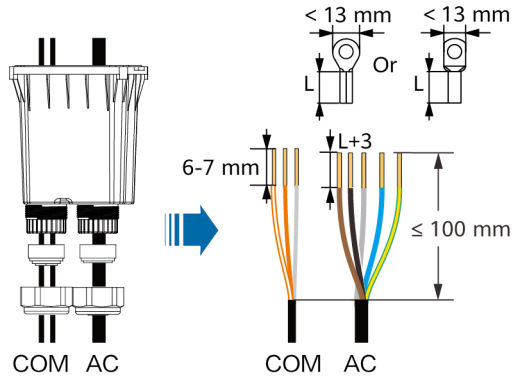


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### 3.3 Installing AC Output Power Cables and Signal Cables

1. Route the cables through the junction box and prepare cable terminals.

Inner Diameter	Rubber Plug
15 mm	
22 mm	
26 mm	
6 mm	
8.6 mm	
11 mm	

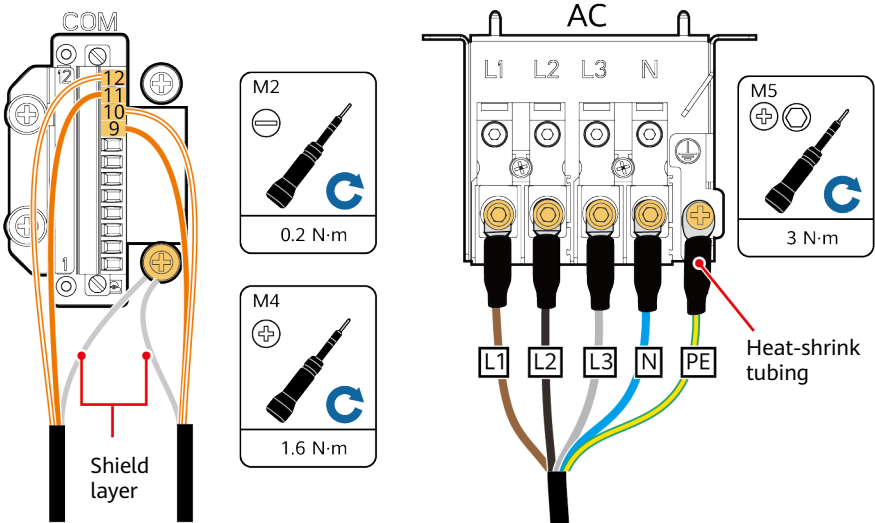


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#### NOTICE

- If the cable stripping length does not meet the requirements, the airtightness and waterproof performance of the device may be affected.
- The OT terminal size must match the cross-sectional area of the AC output power cable and M5 screw specifications.

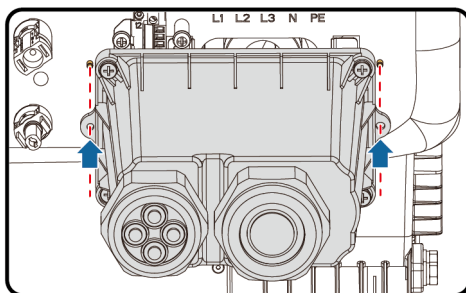
2. Install AC output power cables and signal cables. (The following uses the RS485 signal cables as an example. For details about other signal cables, see the signal definitions of communications ports.)



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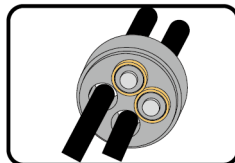
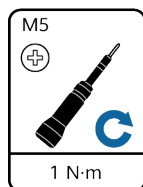
Pin	Definition	Function	Description
1	GND	Ripple control	GND port for the DIN1 to DIN5 signals
2	DIN1		Dry contact for grid scheduling
3	DIN2		
4	DIN3		
5	DIN4		
6	DIN5	Rapid shutdown signal+	For the rapid shutdown DI signal or connecting to the signal cable of an NS protective device
7	GND	GND	-
8	-	-	-
9	485A1	RS485A1 differential signal+	For inverter cascading or connecting to the RS485 signal port of a SmartLogger
10	485B1	RS485B1 differential signal-	
11	485A2	RS485A2 differential signal+	Connecting to the RS485 signal port of a power meter
12	485B2	RS485B2 differential signal-	

- Align the pin holes at both ends of the junction box with the positioning pins on the inverter enclosure to ensure that the screw holes on the junction box are aligned.



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- Install the junction box, seal the unused cable holes in the rubber plugs with waterproof plugs, and tighten the locking caps.

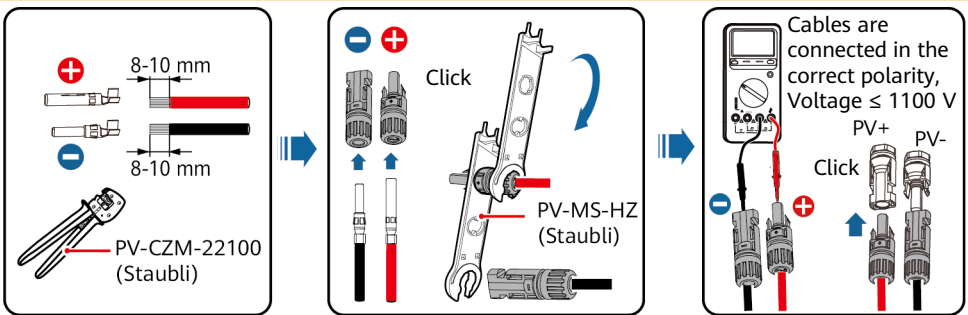


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## 3.4 Connecting DC Input Power Cables

### NOTICE

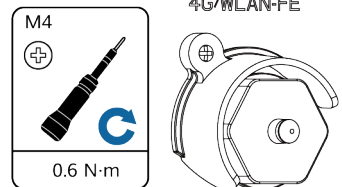
- Ensure that the PV module output is well insulated to ground.
- Use the delivered Staubli MC4 metal terminals and DC connectors. Device damage caused by using other types of metal terminals and DC connectors is not covered by the product warranty.
- If the open-end wrench slips, the locking nut is tightened.
- If PV strings are configured with optimizers, check the cable polarity by referring to the *Smart PV Optimizer Quick Guide*.
- If the DC input power cables are reversely connected, do not perform operations immediately. Wait until the night when solar irradiance declines and the PV string current drops to below 0.5 A. Then set the DC switch to OFF, remove the positive and negative connectors, and rectify the cable connection. Device damage caused by improper operations is not covered by the product warranty.



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## 3.5 (Optional) Installing the Smart Dongle and Anti-theft Components

1. Install the Smart Dongle. For details, see the *Smart Dongle Quick Guide*.
2. Install the anti-theft components.



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## 4 Verifying the Installation

No.	Expected Result
1	The inverter is installed correctly and securely.
2	Cables are routed properly as required by the customer.
3	The Smart Dongle is installed correctly and securely.
4	Cable ties are evenly distributed and no burr exists.
5	Ground cables are connected correctly and securely.
6	The DC SWITCH and all switches connected to the inverter are set to OFF.
7	The AC output power cable, DC input power cables, and signal cables are connected correctly and securely.
8	Unused terminals and ports are sealed by watertight caps.
9	The installation space is proper, and the installation environment is clean and tidy.

## 5 Powering On the System

1. At the AC switch between the inverter and the power grid, use a multimeter to measure the grid voltage and ensure that the voltage is within the operating voltage range of the inverter. If the voltage is not in the allowed range, check the circuits.
2. Turn on the AC switch.
3. Turn on the DC switch (if any) between the PV strings and the inverter.
4. (Optional) Remove the locking screw next to the DC SWITCH on the inverter.
5. Set the DC SWITCH to ON.
6. Observe the LED indicators to check the status of the inverter.
7. (Optional) Observe the Smart Dongle LED indicator to check the status of the Smart Dongle.

## 6 System Commissioning

### 6.1 Creating a Plant

For details about how to create a plant, see the app quick guide. Scan the QR codes below to download the app and quick guide.







FusionSolar App



Quick Guide

### 6.2 Resetting Password

1. Check that the AC and DC sides of the inverter are both powered on, and indicators  and  are steady green or blinking slowly for more than 3 minutes.
2. Turn off the AC switch, set the DC SWITCH of the inverter to OFF, and wait until all indicators on the inverter panel turn off.
3. Complete the following operations within 4 minutes:
  - a. Turn on the AC switch and wait for about 90s or until the inverter indicator  blinks.
  - b. Turn off the AC switch and wait about 30s or until all LED indicators on the inverter panel turn off.
  - c. Turn on the AC switch and wait for about 30s or until all LED indicators on the inverter panel blink and then turn off after about 30s.
4. Wait until the three green LEDs on the inverter panel blink fast and then the three red LEDs blink fast, which indicates that the password is restored.
5. Reset the password within 10 minutes. (If no operation is performed within 10 minutes, all parameters of the inverter remain unchanged.)
  - a. Wait until the indicator  blinks.
  - b. Connect to the app using the initial WLAN hotspot name (SSID) and initial password (PSW), which can be obtained from the label on the side of the app.
  - c. On the login page, set a new password and log in to the app.
6. Set router and management system parameters to implement remote management.

#### NOTICE

You are advised to reset the password in the morning or at night when the solar irradiance is low.

## 7 Customer Service Contact Information

Customer Service Contact Information			
Region	Country	Email	Tel
Europe	France	eu_inverter_support@huawei.com	0080033888888
	Germany		
	Spain		
	Italy		
	United Kingdom		
	Netherlands		
	Other countries		
Asia Pacific	Australia	eu_inverter_support@huawei.com	1800046639
	Turkey	eu_inverter_support@huawei.com	-
	Malaysia	apsupport@huawei.com	0080021686868 /1800220036
	Thailand		(+66) 26542662 (local call charge) 1800290055 (free in Thailand)
	China		solarservice@huawei.com
	Other countries	apsupport@huawei.com	0060-3-21686868
	Japan	Japan	Japan_ESC@ms.huawei.com
India	India	indiaenterprise_TAC@huawei.com	1800 103 8009
South Korea	South Korea	Japan_ESC@ms.huawei.com	-
North America	United States	eu_inverter_support@huawei.com	1-877-948-2934
	Canada	eu_inverter_support@huawei.com	1-855-482-9343
Latin America	Mexico	la_inverter_support@huawei.com	018007703456 /0052-442-4288288
	Argentina		0-8009993456
	Brazil		0-8005953456
	Chile		800201866 (only for fixed lines)
	Other countries		0052-442-4288288
Middle East and Africa	Egypt	eu_inverter_support@huawei.com	08002229000 /0020235353900
	UAE		08002229000
	South Africa		0800222900
	Saudi Arabia		8001161177
	Pakistan		0092512800019
	Morocco		0800009900
	Other countries		0020235353900



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