

SUN2000-(33KTL-A, 36KTL, 42KTL) Quick Guide

Issue: 03

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HUAWEI TECHNOLOGIES CO., LTD.



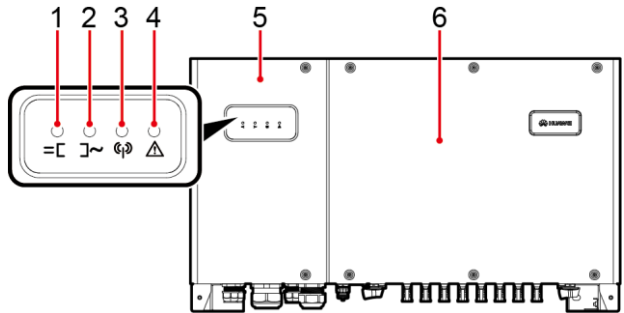
NOTICE

1. 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.
2. Before device installation, carefully read the *SUN2000-(33KTL-A, 36KTL, 42KTL) User Manual* to get familiar with product information and safety precautions. You can log in to <http://support.huawei.com/carrier/>, and search for **SUN2000** on the **Product Support** tab page to view or obtain the user manual.
3. Only qualified and trained electrical technicians are allowed to operate the device. Operators should understand the components and functioning of a grid-tied PV power system and be familiar with relevant local standards.
4. Before installing the device, check that deliverables are intact and complete against the *packing list*. If any damage is found or any component is missing, contact the dealer.
5. Use insulated tools when installing the device. For personal safety, wear insulation gloves and protective shoes.
6. The device warranty will not cover the following conditions:
 - The warranty label is removed.
 - The device is damaged caused by violation of the storage, transportation, installation, and operation regulations specified in this document and user manual.

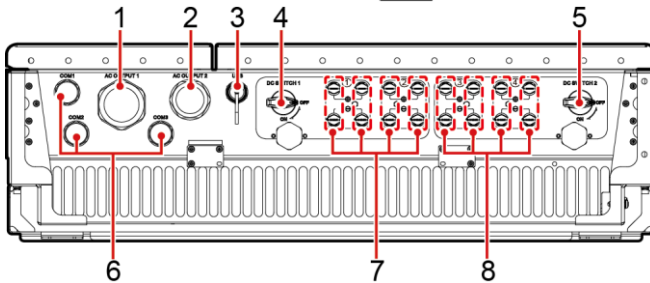
1 Overview

Inverter front view

- (1) PV connection indicator
- (2) Grid-tied indicator
- (3) Communications indicator
- (4) Alarm/Maintenance indicator
- (5) Maintenance compartment door
- (6) Host panel



Ports



IS03WC0004

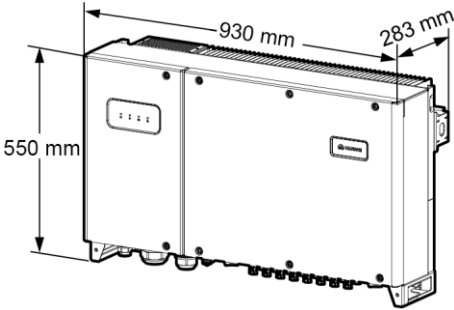
IS03WC0003

- (1) Waterproof cable connector (AC OUTPUT 1)
- (2) Waterproof cable connector (AC OUTPUT 2)
- (3) USB port (USB)
- (4) DC switch 1 (DC SWITCH 1)
- (5) DC switch 2 (DC SWITCH 2)
- (6) Waterproof cable connector (COM1/COM2/COM3)
- (7) DC input terminal (controlled by DC SWITCH 1)
- (8) DC input terminal (controlled by DC SWITCH 2)

NOTE

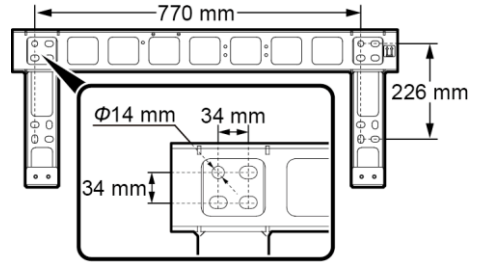
Waterproof cable connector is abbreviated as connector in the following text.

Chassis dimensions



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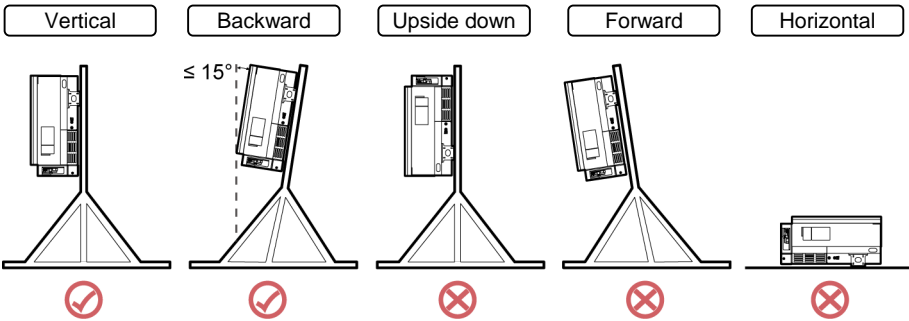
Mounting bracket dimensions



IS03WC0002

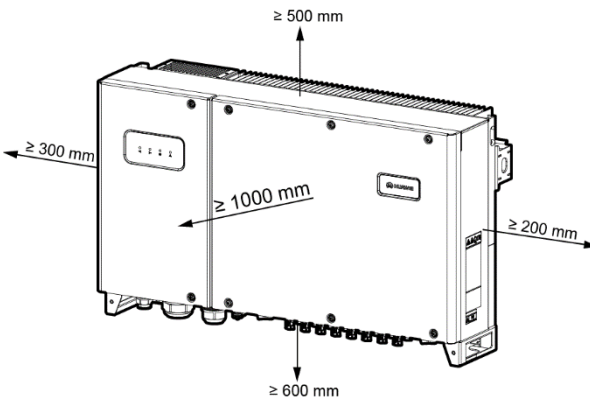
2 Installation Requirements

2.1 Installation Angle



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2.2 Installation Space



IS03SC0001

NOTE

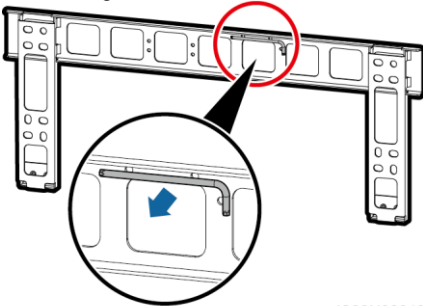
For ease of installing the inverter on the mounting bracket, connecting cables to the bottom of the inverter, and maintaining the inverter in future, it is recommended that the bottom clearance be greater than or equal to 600 mm and less than or equal to 730 mm.

3 Installing the Inverter

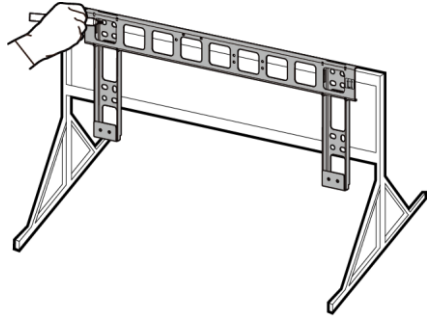
NOTE

- The inverter mounting bracket has four groups of tapped holes, each group containing four tapped holes. Mark any hole in each group based on site requirements and mark four holes in total. Two round holes are preferred.
- The inverter is delivered with M12x40 screw assemblies. If the screw length does not meet the installation requirements, prepare M12 screw assemblies by yourself and use them together with the delivered M12 nuts.
- The following describes how to support-mount the inverter as an example. For details about how to wall-mount the inverter, see the *SUN2000-(33KTL-A, 36KTL, 42KTL) User Manual*.

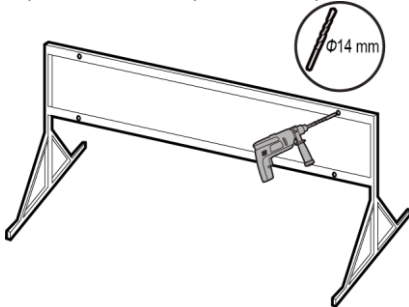
1. Remove the security torx wrench from the mounting bracket and set it aside.



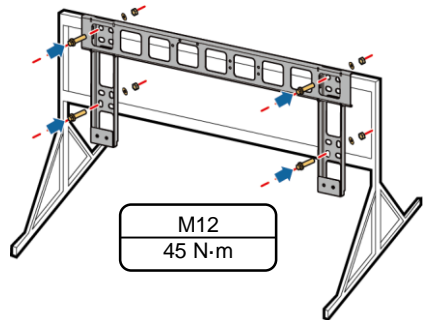
2. Mark hole positions.



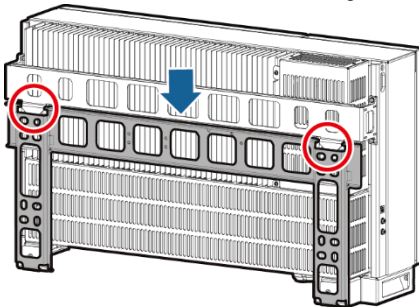
3. Drill holes. (You are advised to apply anti-rust paint on the hole positions for protection.)



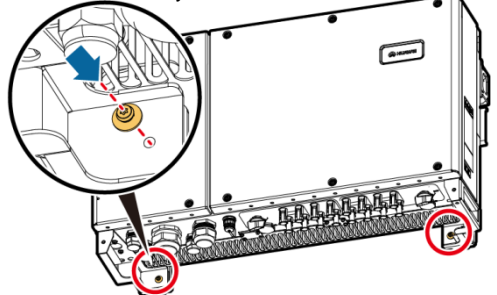
4. Secure the mounting bracket.



5. Install the inverter on the mounting bracket.



6. Tighten the security torx screws using a security torx wrench.



4 Electrical Connections

4.1 Preparations



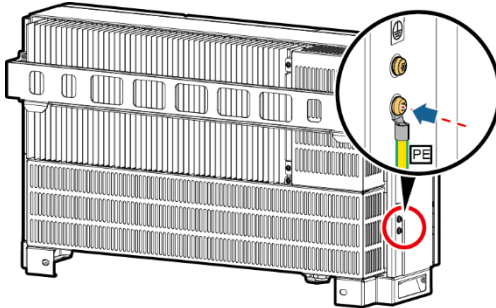
NOTE

1. Before connecting cables, ensure that all required OT terminals and cables are prepared.
2. The SUN2000-42KTL supports the 3W+PE wiring mode.
3. The SUN2000-33KTL-A/36KTL supports 3W+PE and 3W+N+PE wiring modes. Connect the neutral wire if required.

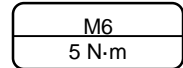
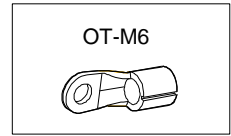
No.	Name	Model or Specifications	Quantity	Function
1	OT terminal	M6	1 PCS	Connects to a ground cable.
2	OT terminal	M8	3 PCS	Connects to an AC output power cable.
3	Ground cable	Outdoor copper-core cable with a cross-sectional area of 16 mm ²	N/A	Connects to a ground cable.
4	AC output power cable	Outdoor copper-core cable with a cross-sectional area of 25 mm ²	N/A	Connects to an AC output power cable.
5	DC input power cable	PV1-F/4 mm ²	N/A	Connects to a DC input power cable.
6	RS485 communications cable	Computer cable DJYP2VP2-22 2x2x1	N/A	Connects to an RS485 communications cable over a terminal block.
		Outdoor shielded network cable CAT 5E	N/A	Connects to an RS485 communications cable over an RJ45 network port.
7	FE communications cable	Outdoor shielded network cable CAT 5E	N/A	Connects to an Ethernet communications cable over an FE network port.
8	Cable tie	N/A	Based on site requirements	Binds cables.

4.2 Installing Ground Cables

Both the shell and maintenance compartment of the inverter provide a ground point. Select either for connecting the ground cable. There are two ground points on the chassis shell and one of them is standby.



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NOTE

1. The outdoor copper-core cable with a cross-sectional area of 16 mm² is recommended. The ground cable must be secured.
2. It is recommended that PGND cable of the inverter be connected to the nearest ground point. For a system with multiple inverters connected in parallel, connect the ground points of all inverters to ensure equipotential connections to ground cables.
3. To enhance the corrosion resistance of the PE terminal, apply silica gel or paint on it after connecting the PGND cable.

4.3 Installing AC Output Power Cables



WARNING

1. Never open the host panel of the inverter.
2. Before opening the inverter maintenance compartment door, turn off the downstream AC output switch and the two bottom DC switches.



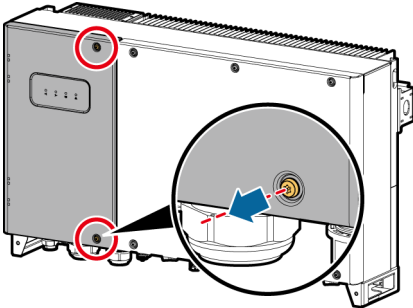
NOTE

- If you connect a ground cable to the ground point on the chassis shell, you are recommended to use a three-core outdoor copper-core cable with a cross-sectional area of 25 mm² as the AC output power cable for the SUN2000-42KTL.
- If you connect a ground cable to the ground point in the maintenance compartment, you are recommended to use a four-core outdoor copper-core cable with a cross-sectional area of 25 mm² as the AC output power cable for the SUN2000-42KTL.
- If you connect a ground cable to the ground point on the chassis shell in a scenario without a neutral wire, you are recommended to use a three-core outdoor copper-core cable with a cross-sectional area of 16 mm² as the AC output power cable for the SUN2000-33KTL-A and a three-core outdoor copper cable with a cross-sectional area of 25 mm² as the AC output power cable for the SUN2000-36KTL.
- If you connect a ground cable to the ground point in the maintenance compartment in a scenario without a neutral wire, you are recommended to use a four-core outdoor copper-core cable with a cross-sectional area of 16 mm² as the AC output power cable for the SUN2000-33KTL-A and a four-core outdoor copper cable with a cross-sectional area of 25 mm² as the AC output power cable for the SUN2000-36KTL.

 **NOTE**

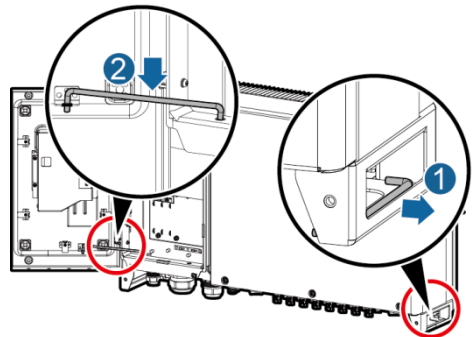
- If you connect a ground cable to the ground point on the chassis shell in a scenario with a neutral wire, you are recommended to use a four-core outdoor copper-core cable with a cross-sectional area of 16 mm² as the AC output power cable for the SUN2000-33KTL-A and a four-core outdoor copper cable with a cross-sectional area of 25 mm² as the AC output power cable for the SUN2000-36KTL.
- If you connect a ground cable to the ground point in the maintenance compartment in a scenario with a neutral wire, you are recommended to use a five-core outdoor copper-core cable with a cross-sectional area of 16 mm² as the AC output power cable for the SUN2000-33KTL-A and a five-core outdoor copper cable with a cross-sectional area of 25 mm² as the AC output power cable for the SUN2000-36KTL.
- For more details about cable specifications, see the *SUN2000-(33KTL-A, 36KTL, 42KTL) User Manual*.
- The AC OUTPUT 1 connector supports the cable with an outer diameter of 37 mm to 44 mm. The AC OUTPUT 2 connector supports the cable with an outer diameter of 24 mm to 32 mm. Select an appropriate AC OUTPUT connector based on the cable outer diameter. This document uses the AC OUTPUT 2 connector as an example to describe how to connect a cable.

1. Remove the two security torx screws from the maintenance compartment door using a security torx wrench. (Set the two screws aside. Use the idle ground screw on the chassis shell as the standby screw, and the idle floating nut on the chassis as the standby floating nut.)



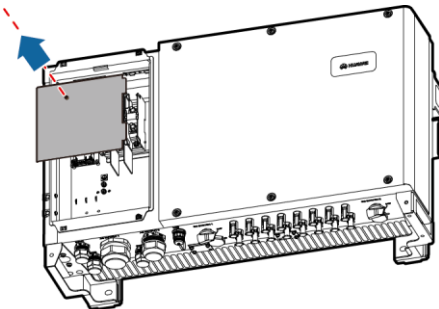
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2. Open the maintenance compartment door and adjust the support bar. (The support bar is bound to the chassis base.)



IS03HC0008

3. Remove the AC terminal cover.

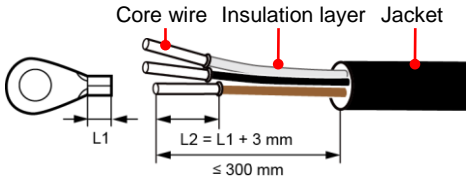


IS03HC0007

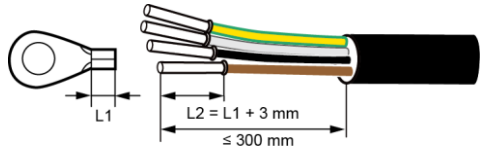
4. Remove an appropriate length of the jacket and insulation layer from the AC output power cable using a wire stripper. (Ensure that the jacket is in the maintenance compartment.)

a. Three-core cable (excluding the ground cable and neutral wire)

b. Four-core cable (including the ground cable but excluding the neutral wire)



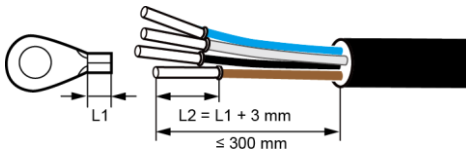
IS03Z10008



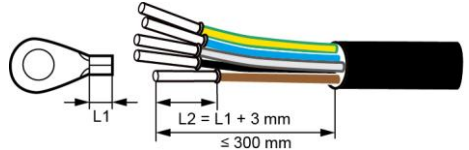
IS03Z10005

c. Four-core cable (excluding the ground cable but including the neutral wire)

d. Five-core cable (including the ground cable and neutral wire)



IS03Z10006



IS03Z10004

5. Insert the exposed core wires into the crimping area of the OT terminal and crimp them using hydraulic pliers.

6. Wrap the wire crimping area with heat shrink tubing or PVC insulation tape.

NOTICE

If heat shrink tubing is used, route the AC output power cable through the heat shrink tubing and then crimp the OT terminal. Ensure that the area wrapped by the heat shrink tubing does not exceed the crimping area of the OT terminal.

7. Remove the locking cap from the AC OUTPUT 2 connector at the inverter bottom and then remove the plug from the cap.

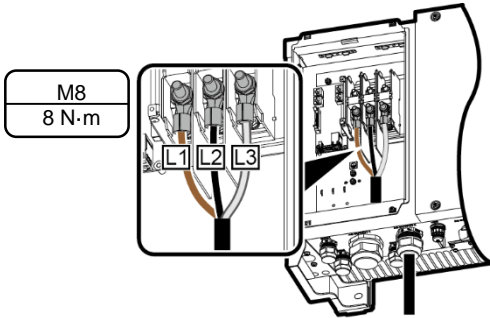
8. Route the AC output power cable through the locking cap and then the AC OUTPUT 2 connector at the inverter bottom.

9. Connect the AC output power cable to the AC terminal block, and then secure the connector using a 13 mm socket wrench with an extension rod. If you connect a ground cable to the ground point in the maintenance compartment, tighten the ground screw using a 10 mm socket wrench with an extension rod.

NOTICE

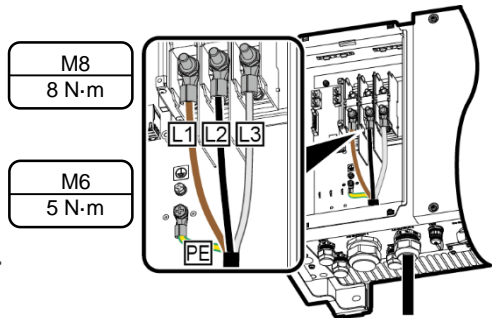
Ensure that the AC output power cable is connected securely. Otherwise, the inverter may fail to operate or experience a fault that will damage the terminal block. For example, the inverter may generate heat during operating due to unreliable connection.

a. 3-pin SUN2000-42KTL
(excluding the ground cable)



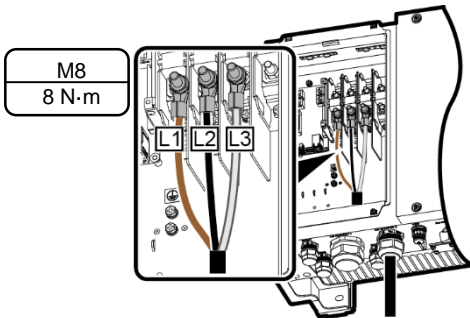
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b. 3-pin SUN2000-42KTL
(including the ground cable)



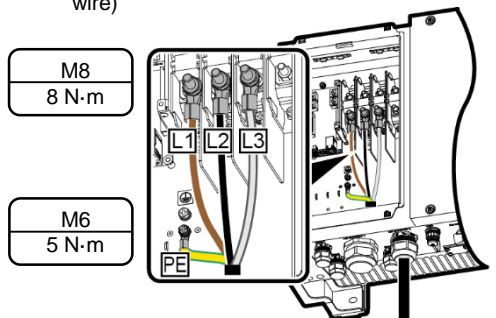
IS0311008

c. 4-pin SUN2000-42KTL (excluding the
ground cable and neutral wire)



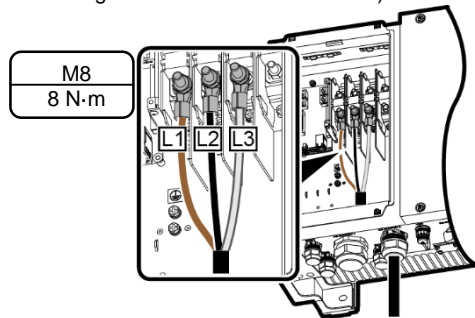
IS03110012

d. 4-pin SUN2000-42KTL (including the
ground cable but excluding the neutral
wire)



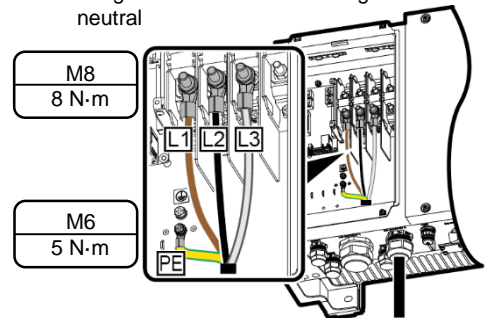
IS03110010

e. SUN2000-33KTL-A/36KTL (excluding
the ground cable and neutral wire)



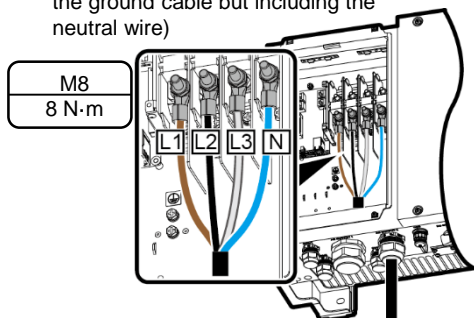
IS03110012

f. SUN2000-33KTL-A/36KTL (including
the ground cable but excluding the
neutral)



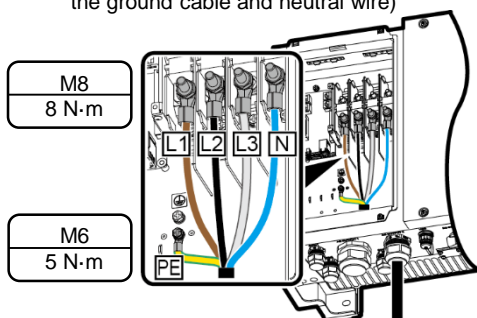
IS03110010

g. SUN2000-33KTL-A/36KTL (excluding the ground cable but including the neutral wire)



IS03110011

h. SUN2000-33KTL-A/36KTL (including the ground cable and neutral wire)

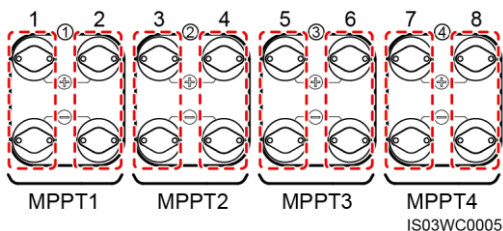


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10. Use a torque wrench with an open end of 52 mm to tighten the locking caps to a torque of 7.5 N·m.

4.4 Installing DC Input Power Cables

Selecting DC input terminals



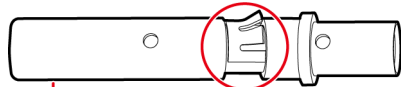
Number of Inputs	SUN2000
1	Connects to any route.
2	Connects to routes 1 and 5.
3	Connects to routes 1, 3, and 5.
4	Connects to routes 1, 3, 5, and 7.
5	Connects to routes 1, 2, 3, 5, and 7.
6	Connects to routes 1, 2, 3, 5, 6, and 7.
7	Connects to routes 1, 2, 3, 4, 5, 6, and 7.
8	Connects to routes 1, 2, 3, 4, 5, 6, 7, and 8.

NOTE

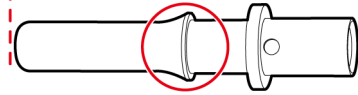
The inverter provides two DC switches, namely, DC SWITCH 1 and DC SWITCH 2. DC SWITCH 1 controls the first to the fourth routes of DC input terminals, while DC SWITCH 2 controls the fifth to the eighth routes of DC input terminals.

Positive and negative metal terminals

Positive metal terminal (female)



Negative metal terminal (male)



IS02WC0003



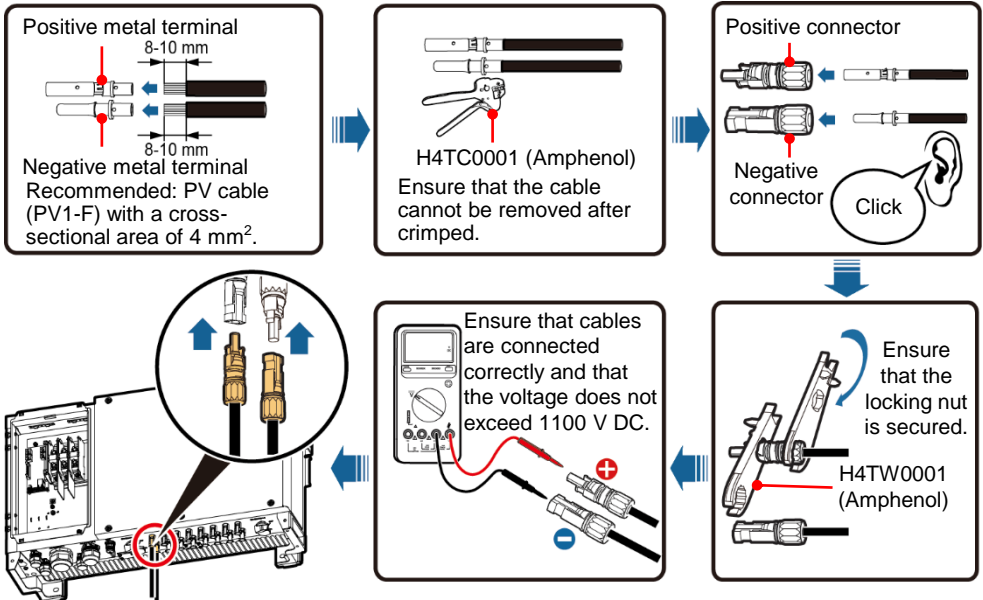
WARNING

- Ensure that the PV string is well insulated to the ground.
- Before inserting the positive and negative connectors respectively into the positive and negative DC input terminals of the inverter, check that the DC voltage does not exceed 1100 V DC using a multimeter and that the cables are connected correctly. Otherwise, the inverter will be damaged.



NOTICE

1. Use the DC input terminals delivered with the inverter.
2. Before connecting DC input power cables, label the cable polarities to ensure correct cable connections. If the cables are connected incorrectly, the inverter may be damaged.
3. Insert the crimped metal terminals of the positive and negative power cables into the appropriate positive and negative connectors. Then pull the DC input power cables to ensure that they are connected securely.
4. Connect the positive and negative connectors to the appropriate positive and negative DC input terminals. Then pull the DC input power cables to ensure that they are connected securely.
5. If the DC input power cable is reversely connected, do not operate the DC switches and positive and negative connectors immediately. Otherwise, the SUN2000 will be damaged. The caused equipment damage is beyond the warranty scope. Wait until the solar irradiance declines at night and the PV string current reduces to below 0.5 A. Then, turn off the two DC switches, remove the positive and negative connectors, and rectify the connection of the DC input power cable.



IS03IC1002

4.5 Selecting a Communication Mode

1. You can choose either the PLC or RS485 communication mode for the SUN2000-33KTL-A/36KTL/42KTL.
2. FE communication is optional for the SUN2000-36KTL. If you need to use the FE communication mode, contact local technical support.
3. If the SUN2000-36KTL adopts FE communication mode, it supports only RS485 and FE communication modes, and does not support PLC communication mode.



NOTE

- If PLC is used, you do not have to connect any cable to the inverter, but have to connect AC power cables to the PLC CCO module or SmartLogger2000. For detailed operations, see the *PLC CCO01A User Manual* or *SmartLogger2000 User Manual*.
- If RS485 is used, do not connect the PLC CCO module to the AC power cable.

4.6 Installing RS485 Communications Cables



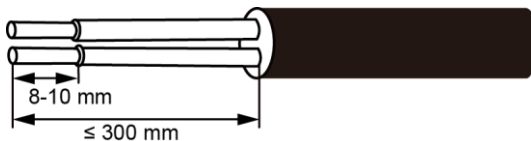
NOTICE

1. When routing communications cables, separate communications cables from power cables to prevent communication from being affected.
2. An RS485 cable can connect to either a terminal block or an RJ45 network port. It is recommended that the RS485 cable connect to a terminal block.

Connecting to a terminal block (recommended)

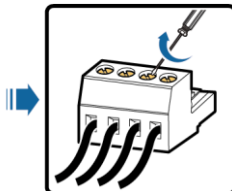
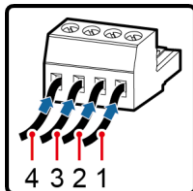
The DJYP2VP2-22 2x2x1 computer cable or a communications cable with a cross-sectional area of 1 mm² and outer diameter of 14–18 mm is recommended.

1. Remove an appropriate length of the jacket and core wire insulation layer from the communications cable using a wire stripper.



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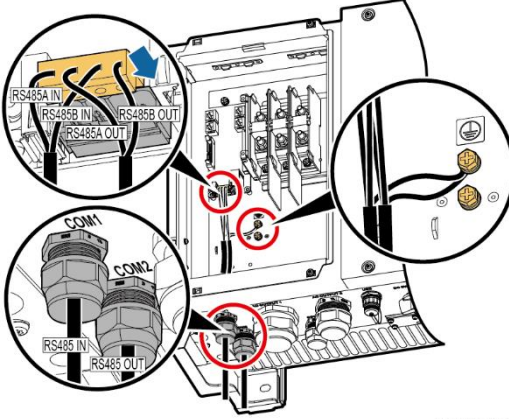
2. Remove the locking caps from the COM1 and COM2 connectors at the inverter bottom and then remove the plugs from the caps.
3. Route the communications cable through the locking caps, and then the COM1 (RS485 IN) and COM2 (RS485 OUT) connectors at the inverter bottom.
4. Remove the terminal base from the terminal block, and connect the communications cable to the terminal base.



IS03IC1004

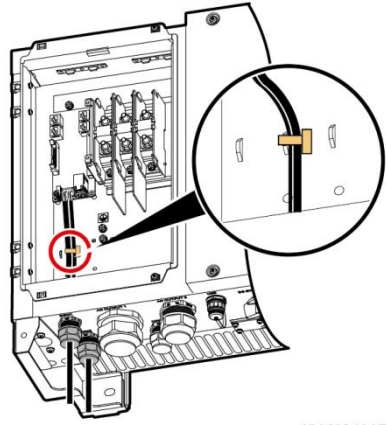
No.	Port Definition	Description
1	RS485A IN	RS485A, RS485 differential signal +
2	RS485A OUT	RS485A, RS485 differential signal +
3	RS485B IN	RS485B, RS485 differential signal -
4	RS485B OUT	RS485B, RS485 differential signal -

5. Install the terminal base on the terminal block, and connect the shield layer to the ground point.



IS03IC1003

6. Bind the communications cable.



IS03IC1007

NOTE

When connecting the shielded cable, choose whether to crimp the OT terminal based on site requirements.

7. Use a torque wrench with an open end of 33 mm to tighten the locking caps to a torque of 7.5 N-m.

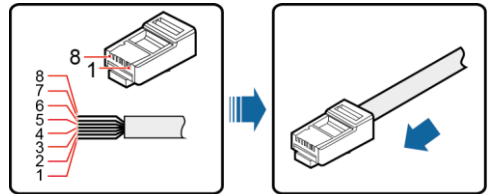
NOTE

To ensure airtightness, you are advised to apply firestop putty to the used connectors at the bottom of the chassis.

RJ45 network port connection

You are recommended to use a CAT 5E outdoor shielded network cable with an outer diameter less than 9 mm and internal resistance not greater than 1.5 ohms/10 m, as well as a shielded RJ45 connector.

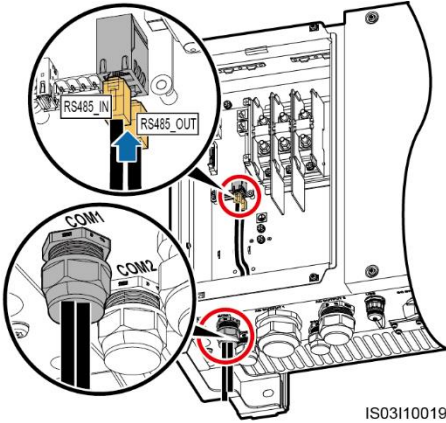
1. Insert the wires of the network cable to the RJ45 connector in sequence.
2. Crimp the RJ45 connector using a crimping tool.



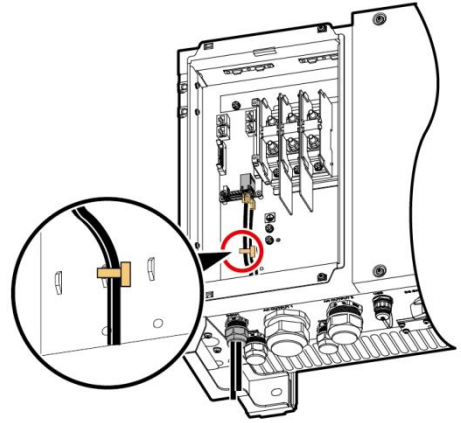
IS01ZC0021

No.	Color	Pin Definition
1	White-and-orange	RS485A, RS485 differential signal +
2	Orange	RS485B, RS485 differential signal -
3	White-and-green	N/A
4	Blue	RS485A, RS485 differential signal +
5	White-and-blue	RS485B, RS485 differential signal -
6	Green	N/A
7	White-and-brown	N/A
8	Brown	N/A

- Remove the locking cap from the COM1 connector at the inverter bottom and then remove the plug from the cap.
- Route the communications cable through the locking cap and then the COM1 connector at the inverter bottom.
- Insert the RJ45 connector into the RJ45 network port in the maintenance compartment of the inverter.
- Bind the communications cable.



IS03110019



IS031C1006

- Use a torque wrench with an open end of 33 mm to tighten the locking caps to a torque of 7.5 N·m.

NOTE

To ensure airtightness, you are advised to apply firestop putty to the used connectors at the bottom of the chassis.

4.7 (Optional) Installing FE Communications Cables

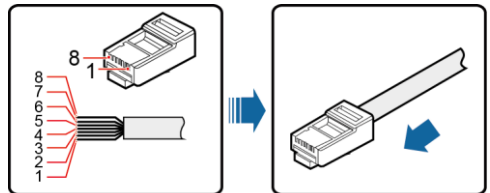
FE communication is mainly used in distributed rooftop scenarios with a small number of inverters. The inverter can directly connect to the PC over the Ethernet to implement monitoring networking.

NOTE

- If FE communication is used, a maximum of ten SUN2000s can be connected. In addition, the NetEco needs to be installed on the PC for monitoring networking.
- A standard network cable has two wire sequence standards, namely, 568A and 568B. The network cables used in the same PV grid-tied power generation system should comply with the same wire sequence standard.

You are recommended to use a CAT 5E outdoor shielded network cable with an outer diameter less than 9 mm and internal resistance not greater than 1.5 ohms/10 m, as well as a shielded RJ45 connector.

- Insert the wires of the network cable to the RJ45 connector in sequence.
- Crimp the RJ45 connector using a crimping tool.



IS012C0021

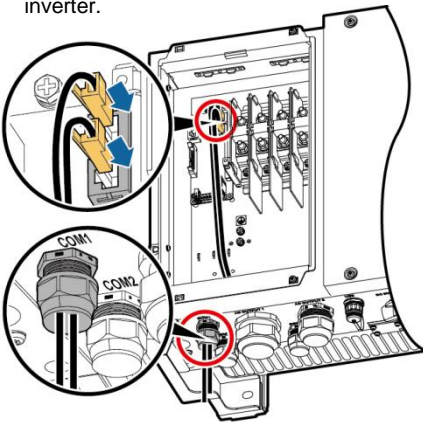
a. 568A standard

No.	Color
1	White-and-green
2	Green
3	White-and-orange
4	Blue
5	White-and-blue
6	Orange
7	White-and-brown
8	Brown

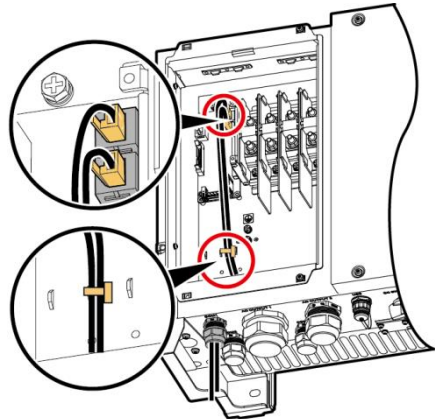
b. 568B standard

No.	Color
1	White-and-orange
2	Orange
3	White-and-green
4	Blue
5	White-and-blue
6	Green
7	White-and-brown
8	Brown

- Remove the locking cap from the COM1 connector at the inverter bottom and then remove the plug from the cap.
- Route the communications cable through the locking cap and then the COM1 connector at the inverter bottom.
- Insert the RJ45 connector into the FE network port in the maintenance compartment of the inverter.
- Bind the communications cable.



IS03I40010



IS03I40013

- Use a torque wrench with an open end of 33 mm to tighten the locking caps to a torque of 7.5 N·m.

NOTE

To ensure airtightness, you are advised to apply firestop putty to the used connectors at the bottom of the chassis.

5 Verifying the Installation

1. The inverter is installed correctly and securely.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
2. The DC switches and downstream AC output switch are OFF.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3. Ground cables are connected correctly and securely, without open circuits or short circuits.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4. AC output power cables are connected correctly and securely, without open circuits or short circuits.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
5. DC input power cables are connected correctly and securely, without open circuits or short circuits.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
6. The communications cables are connected correctly and securely.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
7. All used connectors at the chassis bottom are applied with firestop putty.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
8. The AC terminal cover is reinstalled.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
9. The maintenance compartment door is closed and the door screws are tightened.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
10. The idle DC input terminals are sealed.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
11. The idle USB port is plugged with a waterproof plug.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
12. Idle AC OUTPUT and COM connectors are plugged and the locking caps are tightened.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>

6 Powering On the System

NOTICE





Before turning on the AC switch between the inverter and the power grid, use a multimeter to check that the AC voltage is within the specified range.

1. Turn on the AC switch between the inverter and the power grid.
2. Ensure that the DC switches at the inverter bottom are ON.
3. (Optional) Measure the temperatures at the joints between the DC terminals and the connectors using a point-test thermometer.

NOTE

To check that the DC terminals are in good contact, check that the temperatures at the joints between DC terminals and connectors do not exceed 85°C after the inverter has been running for a period of time.

4. Observe the indicators to check the inverter operating status.

Indicator	Status	Meaning	
PV connection indicator 	Green on	At least one PV string is properly connected, and the DC input voltage of the corresponding MPPT circuit is higher than or equal to 200 V.	
	Green off	The inverter disconnects from all PV strings, or the DC input voltage of each MPPT circuit is less than 200 V.	
Grid-tied indicator 	Green on	The inverter is connected to the power grid.	
	Green off	The inverter is not connected to the power grid.	
Communications indicator 	Blinking green (on for 0.5s and then off for 0.5s)	The inverter receives data over RS485/PLC/FE communication.	
	Green off	The inverter has not received data over RS485/PLC/FE communication for 10 seconds.	
Alarm/Maintenance indicator 	Alarm status	Blinking red at long intervals (on for 1s and then off for 4s).	A warning alarm is generated.
		Blinking red at short intervals (on for 0.5s and then off for 0.5s).	A minor alarm is generated.
		Steady red	A critical alarm is generated.
	Local maintenance status	Blinking green at long intervals (on for 1s and then off for 1s)	Local maintenance is in progress.
		Blinking green at short intervals (on for 0.125s and then off for 0.125s)	Local maintenance fails.
		Steady green	Local maintenance succeeds.

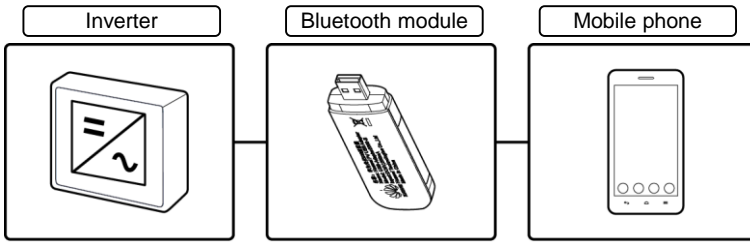
7 SUN2000 APP



NOTE

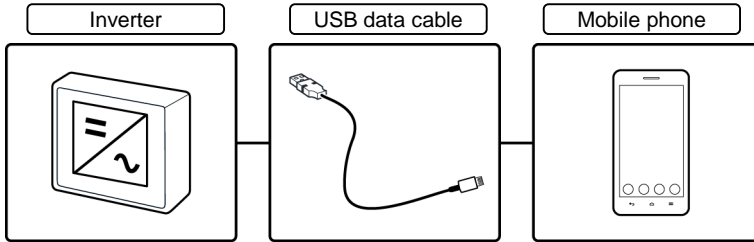
1. The SUN2000 APP enables the inverter to communicate with the monitoring system through a USB data cable or Bluetooth for you to query alarms, configure parameters, and perform routine maintenance. The SUN2000 APP is a convenient platform for local monitoring and maintenance. The APP name is SUN2000.
2. Mobile phone operating system: Android 4.0 or later, and iOS 7.0 or later. When the iOS is used, the APP supports only Bluetooth connection.
3. Access the Huawei app store (<http://appstore.huawei.com>), Google Play (<https://play.google.com>), or App Store (iOS), search for SUN2000, and download the SUN2000 APP installation package.
4. Connect a USB data cable or a Bluetooth module to the USB port of the inverter to implement the communication between the inverter and the APP.

Bluetooth module connection



IS01NC0009

Data cable connection



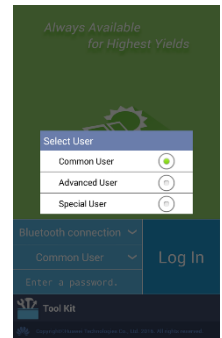
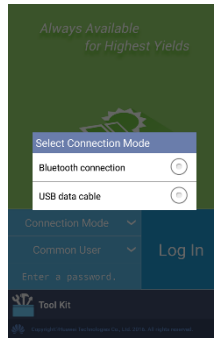
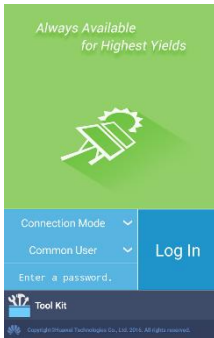
IS01NC0010

Login screen

Select a connection mode

Connect Bluetooth

Switch between users



Quick setting


Function menu



NOTICE

- The preset password for **Common User**, **Advanced User**, and **Special User** is **00000a**.
- Use the preset password upon initial login. To ensure account security, change the password immediately after login.
- The screen snapshots in this document correspond to app V200R001C20SPC010.

NOTE

- Tap  to return to the login screen.
- By default, the inverter can be grid-tied without parameters being set. You can modify the parameters based on site requirements. For details about parameter configuration, see the *SUN2000 APP User Manual*.

8 FAQ

Viewing Active Alarms

Connect a USB data cable or a Bluetooth module to the USB port of the inverter to implement the communication between the inverter and the APP. After login, tap **Alarm** on the main menu to display the **Active Alarm** screen.

9 Common Faults and Troubleshooting

Symptom	Possible Cause	Suggestion
String Reverse	The PV string cables are connected reversely during the inverter installation.	Wait until the solar irradiance declines at night and the PV string current reduces to below 0.5 A. Then, turn off the two DC switches, remove the positive and negative connectors, and rectify the connection of the DC input power cable.

Appendix 1: Power Grid Codes (SUN2000-33KTL-A)

No.	Power Grid Code	Country and Condition	No.	Power Grid Code	Country and Condition
1	VDE-AR-N-4105	Germany low-voltage power grid	2	UTE C 15-712-1(A)	France mainland low-voltage power grid
3	UTE C 15-712-1(B)	France islands 230 V 50 Hz	4	UTE C 15-712-1(C)	France islands 230 V 60 Hz
5	CEI0-21	Italy low-voltage power grid	6	RD1699/661	Spain low-voltage power grid
7	PO12.3	Spain low-voltage power grid	8	CEI0-16	Italy low-voltage power grid

Appendix 2: Power Grid Codes (SUN2000-36KTL)

No.	Power Grid Code	Country and Condition	No.	Power Grid Code	Country and Condition
1	VDE-AR-N-4105	Germany low-voltage power grid	2	NB/T 32004	China low-voltage power grid
3	UTE C 15-712-1(A)	France mainland low-voltage power grid	4	UTE C 15-712-1(B)	France islands 230 V 50 Hz
5	UTE C 15-712-1(C)	France islands 230 V 60 Hz	6	BDEW-MV	Germany medium-voltage power grid (BDEW-MV)
7	G59-England	England 230 V power grid (I > 16 A)	8	G59-Scotland	Scotland 240 V power grid (I > 16 A)
9	CEI0-21	Italy low-voltage power grid	10	EN50438-CZ	Czech Republic low-voltage power grid
11	RD1699/661	Spain low-voltage power grid	12	RD1699/661-MV480	Spain medium-voltage power grid
13	C10/11	Belgium low-voltage power grid	14	AS4777	Australia low-voltage power grid
15	IEC61727	IEC61727 low-voltage power grid (50 Hz)	16	CEI0-16	Italy low-voltage power grid
17	TAI-MEA	Thailand low-voltage power grid (MEA)	18	TAI-PEA	Thailand low-voltage power grid (PEA)
19	BDEW-MV480	Germany medium-voltage power grid (BDEW-MV480)	20	G59-England-MV480	England 480 V medium-voltage power grid (I > 16 A)
21	IEC61727-MV480	IEC61727 medium-voltage power grid (50 Hz)	22	UTE C 15-712-1-MV480	France medium-voltage power grid
23	TAI-PEA-MV480	Thailand medium-voltage power grid (PEA)	24	TAI-MEA-MV480	Thailand medium-voltage power grid (MEA)
25	EN50438-DK-MV480	Denmark medium-voltage power grid	26	EN50438-TR-MV480	Turkey medium-voltage power grid
27	EN50438-TR	Turkey low-voltage power grid	28	C11/C10-MV480	Belgium medium-voltage power grid
29	Philippines	Philippines low-voltage power grid	30	Philippines-MV480	Philippines medium-voltage power grid

No.	Power Grid Code	Country and Condition	No.	Power Grid Code	Country and Condition
31	AS4777-MV480	Australia medium-voltage power grid	32	NRS-097-2-1	South Africa low-voltage power grid
33	NRS-097-2-1-MV480	South Africa medium-voltage power grid	34	KOREA	South Korea low-voltage power grid
35	IEC61727-60Hz	IEC61727 low-voltage power grid (60 Hz)	36	IEC61727-60Hz-MV480	IEC61727 medium-voltage power grid (60 Hz)
37	ANRE	Romania low-voltage power grid	38	ANRE-MV480	Romania medium-voltage power grid
39	PO12.3-MV480	Spain medium-voltage power grid	40	EN50438_IE-MV480	Ireland medium-voltage power grid (EN50438_IE)
41	EN50438_IE	Ireland low-voltage power grid (EN50438_IE)	42	VDE-AR-N-4105-MV480	Germany medium-voltage power grid (VDE-AR-N-4105)
43	CEI0-16-MV480	Italy medium-voltage power grid (CEI0-16)	44	PO12.3	Spain low-voltage power grid
45	CEI0-21-MV480	Italy medium-voltage power grid (CEI0-21)	46	Egypt ETEC	Egypt low-voltage power grid
47	Egypt ETEC-MV480	Egypt medium-voltage power grid	48	CLC/TS50549_IE	Ireland low-voltage power grid (CLC/TS50549_IE)
49	CLC/TS50549_I E-MV480	Ireland medium-voltage power grid (CLC/TS50549_IE)	50	Jordan-Transmission	Jordan low-voltage power grid
51	Jordan-Transmission-MV480	Jordan medium-voltage power grid	52	NAMIBIA	Namibia power grid
53	ABNT NBR 16149	Brazil low-voltage power grid	54	Custom (50Hz)	Reserved
55	Custom (60Hz)	Reserved	56	Custom-MV480 (50Hz)	Reserved
57	Custom-MV480 (60Hz)	Reserved	N/A	N/A	N/A

Appendix 3: Power Grid Codes (SUN2000-42KTL)

No.	Power Grid Code	Country and Condition	No.	Power Grid Code	Country and Condition
1	RD1699/661-MV480	Spain medium-voltage power grid	2	BDEW-MV480	Germany medium-voltage power grid (BDEW-MV480)
3	G59-England-MV480	England medium-voltage (I > 16 A)	4	IEC61727-MV480	IEC61727 medium-voltage power grid (50 Hz)
5	UTE C 15-712-1-MV480	France island medium-voltage power grid	6	TAI-PEA-MV480	Thailand medium-voltage power grid (PEA)
7	TAI-MEA-MV480	Thailand medium-voltage power grid (MEA)	8	EN50438-DK-MV480	Denmark medium-voltage power grid
9	EN50438-TR-MV480	Turkey medium-voltage power grid	10	Philippines-MV480	Philippines medium-voltage power grid
11	NRS-097-2-1-MV480	South Africa medium-voltage power grid	12	IEC61727-60Hz-MV480	IEC61727 medium-voltage power grid (60 Hz)
13	PO12.3-MV480	Spain medium-voltage power grid	14	EN50438_IE-MV480	Ireland medium-voltage power grid (EN50438_IE)
15	VDE-AR-N-4105-MV480	Germany medium-voltage power grid (VDE-AR-N-4105)	16	CEI0-16-MV480	Italy medium-voltage power grid (CEI0-16)
17	CEI0-21-MV480	Italy medium-voltage power grid (CEI0-21)	18	Egypt ETEC-MV480	Egypt medium-voltage power grid
19	CLC/TS50549_IE-MV480	Ireland medium-voltage power grid (CLC/TS50549_IE)	20	Jordan-Transmission-MV480	Jordan medium-voltage power grid
21	Custom-MV480 (50Hz)	Reserved	22	Custom-MV480 (60Hz)	Reserved



NOTE

Grid codes are subject to change. The listed codes are for your reference only.

Scan here for technical support (carrier):

Apple Store



Google Play



Huawei App Store



Scan here for more documents:

Support



WeChat



**You can also log in to Huawei technical support website:
<http://support.huawei.com>**

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