



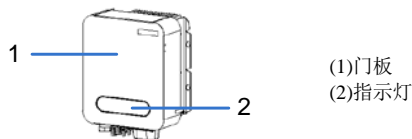
hopeSun 系列 单相组串式光伏逆变器快速安装指南

⚠ 注意

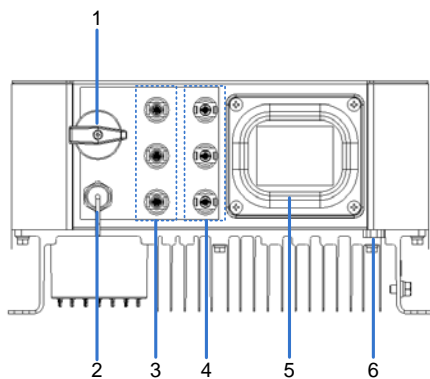
1. 由于产品升级或其他原因，本手册内容会不定期更新。除非另有约定，本手册仅作为使用指导，文档中的所有陈述、信息和建议都不构成任何明示或暗示的担保。
2. 在任何情况下，本手册中的指导都不可取代用户手册及产品机身上的安全警示及说明。
3. 设备的所有操作必须由专业人员进行。操作人员应当充分熟悉整个光伏发电系统的构成、工作原理，及项目所在地的相关标准。
4. 安装设备前请根据“装箱清单”检查交付件是否完整齐备，机体有无明显的外部损坏。如果缺少任何物件或存在任何损坏，请联系经销商。
5. 发生以下两种情况，不在质保范围内。
 - 拆除防拆标签；
 - 未按照本手册及用户手册的要求存储、搬运、安装和使用设备所导致的设备损坏。

1. 产品简介

逆变器正面

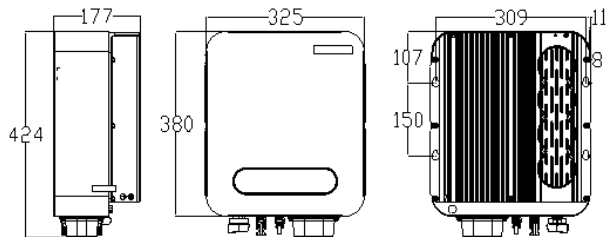


端口说明



- (1) 直流开关 DC SWITCH
- (2) Wi-Fi/GPRS 通信接口
- (3) PV+接线端子(1+ ~ 3+)
- (4) PV-接线端子(1- ~ 3-)
- (5) AC 输出端子 AC OUTPUT
- (6) 防水透气窗

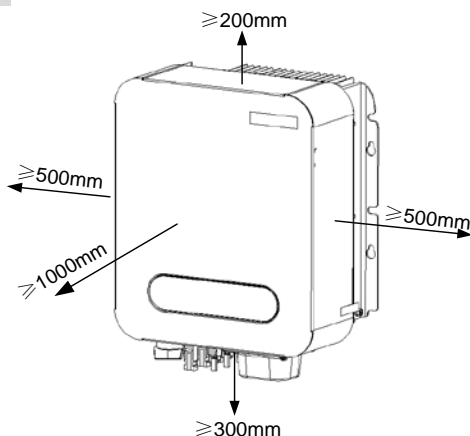
逆变器结构尺寸



2. 安装要求及工具准备

☞ 本手册仅作参考，详尽安装要求请参考用户手册。

安装空间



工具准备

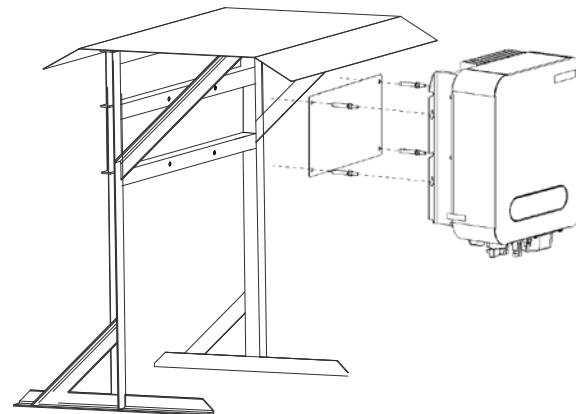
工具或设备	用途	备注
十字螺丝刀(PH2)	松开/紧固输出端子档板的螺钉	螺栓规格: M5
管型端子压线钳	紧固接地螺钉和挂板螺钉	螺栓规格: M4 和 M6
套筒扳手	固定膨胀螺钉	螺栓规格: M6
MC4 端子压线钳	压接 MC4 端子	输入电缆需要压接成 MC4 端子, 才能与逆变器上的 PV+/PV-端子连接。
MC4 拆除工具		
剥线钳	剥线	
万用表	测量电压, 确保接线、安装时安全	
安全防护用具	施工必要的劳动保护	绝缘鞋、手套等

3. 逆变器安装

组串式逆变器的包装中附带膨胀螺栓和组合螺钉，安装时需先按照定位板在墙壁或支架上打孔，再固定膨胀螺栓或组合螺钉，最后将逆变器挂在紧固的膨胀螺栓或组合螺钉上。

● 安装步骤

- 1) 按照挂板固定孔位尺寸，使用直径 8mm 的钻头在墙壁或支架上打孔，墙壁孔深 45±5mm；
- 2) 墙上打孔后装上 4PCS M6 套管加强型膨胀锚栓；或者使用 M6 组合螺栓从支架背面穿至前面，并用平垫/螺母在前面固定；
- 3) 在挂放逆变器之前，请保证安装表面坚固，达到承重要求；
- 4) 将逆变器挂在膨胀螺栓或组合螺钉的螺杆上，再使用弹垫/平垫/螺母将逆变器锁紧。



☞ 避免逆变器受到阳光直射、雨淋与积雪，可延长使用寿命。建议选择带遮挡的安装地点，若无法满足，请搭建遮阳棚（选配件）。

4. 电气连接

⚠ 危险

1. 连接线缆时，禁止带电操作，并遵守《组串式逆变器用户手册》中的相关要求。
2. 在连接线缆前，请完成以下准备工作，以免造成人身伤害。
 - 1) 断开逆变器直流开关。确保逆变器处于关机状态，并贴好警示标识。
 - 2) 确定输入电缆的正、负极，并做好标识。确保输入电缆与光伏组串的连接断开。
 - 3) 确认光伏组串的开路电压没有超过规定限值。
 - 4) 确认对应的交流汇流箱断路器处于断开状态。
3. 在连接输入线缆时，确保输入电缆的正、负极与组串式逆变器 PV 端子正、负极对应。

● 输出侧电缆接线

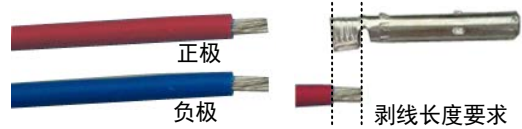
1. 通过保护地线，将逆变器与接地排连接，达到接地保护的目。地线接线处贴有 PE 标识。采用固定连接且保护接地导体的截面积至少为 10mm²（铜）或 16mm²（铝）。螺栓规格为 M4。
2. 交流输出电缆连接：

- 1) 将逆变器底部的“AC OUTPUT”防水锁头上的锁紧帽拧下；
- 2) 将交流线缆依次穿入锁紧帽和逆变器底部“AC OUTPUT”防水锁头，依次连接至交流接线端子排的L,N上，紧固力矩为8N•m。

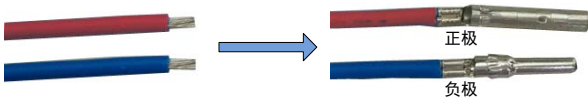
● PV 输入电缆接线

1. 压接 MC4 端子：

- 1) 确认输入电缆的正、负极，并已做好标识。
- 2) 使用剥线钳剥线：



- 3) 按照正确的极性，将电缆与对应线芯压接到一起。



- 4) 按照正确的极性，将线芯插入 MC4 连接器的公头和母头，并拧紧连接器后盖。



2. 确定输入电缆的极性后，将每一路输入电缆正、负极与组串式逆变器输入端子 PV+、PV-一一对应连接。正极接 PV+，负极接 PV-。

● 线缆选择

名称	位号	推荐电缆规格	备注
PV 支路输入电缆	1+ ~3+ 1- ~3-	行业通用光伏线缆，型号：PV1-F 推荐各 PV+、PV-支路均使用横截面积为 4.0mm ² 的电缆	无
交流输出电缆	L、N	3 芯户外线缆 导线截面积推荐值：10mm ²	交流输出只有 1 个防水锁头，规格为 18mm~25mm。
RS485 通信电缆		推荐使用专用通讯电缆，或横截面积不小于 0.75mm ² 的 4 芯或 2 芯屏蔽双绞电缆	无
PE 接地电缆	PE	采用固定连接且保护接地导体的截面积至少为 10mm ² (铜) 或 16mm ² (铝)	无

● 直流输入端子选择

逆变器有一个直流输入开关 (DC SWITCH)，输入路数与接入端子的选择推荐见下表。

输入路数	逆变器直流输入端子
1	PV1
2	PV1、PV2
3	PV1、PV2、PV3

● RS485 通信线缆接线

将发货附件中的 GPRS 模块与逆变器的箱体的 4PIN 端口对接起来，注意检查是否牢固，避免安装不紧。连接完成后检查连接处是否存在缝隙。如果有缝隙，请用防火泥将缝隙堵住。

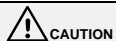
☞ 为了充分利用直流输入功率，同一输入 MPPT 的光伏组串应结构一致，包括相同的型号、相同的电池板数、相同的倾角以及相同的方位角。

5. 安装后检查

1. 确认逆变器已经可靠安装到位	<input type="checkbox"/>
2. 检查地线是否正确连接，连接是否可靠牢固，确保无断路、短路	<input type="checkbox"/>
3. 检查输出线缆是否正确连接，连接是否可靠牢固，确保无断路、短路	<input type="checkbox"/>
4. 检查直流输入线缆连接极性是否正确，连接是否可靠牢固，确保无断路、短路	<input type="checkbox"/>
5. 检查通信模块连接是否正确且可靠牢固	<input type="checkbox"/>
6. 检查逆变器底部所有已使用的接头是否涂上防火泥	<input type="checkbox"/>
7. 检查不需要使用的直流输入端子是否已经密封	<input type="checkbox"/>
8. 检查直流开关 DC SWITCH 是否处于闭合状态	<input type="checkbox"/>



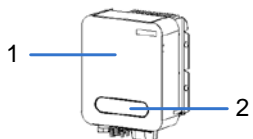
hopeSun Series String Type PV Inverter Quick Installation Guide



- The contents of this manual are subject to irregular updates due to product upgrades or other reasons. Unless otherwise agreed, this manual is only used as guidance. All statements, information and recommendations in the document do not constitute any express or implied warranty.
- In any case, guidance in this manual cannot replace safety warnings and instructions on user manuals and product fuselage.
- All operations of the equipment must be carried out by professionals. Operators should be fully familiar with the composition, working principles and standards of the whole PV system.
- Before installing the equipment, check whether the delivery is complete and whether the body has obvious external damage according to the "packing list". If there is any missing items or any damage, please contact the distributor.
- The following two situations occur and are not covered by the warranty.
 - Remove the tamper-evident label;
 - Equipment damage caused by failure to store, handle, install, and use the equipment in accordance with the requirements of this manual and the user manual.

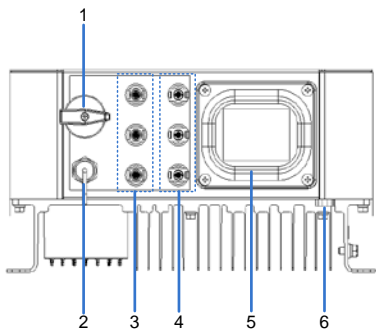
1. Product Introduction

Inverter front



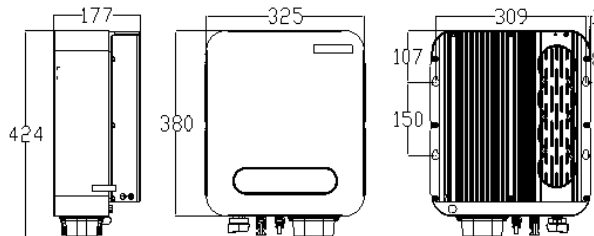
- (1) Door panel
- (2) Indicator

Port description



- (1) DC SWITCH
- (2) PV+ terminals (1+ ~ 3+)
- (3) AC OUTPUT
- (4) Wi-Fi/GPRS communication interface
- (5) PV- terminals (1- ~ 3-)
- (6) AC output terminal waterproof lock

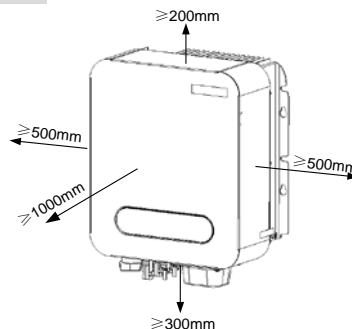
Inverter and hanging plate size



2. Installation Requirements and Tools Preparation

This manual is for installation guidance only. Please refer to the user manual for detailed installation requirements.

Installation Space



Tool preparation

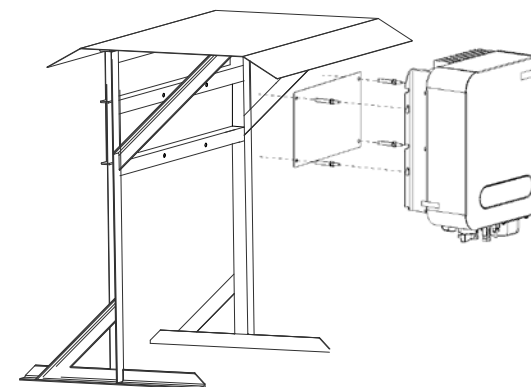
Tools or equipment	Use	Remarks
4# Inner hexagon spanner	Lower doorplate disassembly	
Phillips screwdriver (PH2/PH3)	Fasten the grounding screws and pegboard screws	Bolt specifications: M4 and M6
Tube terminal crimping pliers	Crimp output tube terminal	
Socket wrench	Fixed expansion screw	Bolt specifications: M6
MC4 crimping pliers	Crimp the MC4 terminals	The input cable needs to be crimped into the MC4 terminal before it can be connected to the PV+/PV- terminal on the inverter
MC4 removal tool		
Wire stripper		
Multimeter	Measure voltage to ensure wiring and installation safety	
Safety equipment	Necessary labor protection for construction	Insulating shoes, gloves, etc

3. Inverter Installation

Expansion bolts and combination screws are included in the package of the string inverter. Holes must be punched in the wall or bracket according to the positioning plate before installation, and then the expansion bolts or combination screws must be fixed. Expansion bolt or combination screw.

● Installation steps

- According to the fixed hole size of the hanging plate, use a drill with a diameter of 8mm to punch holes in the wall or bracket, and the wall hole depth is 45 ± 5 mm;
- Install 4PCS M6 casing-reinforced expansion anchors after drilling holes on the wall; or use M6 combination bolts to pass from the back of the bracket to the front and fix it with flat washers / nuts at the front;
- Before mounting the inverter, please ensure that the mounting surface is firm and meets the load requirements;
- Hang the inverter on the screw of the expansion bolt or combination screw, and then use the spring washer / flat washer / nut to lock the inverter.



Avoid direct sunlight, rain and snow, so that the service life of the junction box can be prolonged. It is recommended to choose sheltered installation sites. If they cannot be satisfied, please set up a sun shading shelter.

4. Electrical Connections



- When connecting cables, do not operate live and follow the relevant requirements in the Inverter's Manual.
- Before connecting the cable, please complete the following preparations so as not to cause bodily injury.
 - Disconnect the inverter DC switch. Ensure that the inverter is in shutdown state and attach warning signs.
 - Confirm the positive and negative pole of the input cable and mark it well. Make sure the connection between input cable and PV cluster is broken.
 - It is confirmed that the open circuit voltage of PV cluster does not exceed the specified limit.
 - Confirm that the corresponding AC box circuit breaker is in a state of disconnection.
- When connecting the input cable, ensure that the positive and negative poles of the input cable correspond to the positive and negative poles of the PV terminals of the series inverter.

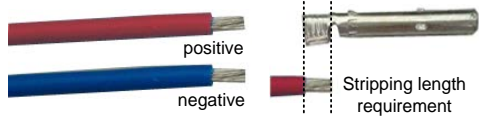
● Output side cable connection

- By protecting the ground wire, the inverter is connected to the grounding bar to achieve the purpose of grounding protection. Use a fixed connection and the cross-sectional area of the protective ground conductor is at least 10mm² (copper) or 16mm² (aluminum). The bolt size is M4.

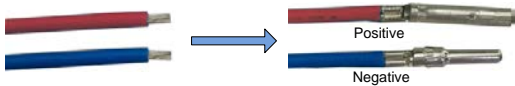
2. AC output cable connection:
 - 1) Screw off the locking cap on the "AC OUTPUT" waterproof lock at the bottom of the inverter.
 - 2) Pass the AC cable into the lock cap and the "AC OUTPUT" waterproof lock at the bottom of the inverter in turn, and connect them to L, N of the AC terminal block in turn, with a tightening torque of 8Nm.

● PV Input Cable Connection

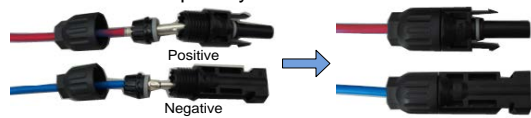
1. Crimp MC4 terminal:
 - 1) Confirm the positive and negative terminals of the input cable and mark them.
 - 2) Stripping with a wire stripper;



- 3) Press the cable together with the corresponding core according to the correct polarity.



- 4) Insert the core into the male and female ends of the MC4 connector and tighten the connector back cover according to the correct polarity.



2. After determining the polarity of the input cable, connect the positive and negative terminals of each input cable to the PV+ and PV- input terminals of the inverter one by one. The positive electrode is connected to PV+ and the negative electrode is connected to PV-

● Cable Selection

Name	Label	Recommended Cable Specifications	Note
PV branch input cable	1+ ~3+ 1- ~ 3-	Industry general PV cable, model: PV1-F It is recommended to use a cable with a cross sectional area of 4.0mm ² for each PV + and PV- branch	--
AC output cable	L; N	3 core outdoor cable Recommended cross sectional area of conductor:10mm ²	The AC output has only 1 waterproof locks with a specification of 18mm~25mm
RS485 communication cable		It is recommended to use a special communication cable or 4-core or 2-core shielded twisted pair cable with a cross-sectional area of not less than 0.75mm ² .	--
PE ground cable	PE	Use a fixed connection and the cross-sectional area of the PE cable is at least	--

Name	Label	Recommended Cable Specifications	Note
		10mm ² (copper) or 16mm ² (aluminum)	


● DC Input Terminal Selection

The inverter has a DC input switch (DC SWITCH). The number of input circuits and the selection of access terminals are recommended in the table below.

Number of input channels	DC input terminal of inverter
1	PV1
2	PV1、PV2
3	PV1、PV2、PV3

● RS485 Communication Cable Connection

Connect the GPRS module in the delivery accessory to the 4PIN port of the inverter's cabinet, pay attention to check whether it is firm, and avoid loose installation. After the connection is completed, check whether there is a gap in the connection. If there are gaps, plug them with fireproof mud.

 In order to make full use of the DC input power, the PV strings of the same input MPPT should be identical in structure, including the same model, the same number of panels, the same tilt angle, and the same azimuth.

5. Post-installation Check

1. Confirm that the inverter is securely installed in place	<input type="checkbox"/>
2. Check if the ground wire is properly connected, whether the connection is reliable and secure, and ensure that there is no open-circuit or short-circuit	<input type="checkbox"/>
3. Check that the output cable is properly connected, that the connection is reliable and secure, and that there is no open-circuit or short-circuit.	<input type="checkbox"/>
4. Check whether the DC input cable connection polarity is correct, whether the connection is reliable and secure, and ensure that there is no open-circuit or short-circuit.	<input type="checkbox"/>
5. Check if the communication module is connected correctly and reliably	<input type="checkbox"/>
6. Check that all used joints on the bottom of the inverter are coated with fireproof mud	<input type="checkbox"/>
7. Check if the DC input terminals that are not needed are sealed	<input type="checkbox"/>
8. Check if DC SWITCH is closed	<input type="checkbox"/>

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