



JV WITH KONKA
CHINESE STATE OWNED COMPANY

晟高中&英文安装指导

Installation Guide for SUNGO (CN & EN)

英文安装指导.....P01~P11
English Installation Guide.....P01~P11

中文安装指导.....P12~P22
Chinese Installation Guide.....P12~P22

与阳光同行，优化不停

GO WITH SUNSHINE, ALWAYS OPTIMIZED

SUNGO

JV WITH KONKA
CHINESE STATE OWNED COMPANY

Installation Guide of PV Optimizer

SUNGO OPT PRO



1. Important Safety Precautions



This manual includes installation instructions for PV optimizer, from SUNGO Energy Technology(Jiangsu) Co.,Ltd. (known as "SUNGO").



DO NOT open, disassemble or repair PV optimizer , for your life security.All these operations should be operated by trained and qualified.



Before installing and using PV optimizer, please read and understand ALL NOTICES and WARNINGS on the PV optimizer, and also please read and understand related instructions in manuals of PV inverters and PV Modules.



For fire and electric shock risks, please strictly follow local electric codes and standards.



Installation must be operated by trained professional persons. SUNGO would reject warranty or compensation for damages caused by improper installation, operation and use.



Before installation, please remove your metal decorations, to reduce electric shock risks. DO NOT install or commissioning in bad weather.



Before commission , please check and make sure all cables are connected correctly and firmly.



DO NOT connect or disconnect PV optimizer underload. Please shut down inverter before connecting or disconnecting PV optimizer.

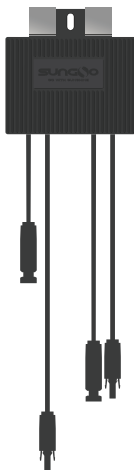


If any PV optimizer from SUNGO is damaged before installation , please DO NOT install or operate.



For any help, please contact SUNGO.

2. About PV Optimizer



Features



Module-level MPPT, no more worries of shading, power generation increased up to **30%**



Convenient installation, wide range of adaptability, suitable for operating power plant renovation and new power plant installation



Compatible with all modules on the market and over 99% of inverters



25 years products replacement warranty

3. Technical Specification

Model		SUNGO OPT PRO
DC Input		
Max input power		800W
Max voltage		70V
MPPT voltage range		7~60V
Max continuous input current		21A
Max input short-circuit current		23A
Night self-consumption		0W
DC Output		
Rated output voltage		58V
Max continuous output current		21A
Max output power		780W
Max system voltage		1500V
Efficiency		
Peak efficiency		99.7%
Power loss @5A		0.9W
Power loss @8A		1.4W
Power loss @12A		2.9W
Power loss @15A		4.5W
Power loss @20A		7.2W
General Data		
Dimensions (W*D*H)		103*21.3*105.3mm
Weight		0.65kg
Input/output cable length		IN+ 200 / IN- 1100 / OUT+ 750 / OUT- 750mm
Input/output cable size		4mm ² (12AWG) / 4mm ² (12AWG)
Terminals		MC4(compatible)
Protection rating		IP67/NEMA6
Relative humidity		0-100%RH
Operating temperature range		-40~+60°C
Cooling		Natural cooling
Overvoltage category		OVC II
Maximum altitude		≤4000m
Certification		CE
EMC		EN IEC 61000-6-1:2019EN IEC 61000-6-2:2019EN IEC 61000-6-3:2021ENIEC 61000-6-4:2019
Packaging		20pcs/CTN 1080pcs/pallets (20GP)

4. Installation Instructions

4.1 Tools

Following tools would be needed for installation, check and replace:



Phillips screwdriver



Allen wrench



Multimeter



Clamp ammeter



MC4 connector wrench



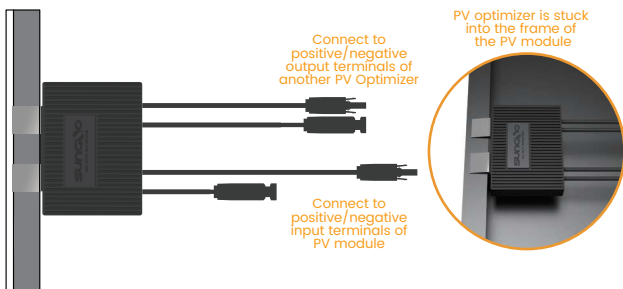
4.2 Steps

Step 1.

Shut down PV inverter, disconnect PV modules from arrays and strings.

Step 2.

Install PV Optimizer on the frame of PV modules.

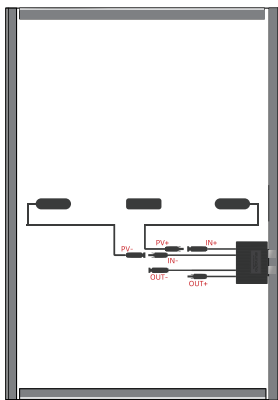


For clips

Attach PV optimizer to PV module frame, push the clips hardly. If the frame get to the bottom of the clips, installation is accomplished.

Step 3: Connect input cables

- Connect the positive output (PV+) connector of the PV module to the positive input (IN+) connector of the optimizer.
- Connect the negative output (PV-) connector of the PV module to the negative input (IN-) connector of the optimizer.
- Repeat the above actions to complete the input wire connection for all photovoltaic modules and ensure that the connectors are securely connected.



⚠ Caution!

In installation

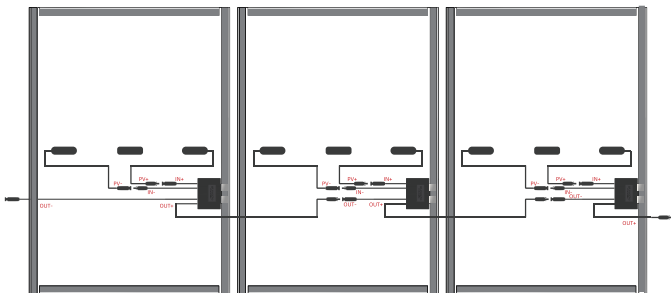
Input cables of PV optimizer MUST be connected first, output cables of PV optimizer should be connected second.

In disassembly

Output cables of PV optimizer MUST be disconnected first, input cables of PV optimizer should be disconnected second.

Step 4: Connect output cables into strings

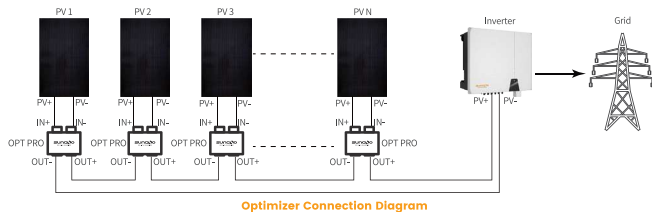
- Connect the positive output (OUT+) connector of the first optimizer in the series to the negative output (OUT-) connector of the second optimizer in the series; Repeat the above actions until the group string connection is complete.



Step 5: Connect the strings to PV inverter

Connect the (OUT-) of the first optimizer to the (PV-) of the inverter and then connect the (OUT+) of the last optimizer to the (PV+) of the inverter.

The second string repeats the connection of the first string.



Step 6. Inverter startup

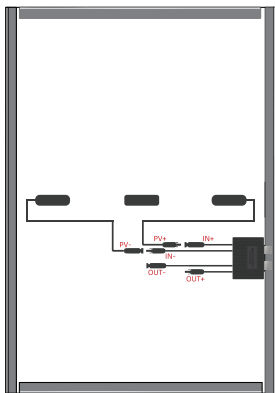
Check all connections of entire system, then turn on PV inverter.

5. Detection Method

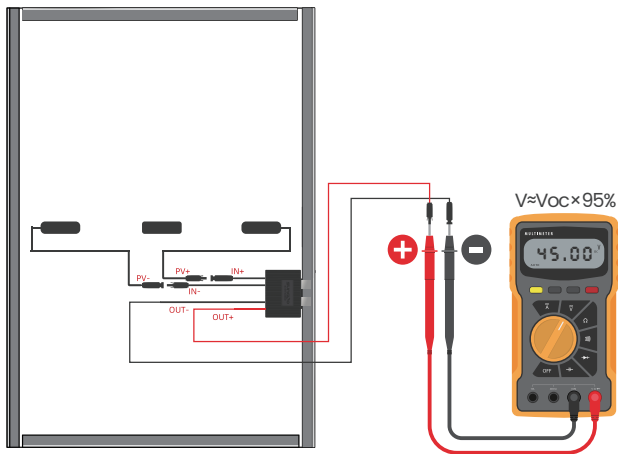
Notice

Make sure the optimizer input (IN) and output (OUT) are wired correctly. If the connection is reversed, the device may be damaged.

Connect the optimizer input (IN) to the pv junction box.



Use the positive pen of the multimeter to connect the positive output of the optimizer, and the negative to connect the negative output, and check the output voltage of a single optimizer.



Voltage	Reason	Solve suggestion
$V \approx V_{oc} \times 95\%$	Optimizer normal	—
$V < V_{oc} \times 30\%$	Optimizer fault	Replacement optimizer
$V_{oc} \times 30\% < V < V_{oc} \times 95\%$	<ul style="list-style-type: none"> ·Weak light ·The optimizer is wired incorrectly ·Optimizer fault 	<ol style="list-style-type: none"> 1. Voltage is measured when light is sufficient 2. Connect the optimizer input cable 3. Adjust the optimizer cable connection and connect the optimizer input cable to the PV module output 4. If the voltage is still abnormal, replace the optimizer

6.Contact Information

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SUNGO

GO WITH SUNSHINE

中国央企康佳合资伙伴

光伏优化器安装指导

SUNGO OPT PRO



1. 安装必读



本安装手册是对晟高能源科技的优化器的安装使用相关说明。



严禁打开外壳、拆卸、修理产品，以确保人员安全。如需服务，请找经过培训或有资格的专业人员。



安装和使用优化器前，请先了解产品上的所有提示和警告，以及逆变器说明书和光伏组件安装说明书中关于安全提示相关部分和其他适用的安全指南。



为了减少火灾和触电的危险，安装此装置请严格遵守当地的电气标准和规范。



安装必须由经过培训的专业人士进行。因对本产品的不当操作、不适安装或误用而造成的损失或伤害，本公司不承担责任。



在安装优化器前，请取下随身佩戴的金属饰品，以减少接触带电电路的风险，严禁在恶劣天气下进行安装调试。



上电使用前，请检查确认电缆已正确、可靠地连接。



有负载的情况下不要连接或断开优化器。如需连接或断开优化器，请先将逆变器停机或断开负载。

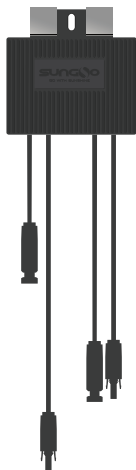


如果优化器产品已经受到实际损坏，请勿操作。



如需其他帮助，可致电晟高能源科技咨询。

2. 关于优化器



特点



组件级MPPT, 不惧遮挡, 发电量最高提升**30%**



安装便捷, 适配性广, 适合运行中电站改造和新建电站安装



兼容市面上所有组件和99%以上逆变器



25年超长质保, 稳定性强

3. 技术规格

型号	SUNGO OPT PRO
直流输入	
最大输入功率	800W
最大电压	70V
MPPT 电压范围	7-60V
最大持续输入电流	21A
最大输入短路电流	23A
夜间自耗电	0W
直流输出	
额定输出电压	58V
最大持续输出电流	21A
最大输出功率	780W
最大系统电压	1500V
效率	
峰值效率	99.7%
功耗 @5A	0.9W
功耗 @8A	1.4W
功耗 @12A	2.9W
功耗 @15A	4.5W
功耗 @20A	7.2W
常规数据	
尺寸 (W*D*H)	103*21.3*105.3mm
重量	0.65kg
输入/输出电缆长度	输入+ 200 / 输入- 1100 / 输出+ 750 / 输出- 750mm
输入/输出电缆尺寸	4mm ² (12AWG) / 4mm ² (12AWG)
连接器	MC4(兼容)
保护等级	IP67/NEMA6
相对湿度	0-100%RH
工作温度范围	-40~+60°C
冷却方式	Natural cooling
过压类别	OVC II
最高海拔	≤4000m
认证	CE
EMC	EN IEC 61000-6-1:2019EN IEC 61000-6-2:2019EN IEC 61000-6-3:2021ENIEC 61000-6-4:2019
包装信息	20pcs/箱 1080pcs/托(20GP)

4. 安装说明

4.1 工具

安装、检查及更换时，需要用到如下工具：



十字螺丝刀
(十字花型-M4)



内六角扳手



万用表



钳流表



MC4连接器扳手



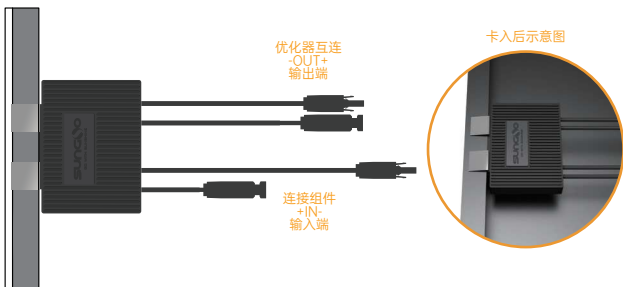
4.2 安装步骤

步骤1.

安装优化器前，先确保逆变器停机，并断开逆变器与组件阵列的连接

步骤2.

优化器安装到组件边框。

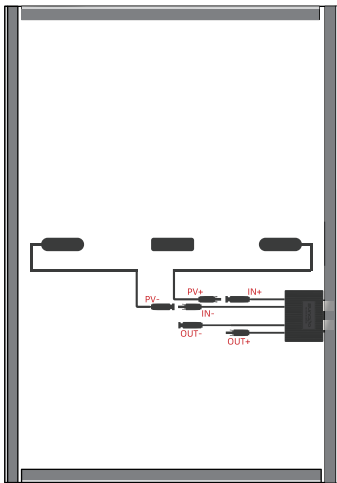


卡扣安装方式

将优化器通过卡扣卡在光伏背面的外框上，将卡子完全卡入外框即安装完毕。

步骤3. 输入线连接

- 将光伏组件的正极输出 (PV+) 接头与优化器的正极输入 (IN+) 接头相连
- 将光伏组件的负极输出 (PV-) 接头与优化器的负极输入 (IN-) 接头相连。
- 重复上述动作对所有组件完成输入线连接并确认接头连接牢固。



⚠ 注意!

安装时

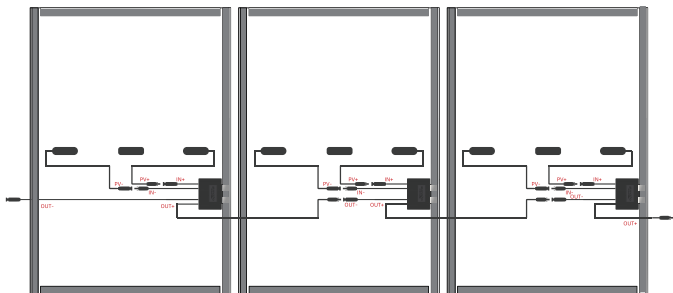
必须先连接优化器的输入线，再连接优化器的输出线。

拆下时

必须先断开优化器的输出线，在断开优化器的输入线。

步骤4. 输出线连接形成组串

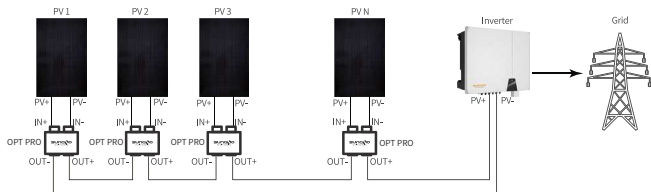
- 将组串中第一台优化器的正极输出 (OUT+) 接头与该组串中第二台优化器的负极输出 (OUT-) 接头连接；重复上述动作，直至完成组串连接。



步骤5. 组串并入逆变器

将第一个优化器的 (OUT-) 连接至逆变器的 (PV-), 然后将最后一个优化器的 (OUT+) 连接至逆变器的 (PV+)。

第二个组串重复第一个组串的连接。



优化器连接示意图

步骤6. 逆变器开机

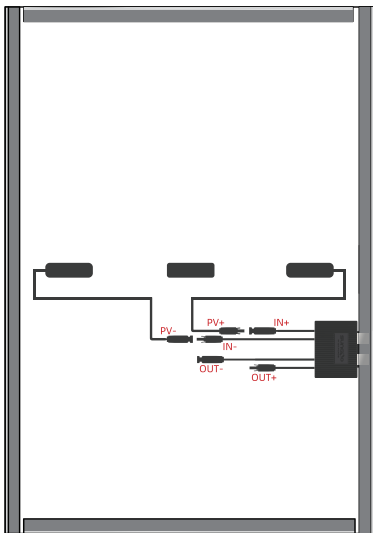
确认系统连接无误, 逆变器开机。

5. 检测方式

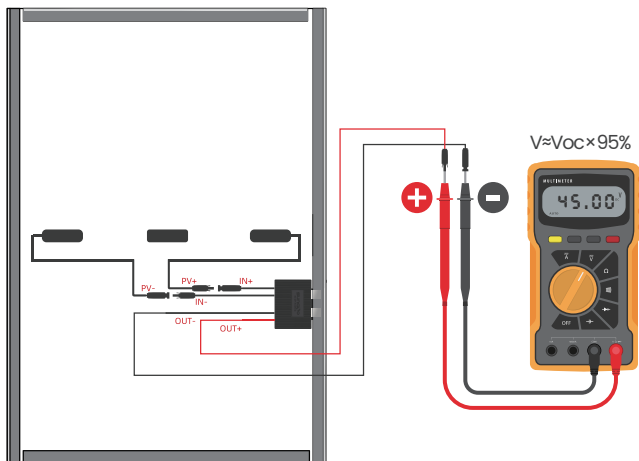
须知

确保优化器输入 (IN) 与输出 (OUT) 接线正确。如果接反, 会造成设备损坏。

将优化器输入 (IN) 连接光伏接线盒。



使用万用表正表笔连接优化器输出正极, 负表连接输出负极, 检查单个优化器输出的电压。



电压值	原因	处理建议
$V \approx V_{oc} \times 95\%$	优化器无异常	——
$V < V_{oc} \times 30\%$	优化器故障	更换优化器
$V_{oc} \times 30\% < V < V_{oc} \times 95\%$	<ul style="list-style-type: none"> · 光照弱 · 优化器输入未连接 · 优化器接线错误 · 优化器故障 	<ol style="list-style-type: none"> 1. 在光照充足时测量电压。 2. 连接优化器输入线缆 3. 修正优化器线缆连接，将优化器输入线缆连接光伏组件输出 4. 如果电压依然异常，需更换优化器

6. 联系方式

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微信公众号



视频号



抖音

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