禾川科技官方网站

HPPG0000001-00C
Date 2024-09-12
CN 安装说明
EN Instruction Sheet

⚠ 1. 安全注意事项（Safety precautions）

本说明书涉及产品均为封闭型外壳设计。为减少烫伤的危险，要求用户使用产品时勿触摸逆变器的外壳。并且需要设置保护措施以防止非维护人员不当操作或意外导致设备故障或损坏，造成不可避免的人员危险和财产损失。

The products involved are all enclosure-type housing designs. It is required that users do not touch the product's housing during operation to decrease the risk of burns. It is also necessary to set up protective precautions to avoid any malfunction or damage to the equipment caused by improper operation of non-maintenance personnel or accidents, resulting in unavoidable danger to personnel and damage to property.

更详细的信息请参考 EQ3 系列硬件手册。

Please refer to the EQ3 series hardware manual for more detailed information.

2. 通用电气及环境规格（General electrical and environmental specifications）

2.1 通用电气规格（General electrical specifications）

型号（Model）	额定功率（Rated power）：W	额定电压（Rated voltage）	型号（Model）	额定功率（Rated power）：W	额定电压（Rated voltage）
EQ3-350-1D	350	启动电压：DC22V，工作电压范围：DC16~60V Start-up voltage: DC22V, operating voltage range: DC16~60V	EQ3-900-2S	900	启动电压：DC22V，工作电压范围：DC16~60V Start-up voltage: DC22V, operating voltage range: DC16~60V
EQ3-350-1S	350		EQ3-900-2D	900	
EQ3-400-1D	400		EQ3-1000-2S	1000	
EQ3-400-1S	400		EQ3-1000-2D	1000	
EQ3-450-1D	450		EQ3-1400-4S	1400	
EQ3-450-1S	450		EQ3-1400-4D	1400	
EQ3-500-1D	500		EQ3-1600-4S	1600	
EQ3-500-1S	500		EQ3-1600-4D	1600	
EQ3-700-2S	700		EQ3-1800-4S	1800	
EQ3-700-2D	700		EQ3-1800-4D	1800	
EQ3-800-2S	800		EQ3-2000-4S	2000	
EQ3-800-2D	800		EQ3-2000-4D	2000	

* 注：所有型号均为安全特低电压输入产品。

*Note: All models are featured by the SELV input type.

2.2 环境规格（Environmental specifications）

项目	Item	规格	Specifications
使用环境	Operating environment	室外使用	Outdoor use
工作温度	Operating temperature	-40~65℃	-40~65℃
储存温度	Storage temperature	-40~80℃	-40~80℃
冷却方式	Cooling method	自然冷却	Natural air cooling
防护等级	IP rating	IP67	IP67
外壳材质	Enclosure material	阻燃材料	Self-extinguishable

* 注：如果以制造商未规定的方式使用设备，可能会损坏设备。

*Note: The equipment may be damaged if used in a manner not specified by the manufacturer.

3. 安装说明（Installation instructions）

3.1 整机安装及配件（ Microinverter installation and accessories ）

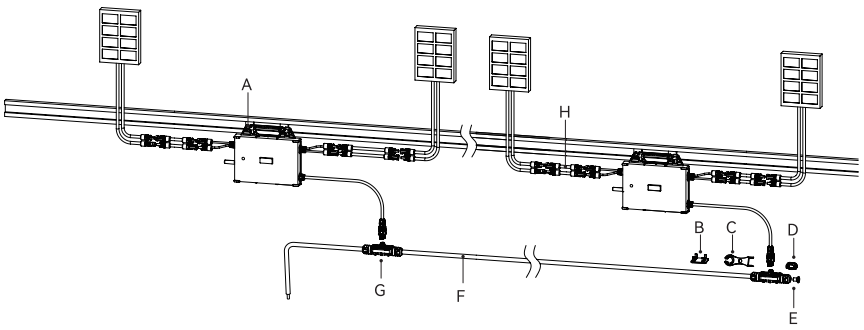
CN

将微型逆变器和所有直流连接安装在光伏组件下方，避免阳光直射、雨水暴露、积雪和紫外线等。在微型逆变器外壳周围至少留出 2 厘米的空间，以确保通风和散热。光伏模块应连接到微型逆变器的直流输入端口。当原始电缆不够长时，使用直流延长电缆，典型的接线方法如右所示。

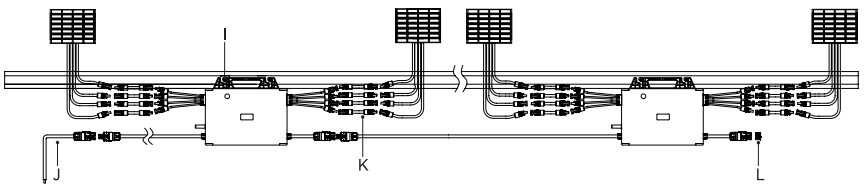
EN

Please install the microinverter and all DC connections under the PV module to avoid direct sunlight, rain, snow, and UV. Allow at least 2 cm of clearance around the microinverter housing to ensure effective ventilation and heat dissipation. The PV microinverter module should be connected to the DC input port of the microinverter. Use a DC extension cable when the length of the original cable is not long enough. The typical wiring method is shown on the right side.

单端输出-T型总线安装与配件（Single-ended output-T-bus installation and accessories）



双端输出-手拉手总线安装与配件（Dual-ended output-Hand-in-hand bus installation and accessories）



项目（Item）	描述	Description	项目（Item）	描述	Description
A	M8螺丝	M8 screws	G	交流T型总线连接器	T40M
B	交流T型总线连接器拆卸工具	T bus tool	H	1m直流延长电缆	PV cable
C	交流T型总线扳手	T40M spanner	I	M8螺丝	M8 screws
D	交流T型总线连接器防护盖	T40M cap	J	交流手拉手总线母头2m延长电缆	H25F cable
E	交流T型总线连接器堵头	T40M plug	K	1m直流延长电缆	PV cable
F	交流T型总线电缆	T bus cable	L	交流手拉手总线母头防护盖	H25F cap

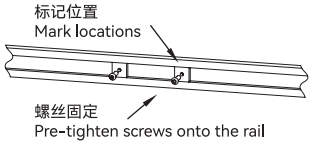
* 注：产品接地方式可选产品输出线接地和挂手处接地螺丝接地。

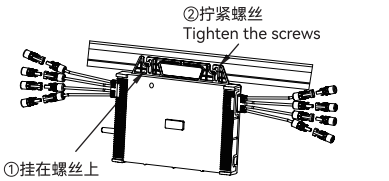
*Note: The product grounding can be conducted either by the product output cable grounding or by the grounding screw grounding at the hanging handle.

3.2 导轨拆装（Rail mounting and dismounting）

CN 安装：根据光伏组件布局在导轨上标记每个逆变器的位置，将螺丝钉预缩，固定在导轨上。将微型逆变器挂在螺丝上，微型逆变器的银色盖子一侧应朝向面板，然后拧紧螺钉。M8 螺钉的安装扭矩应为 9 N·m。拆卸：拧开螺丝可拆卸逆变器。

EN Mounting: Mark the locations of each microinverter on the rails according to the layout of the PV modules. First pre-tighten screws so that they are secured onto the rail. Next, hang the microinverter on the screws with its silver cover side facing the panel. Finally, tighten the screws to complete the mounting (the torque for M8 screws should be 9 N-m). Dismounting: The microinverter can be removed from the rail by unscrewing the screws.

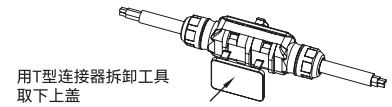


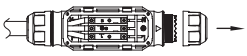


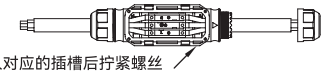
⚠ 3.3 线缆拆装（Cable connecting and disconnecting）

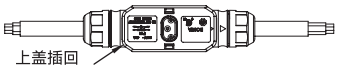
CN 安装：先使用 T 型连接器拆卸工具将 T 型总线连接器上盖取下，再拧开 T 型总线连接器盖子，将剥开末端绝缘护套的线缆插入盖中，确保火线（L），零线（N）和地线（PE）处于对应的插槽中，拧紧螺丝后将端口盖拧紧，最后将上盖插回 T 型总线连接器。

EN Connecting: Remove the upper cover with the T bus tool first, then unscrew the T40M cap. Insert the live wire (L), naught wire (N), and ground wire (G) into the corresponding slots, tighten the screws, and then screw the T40M cap. Finally, plug the upper cover back into the T bus connector.





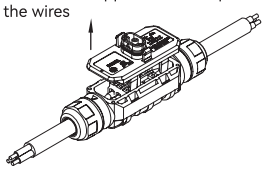




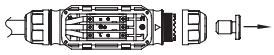
CN 拆卸：先使用 T 型连接器拆卸工具将 T 型总线连接器上盖取下；再用螺丝刀将三个螺钉拧松，拧开 T 型总线连接器盖子后可以拆除线缆；将 T 型尾端保护盖拧入端口；最后盖上 T 型支线端口保护盖。

EN Disconnecting: Remove the upper cover with the T bus tool first, then loosen the three screws with a screwdriver. Unscrew the T40M cap to pull out the wires. Insert the T40M plug into the T40M cap and then screw T40M cap back into the port. Finally, plug the upper cover back into the T bus connector and snap the T40M cap.

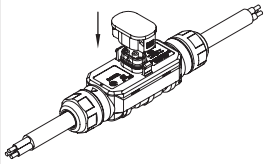
取下上盖，拆除线缆
Remove the upper cover and pull out the wires



拆除线缆后拧入T 型总线连接器堵头
Insert the T40M plug into the T bus connector



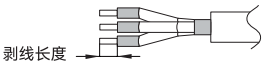
盖上T 型总线连接器防护盖
Snap the T40M cap



CN 请使用 10 或 12 线径的交流线缆，电缆长度根据光伏组件的布局来规划，按照右图所示剥开末端的绝缘层。

EN Please use 10 or 12 AWG AC wires. The length of cables is planned according to the layout of the PV modules. The insulation of cables should be stripped at the end according to the figure shown on the right.

L 红色（Red）	G 黄绿色（Yellow-green）	N 黑色（Black）
		



线径范围：AWG (Wire width)	剥线长度：mm (Wire stripping length)
10~12	8~10

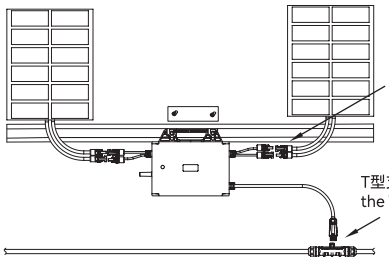
⚠ 警告：仅使用铜导线。
Warning: Use copper conductors only.
Attention: Utilisez uniquement des conducteurs en cuivre.

3.4 整机拆装（Microinverter connecting and disconnecting）

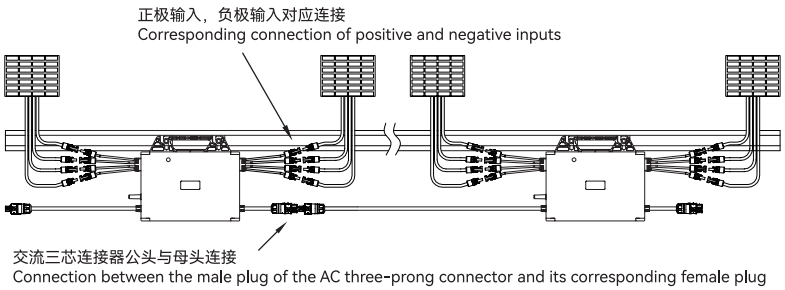
CN 安装：将光伏组件的正极输出连接器连接到微型逆变器的正极输入，将组件的负极输出连接器连接到微型逆变器的负极输入。
单路交流输出的微型逆变器将 T 型支线连接器直接插入 T 型总线连接器接入电网。
双路交流输出的微型逆变器的交流三芯连接器公头 / 母头可与其他双路交流输出的微型逆变器连接，也可以通过安装 T 型支线连接器接入电网。

EN Connecting: Connect the positive output connection of the PV module to the positive input port of the microinverter and the negative output connection of the module to the negative input port of the microinverter.
Plug the T branch connector into the T bus connector until it clicks.
The three-prong male/female AC plug of the dual-channel AC output micro-inverters can be connected to other dual-channel AC output microinverters or connected to a grid by installing the T branch connectord.

单路交流输出（Single-channel AC output）



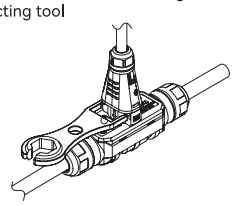
双路交流输出（Dual-channel AC output）



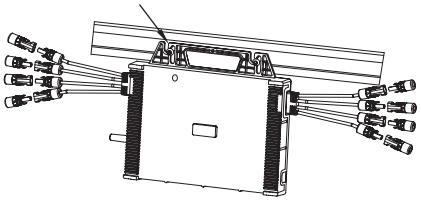
CN 拆卸：断开支路交流侧短路器的电源，使用钳形表检测，确保光伏组件和微型逆变器之间的直流线缆中无残留电流。使用 T 型支线端口断开工具断开交流接头后拆下直流正负极输入。拧开微型逆变器顶部的固定螺丝，将设备从光伏机架的导轨上取下来。

EN Disconnecting: Disconnect the power of the AC side circuit breaker and use a clamp meter to ensure that there is no residual current in the DC cable between the PV modules and the microinverter. Remove the DC positive and negative inputs after disconnect the AC connector using the T branch port disconnecting tool. Unscrew the screws with the PV microinverter on them and remove the microinverter from the rail of the PV rackmount.

T型支线端口断开工具断开交流接头
Disconnect the AC connector using the T branch port disconnecting tool



拧开螺丝后取下微型逆变器
Remove the microinverter after unscrewing the screws



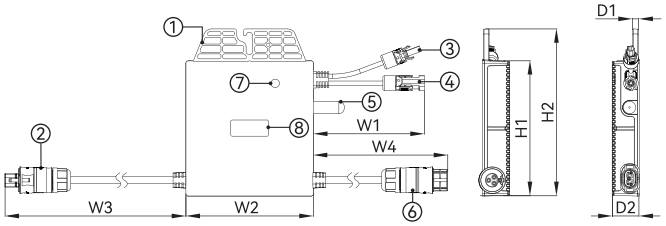
4. 接口说明（Interface instructions）

序号(No.)	项目	Item
1	把手	Handle
2	交流三芯连接器公头	Three-prong male AC plug
3	光伏输入负极	PV input-
4	光伏输入正极	PV input+
5	天线	Antennae
6	交流三芯连接器母头	Three-prong famale AC plug
7	指示灯	Indicator
8	标签 *	Label*
9	交流 T 型支线连接器	AC T branch connector

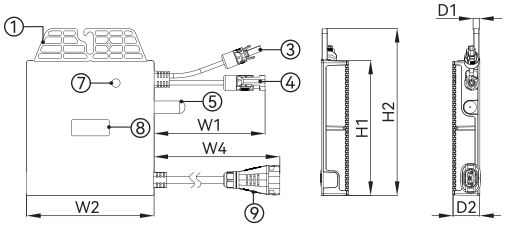
* 注：标签位于设备背面。

*Note: The Label is located on the back side of the device.

EQ3-□□□-1D



EQ3-□□□-1S



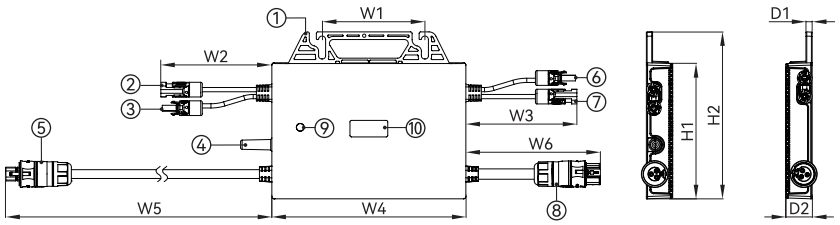
型号（Model）	外形尺寸（Dimension）：mm								重量（Weight）：kg
	W1	W2	W3	W4	H1	H2	D1	D2	
EQ3-350-1D	150	165	2000	200	174	216.3	7.5	35	2.5 approx.
EQ3-400-1D									
EQ3-450-1D									
EQ3-500-1D									
EQ3-350-1S				150					2.0 approx.
EQ3-400-1S									
EQ3-450-1S									
EQ3-500-1S									

序号(No.)	项目	Item
1	把手	Handle
2	光伏输入 2 正极	PV input2+
3	光伏输入 2 负极	PV input2-
4	天线	Antenna
5	交流三芯连接器公头	Three-prong male AC plug
6	光伏输入 1 负极	PV input1-
7	光伏输入 1 正极	PV input1+
8	交流三芯连接器母头	Three-prong female AC plug
9	指示灯	Indicator
10	标签 *	Label*
11	交流 T 型支线连接器	AC T branch connector

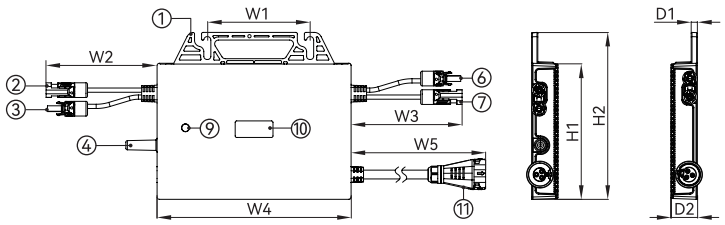
* 注：标签位于设备背面。

*Note: The Label is located on the back side of the device.

EQ3-□□□-2D



EQ3-□□□-2S



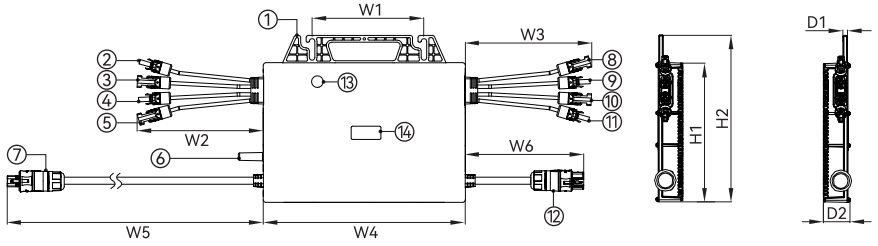
型号（Model）	外形尺寸（Dimension）：mm									重量（Weight）：kg
	W1	W2/W3	W4	W5	W6	H1	H2	D1	D2	
EQ3-700-2D	133	150	251	2000	200	176	216	11.5	34	3.5 approx.
EQ3-800-2D										
EQ3-900-2D										
EQ3-1000-2D										
EQ3-700-2S				500	—					3.0 approx.
EQ3-800-2S										
EQ3-900-2S										
EQ3-1000-2S										

序号(No.)	项目	Item
1	把手	Handle
2	光伏输入 2 负极	PV input2-
3	光伏输入 2 正极	PV input2+
4	光伏输入 1 负极	PV input1-
5	光伏输入 1 正极	PV input1+
6	天线	Antenna
7	交流三芯连接器公头	Three-prong male AC plug
8	光伏输入 3 正极	PV input3+
9	光伏输入 3 负极	PV input3-
10	光伏输入 4 正极	PV input4+
11	光伏输入 4 负极	PV input4-
12	交流三芯连接器母头	Three-prong famale AC plug
13	指示灯	Indicator
14	标签 *	Label*
15	交流 T 型支线连接器	AC T branch connector

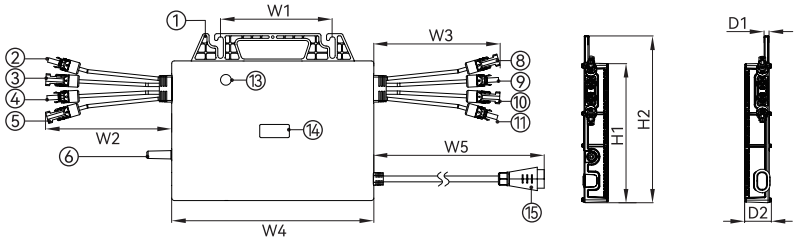
* 注：标签位于设备背面。

*Note: The Label is located on the back side of the device.

EQ3-□□□□-4D



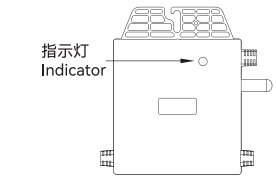
EQ3-□□□□-4S

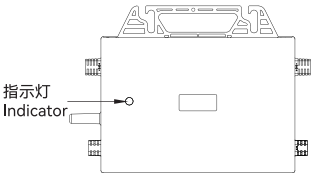


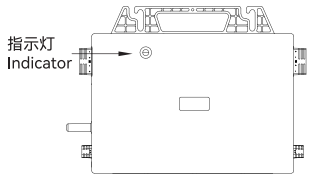
型号（Model）	外形尺寸（Dimension）：mm									重量（Weight）：kg
	W1	W2/W3	W4	W5	W6	H1	H2	D1	D2	
EQ3-1400-4D	181	200	327	2000	200	226	270	8	43	6.5 approx.
EQ3-1600-4D										
EQ3-1800-4D										
EQ3-2000-4D										
EQ3-1400-4S				500	—					6.0 approx.
EQ3-1600-4S										
EQ3-1800-4S										
EQ3-2000-4S										

5. 指示灯说明（Indicator description）

指示灯含义 (Indicator meaning)	颜色 (Color)	状态	Status	说明	Description
通讯状态 (Communication status)	绿色 / 红色 (Green/Red)	闪烁 1	Blinking I	等待并网	Waits for grid connection
PV 输入状态 (PV input status)	绿色 (Green)	闪烁 1	Blinking I	一路并网发电正常，三路输入异常	One input channel is connected to the grid and generates electricity normally. Three input channels are abnormal.
		闪烁 2	Blinking II	两路并网发电正常，两路输入异常	Two input channels are connected to the grid and generate electricity normally. Two input channels are abnormal.
		闪烁 3	Blinking III	三路并网发电正常，有一路输入异常	Three input channels are connected to the grid and generate electricity normally. One input channel is abnormal.
		闪烁 4	Blinking IV	PV 均并网发电，输入正常	All PV channels are connected to the grid and generate electricity normally. All input channels are normal.
		常亮	Lit	正在远程升级	Remote upgrade is in progress
设备故障 (Device error)	红色 (Red)	熄灭	Not lit	直流侧连接存在异常	There is an abnormality in the connection of the DC side
		闪烁 1	Blinking I	存在 PV 类故障	A PV-type error exists
		闪烁 2	Blinking II	存在电网类故障	A PV-type error exists
		闪烁 3	Blinking III	存在接地阻抗故障	A ground impedance error exists
		常亮	Lit	存在硬件故障	A hardware error exists







指示灯闪烁频率如下图所示： The indicator blinking frequency is shown below.