Installation / User Manual
安装使用说明书

SMT-I250W

Photovoltaic Grid-connected Microinvertor

并网微型逆变器

Version 1.0

SmartEnergy Electronic Technology Co.,Ltd
www.smartenergy-tech.com
Room 301,Building C, Wujin District Tianan Cyber Park,Changzhou
TEL:0519-85256607 EMAIL:smt@smartenergy-tech.com
常州新智源电子科技有限公司
江苏省常州市武进高新技术产业开发区常武南路 588 号天安数码城 C 幢 301-1、301-2 室
电话:0519-85256607 邮箱: smt@smartenergy-tech.com

Important Safety Instructions

This manual contains important instructions to follow during installation and maintenance of the Photovoltaic Grid-connected Inverter (Microinverter) system. To reduce the risk of electrical shock and ensure the safe installation and operation of the Microinverter system, the following symbol appears throughout this document to indicate dangerous conditions and important safety instructions.

Warning: this symbol is used to identify some important instructions.

Failure to follow these instructions will lead to serious hardware failure or physical danger. Pay special attention to these operations.

重要的安全信息

本手册包含了在安装和维护逆变器时需遵从的重要指示。为了确保逆变器的安装和运行安全以及减少电击的危险，本手册使用下面的安全符号标示一些危险条件和重要的安全指示。

警告：本符号标示出的一些重要的指示如果没有遵从将会导致严重的硬件故障或人身危险。进行这些操作时要特别注意。

Safety Instructions

1 Be aware that only qualified professionals should install or replace Microinverter system.
2 Perform all electrical installations in accordance with local electrical codes.
3 Before installing or using Microinverter system, please read all instructions and warnings in the technical documents and on the Microinverter system itself as well as on the PV array.
4 Be aware that the body of the Microinverter is the heat sink and can reach a temperature of 80°C. To reduce risk of burns, do not touch the body of the Microinverter.
5 Before disconnecting the inverter and PV modules, AC power grid connection must be disconnected.
6 Do not attempt to repair the Microinverter. If it fails, contact Customer Support to obtain an RMA number and start the replacement process. Damaging or opening the Microinverter will void the warranty.
7 Don't expose the connector under directional and pressurized liquid (water injection nozzle, etc.)
8 Don't dip the connector in the liquid continuously.
9 Don't tighten AC connector continuously (for example, it could make the cable of the connector tense or bending)

安全指示

1、只有合格的专业人员才能够进行逆变器的安装和更换。

2、逆变器电气安装需遵从当地电气规范。

3、安装和使用逆变器前请阅读本手册内所有指示和警告以及逆变器和太阳能阵列上的警告标识。

4、为避免烫伤危险，不要接触逆变器外壳。

5、断开逆变器与太阳能组件连接时必须先断开交流侧电网连接。

6、不要尝试去维修微逆变器。如果出现故障，请联系客服获得退货产品授权码并启动退还流程。破坏或打开逆变器将会影响质保。

7、不要将连接器暴露于定向、加压的液体下（喷水口等）。

8、不要将连接器持续浸在液体中。

9、不要将交流连接器持续绷紧（例如：紧绷导致靠近连接器的线缆产生张力或弯曲）。

Microinverter System Introduction

The Microinverter system is used in utility-interactive grid-tied applications, comprised of two key elements:

Microinverter.

DATA Communication controller.

See the below System Chart:

逆变器系统简介

逆变器太阳能系统是并网型应用，包含两个关键设备：

微型逆变器

系统集中控制器

系统图如下图所示：

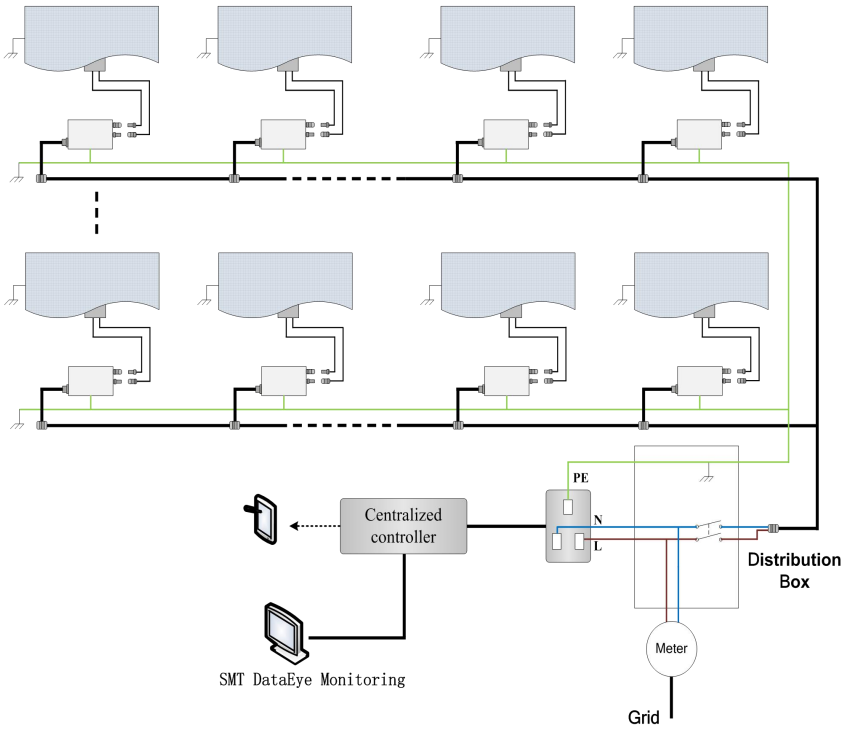

Figure 1

This integrated system maximizes solar energy harvest, increases system reliability, simplifies solar system design, installation, maintenance and management, and improves safety.

本集成系统使能量输出最大化；增加系统可靠性；简化太阳能系统设计、安装、维护和管理；同时提高安全性。

Microinverter Introduction

One Microinverter is connected one PV module. It can operate with 60 and 72 cell PV modules. For more information, please see the Technical Data page of this manual.

Model Number	AC Grid	PV Module
SMT-I250W-CN	220V/50Hz	60,72 cell
SMT-I250W-230-SAA	230V/50Hz	60,72 cell
SMT-I250W-240-cETLus	240V/60Hz	60,72 cell

逆变器简介

每台逆变器与1台光伏组件连接，参数适宜60,72片太阳能组件。更多信息请查看本手册技术规格部分。

型号	并网电压/频率	PV板型号
SMT-I250W-CN	220V/50Hz	60/72 片
SMT-I250KW-230-SAA	230V/50Hz	60/72 片
SMT-I250W-240-cETLus	240V/60Hz	60/72 片

Microinverter System Installation

The Microinverters system is simple to install. Each Microinverter can easily mount on the PV racking, directly beneath the PV modules. Low voltage DC wires from the PV modules can be directly connected to the Microinverter, eliminating the risk of high DC voltage.

WARNING: Perform all electrical installations in accordance with local electrical codes.

WARNING: Be aware that only qualified professionals should install or replace Microinverter system.

WARNING: Before installing or using Microinverter system, please read all instructions and warnings in the technical documents and on the Microinverter system itself as well as on the PV array.

WARNING: Solar array needs to be grounded when installing and using inverter.

WARNING: Do NOT connect Microinverter to the utility grid or energize the AC circuit until you have completed all of the installation procedures as described in the following sections.

逆变器系统安装

采用该逆变器的太阳能系统安装简便，每个逆变器可以很简单的安装在面板的正下方的机架上。面板侧低压直流线可直接连接至微逆变器，消除了高压直流电压险。

警告：需遵从当地电气规范进行电气安装。

警告：只有合格的专业人员才能够进行逆变器的安装和更换。

警告：安装和使用逆变器前请阅读本手册内所有指示和警告以及逆变器和太阳能阵列上的警告标识。

警告：安装和使用逆变器的太阳能阵列需接地。

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警告：在没有按下面描述的步骤完成安装前，禁止将逆变器连接至电网。

Installation Procedures

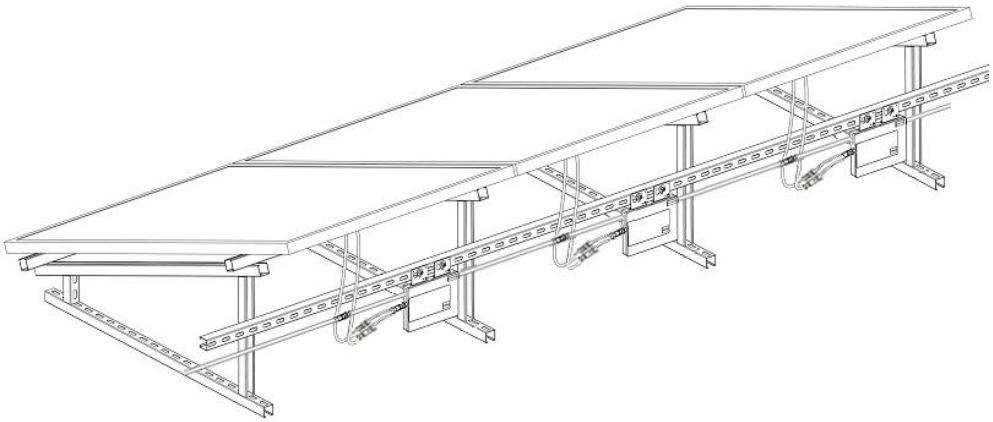

Figure 2

Step 1 - Attach the Microinverter to the rack.

a. Mark the location of the Microinverter on the rack, with respect to the PV module junction box or any other obstructions.

b. Mount each Microinverter in the appointed location by using hardware recommended by your module racking vendor.

安装步骤:

步骤1 - 将逆变器安装在支架上

a. 依据与太阳能面板接线盒或其它障碍物距离等标记出微逆变器在支架上的位置。

b. 使用支架供应商推荐的工具把每台微逆变器固定到指定位置。如下图所示：

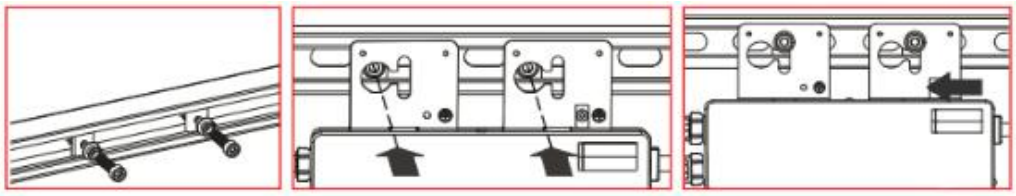

Figure 3

WARNING: Prior to installing any of the microinverters, verify that the utility voltage at the point of common connection matches the voltage rating on microinverter label.

WARNING: Do not mount the Microinverter in a location that allows exposure to direct sunlight. Allow a minimum of 3/4''(1.5cm.) between the roof and the bottom of the Microinverter to allow proper air flow.

警告：安装任何微逆变器之前，确认公共连接点处电网电压符合微逆变器标签上的电压等级。

警告：禁止将微逆变器安装在阳光能直接照射的地方。微逆变器和上面太阳能面板之间间隔至少相隔1.5厘米。

Step 2 - Connect the Microinverter AC cables to the AC bus cable.

步骤 2 - 连接逆变器交流线缆到交流总线

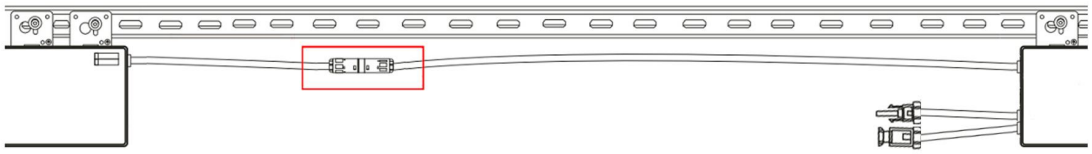

Figure 4

Step 3 - Connect the Microinverter to the PV module

步骤 3 - 将逆变器与太阳能组件连接起来

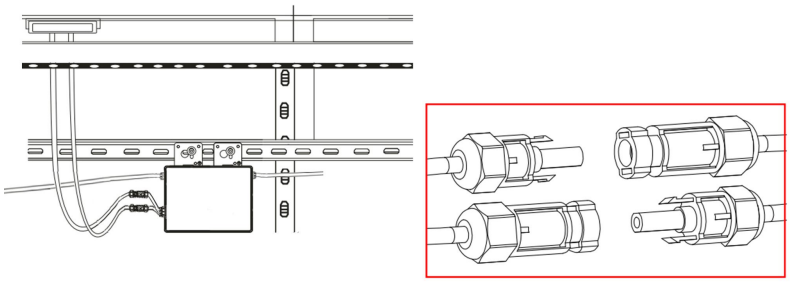

Figure 5

WARNING: Double check to make sure all of the AC and DC wires have been correctly installed. Ensure that none of the AC and/or DC wires are pinched or damaged.

警告：确认所有的交流和直流线缆连接正确，线缆都完好且没有拧在一起。

Microinverter System Operating Instructions

1. Once connected to PV modules, the indicator light of each Microinverters ishould be red.
2. Turn on the main utility-grid AC circuit breaker to make the Microinverter grid-connected. Waiting for about half minutes, the indicator light will turn green, which means the inverter is running normally.
3. After the inverter successfully grid-connected, the data will be transferred the communication controller in power line carrier way, and the communication controller will send data to the client terminal through GPRS or Wifi mode.

逆变器系统运行说明

1. 一旦直流侧上电，每个微逆变器的状态指示灯应为红色常亮。
2. 闭合并网主断路器，使逆变器系统并网。半分钟左右指示灯变为绿灯表示逆变器运行正常。
3.逆变器成功并网后，将数据以电力线载波方式与集中控制器相连，集中控制器通过GPRS或Wifi模式把数据传给客户终端。

Trouble Shooting

To troubleshoot a non-operating Microinverter, follow the steps below in order:

1. Verify the utility voltage and frequency are within ranges shown in the Technical Data section of this manual.
2. Check the connection to the utility grid. Verify utility power is present at the inverter in question by removing AC, then DC power. Never disconnect the DC wires while the Microinverter is producing power. Re-connect the DC module connectors and watch for if the indicator light turns red again.
3. Check the AC branch circuit interconnection between all the Microinverters. Verify each inverter is energized by the utility grid as described in the previous step.
4. Make sure that any AC breaker are functioning properly and are closed.
5. Check the DC connections between the Microinverter and the PV module.
6. Verify the PV module DC voltage is within the allowable range shown
7. If the problem persists, please call customer support.

WARNING: Do not attempt to repair the Microinverter.If troubleshooting methods fail, please return the Microinverter to your distributor for replacement.

新智源微逆变器停机故障排除

遵从下列步骤顺序排除微逆变器停机故障：

1. 验证电网电压和频率是否在该用户手册技术参数表中规定的范围内。
2. 检查与电网的连接。先断开交流侧，再断开直流侧。当逆变器还在工作时，禁止断开其直流侧连接。重新连接直流侧并观察指示灯是否是重为红色。
3. 检查交流支路各微逆变器的连接，确认各逆变器都与电网连接正常。
4. 确认交流测断路器功能正常且闭合。
5. 检查微逆变器与太阳能面板直流侧连接。
6. 验证太阳能组件直流电压是否在该用户手册技术参数表中规定的范围内。
7. 如果问题继续存在，请拨打客户支持电话。

警告：不要尝试去维修逆变器。如果故障排除失败，请退回厂家进行更换。

Replace a Microinverter

Follow the procedure to replace a failed Microinverter

A. Disconnect the Microinverter from the PV Module, in the order shown below:

1. Disconnect the AC by turning off the branch circuit breaker.
2. Cover the module with an opaque cover.
3. Disconnect the first AC connector in the branch circuit.
4. Disconnect the PV module DC wire connectors from the microinverter.
5. Remove the Microinverter from the PV array racking.

B. Install a replacement Microinverter to the rack.

C. Connect the AC cable of the replacement Microinverter and the neighboring Microinverter, connect the DC connector to PV modules, and remove the opaque cover on the PV modules to complete the branch circuit connections.

微逆变器更换

遵从下列步骤更换失效的逆变器：

A. 按照下列顺序将逆变器和太阳能面板连接断开：

1. 断开支路交流侧断路器。
2. 用不透光覆盖物盖住太阳能面板。
3. 断开失效微逆变器与相邻微逆变器交流连接头。
4. 断开太阳能面板和微逆变器直流连接头。
5. 将失效微逆变器从机架上卸下。

B. 安装更换微逆变器到机架上。

C. 连接更换微逆变器与相邻交流连接头，连接太阳能面板和微逆变器直流连接头，拿走太阳能面板覆盖物完成支路连接。

Technical Data

Microinverter Datasheet 技术参数	SMT-I250W-CN	SMT-I250W-230-SAA	SMT-I250W-240-cETLus
Input Data (DC)　直流输入			
Nominal Input Power/额定输入功率	300W	300W	300W
Maximum Input Power/建议最大输入功率	320W	320W	320W
MPPT Voltage Range/MPPT 电压范围	25 V ~45V	25 V ~45V	25 V ~45V
Operation Voltage Range/工作电压范围	22V~ 50V	22V~ 50V	22V~ 50V
Maximum Input Voltage/最大直流输入电压	50V	50V	50V
Minimum Startup Voltage/最小启动电压	22 V	22V	22V
Maximum Input Current/最大直流输入电流	11A	11A	11A
Output Data (AC) 交流输出			
Maximum Output Power/最大输出功率	250 W	250 W	250 W
Nominal Output Power/额定输出功率	225W	225W	225W
Nominal AC Voltage/额定交流电压	220V	230V	240V
Maximum Continuous Output Current/最大交流输出电流	1.1 A	1.24A	1.18A
Default AC Voltage Range /默认交流电压范围	187 V ~ 242 V	207V~264V	212V~263V
Nominal Output Frequency/ 额定输出频率	50Hz	50Hz	60Hz
Default Output Frequency Range/默认交流频率范围	48 Hz ~ 50.5 Hz	45.1Hz~54.9Hz	59.5Hz~60.5Hz
Power Factor/功率因数	> 0.99	>0.99	>0.99
Total Harmonic Distortion/输出电流总谐波畸变率	<5%	<5%	<5%
Efficiency 效率			
Max. Inverter Efficiency/最高转换效率	94.5%	94.5%	94.5%
Normal MPPT Efficiency/ MPPT 跟踪效率	>99%	>99%	>99%
Night Power Consumption/夜间损耗	<200mW	<200mW	<200mW
Mechanical Data 机械数据			
Operating Ambient Temperature Range/工作环境温度	-30℃ to +65℃	-30 °C to +65 °C	-30 °C to +65 °C
Storage Temperature Range/存储环境温度	-30℃ to +65℃	-30 °C to +65 °C	-30 °C to +65 °C
Dimensions (W x H x D) /尺寸（长×宽×高）	215mm × 133mm × 28mm	215mm × 133mm × 28mm	215mm × 133mm × 28mm
Weight/重量	2kg	2kg	2kg
Enclosure Rating/防护等级	IP65	IP65	Type 3
Cooling/冷却方式	自然冷却	Natural Cooling	Natural Cooling
Features & Compliance 其它特征			
Communication/通讯方式	电力线载波	Power Line	Power Line
Design Lifetime/设计运行年限	5/10/15/20 年（可选）	5/10/15/20（optional）	5/10/15/20（optional）
Safety Class Compliance/安全规范	IEC62109-1 ,CNCA/CTS0004: 2009A	IEC62109-1 IEC62109-2	UL1741, CSA C22.2 No.107.1-01
Grid Connection Compliance/电网连接规范	NB/T 32004-2013	AS 4777.2:2005 AS 4777.3:2005	IEEE 1547

质保卡

Warranty Card

客户名称： Customer's Name:					
地址： Address:					
销售日期： Sales Date:	年(Y)　　月(M)　　日(D)				
产品名称： Product Name:	微型逆变器 Moicro-inverter	型号：SMT-I250W Model No.: SMT-I250W			
序列号 Serial No.		质保期 Warranty Period			备注 Remark
		5 年 5years	10 年 10years	15 年 15years	

*保修期从销售日算起

Warranty period is subject to the sales date.

常州新智源电子科技有限公司

SmartEnergy Electronic Technology(Changzhou)Co.,Ltd

江苏省常州市武进高新技术产业开发区天安数码城 C 幢 301-1、301-2 室

Room 301-1,301-2,Block C,Tianan Cyber Park,Wujin High-tech Industry Development Zone,Changzhou,Jiangsu 213164,P.R. China

Tel：0519-85256607

Fax：0519-85256607