eSolar RS485 Kit

Installation Manual

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Content

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1 Introduction

1.1 Product Introduction

Installation and configuration instructions about eSolar RS485 Kit will be introduced in this installation Manual.

eSolar-RS485 Kit include eSolar WiFi-485 and eSolar MeterS-485.

SAJ Sununo Plus inverters could be matched with this set of device to realize power limit control function.

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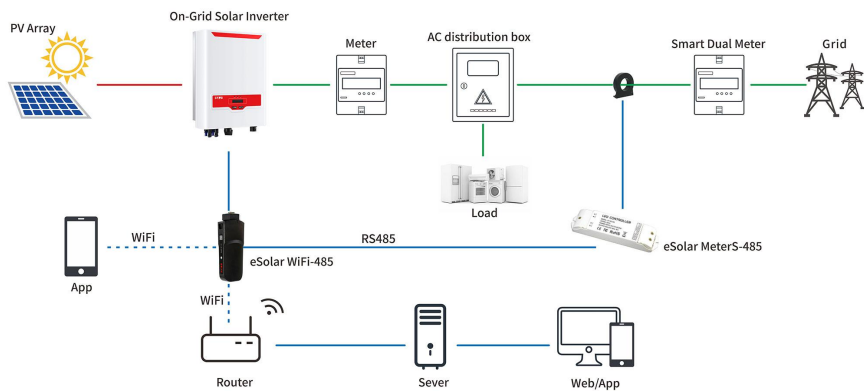## 1.2 System Diagram

Figure 1-1 Diagram with eSolar RS485 Kit

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2 Installation Instruction

2.1 Pre-Installation Check

2.1.1 Package Checking

Though the products passed the factory severe test and checking before delivery from the factory, damage may happen during delivery process. When the goods arrived, before signing for acceptance, please check the package to see if there's any damage or deformed to the package box. If the packaging is damaged/deformed, please don't open the package but contact with the distributors/SAJ as soon as possible.

2.1.2 Accessories Checking

Accessory items and quantity information can be found through the sticker on the packing box. Please check and contact distributors/SAJ if there is any accessory missing.

2.2 Installation Instructions

The installation manual is with installation instructions to eSolar RS485 Kit

2.2.1 Installation Steps

Installation instructions to eSolar RS485 Kit

Step 1: eSolar WiFi-485 Installation Instructions

①Material Preparement:Users shall prepare a cable (cable diameter suggested:

φ5.0mm~φ7.0mm) and bring all the accessories that prepared by SAJ;

![SAJ logo]

②Lead the cable through the sheath and connect the cable with eSolar WiFi-485;
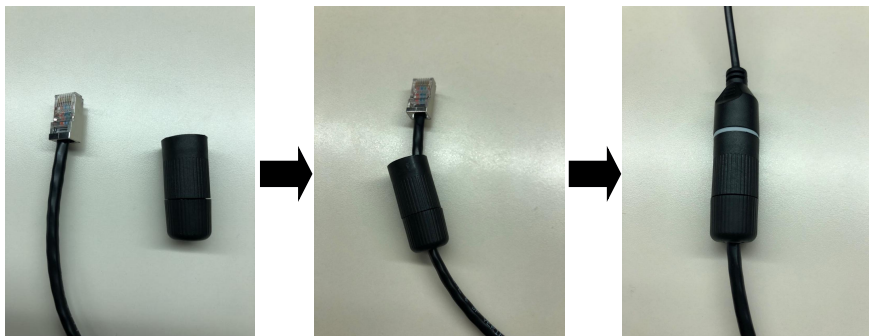
③Screw up the sheath in clockwise direction.

Figure 2-1

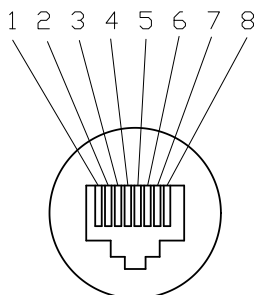**Figure 2-2**   RS485 Pin to eSolar WiFi-485

Pin Number	Description
7	RS485+
8	RS485-

④Install Module

Remove the RS232 interface protective cover under the inverter → insert the module into RS232 interface and screw up with M4 screws.

Figure 2-3

Step 2: eSolar MeterS-485 Installation Instructions

①Power Lines Connection

Connect Live wire to terminal "L" of the eSolar MeterS-485 and connect Neutral wire to terminal "N" of the eSolar MeterS-485.

②CT Connection

Connect S1 (red wire) of CT to the CT+ terminal of the eSolar MeterS-485 and connect the black wire to the CT- terminal of the eSolar MeterS-485.

③Connect to eSolar WiFi-485 Module

Connect the terminal of"RS485+"eSolarWiFi-485 to the A terminal of the Meter, connect the terminal of "RS485-" to the B terminal of the Meter.

Figure 2-4
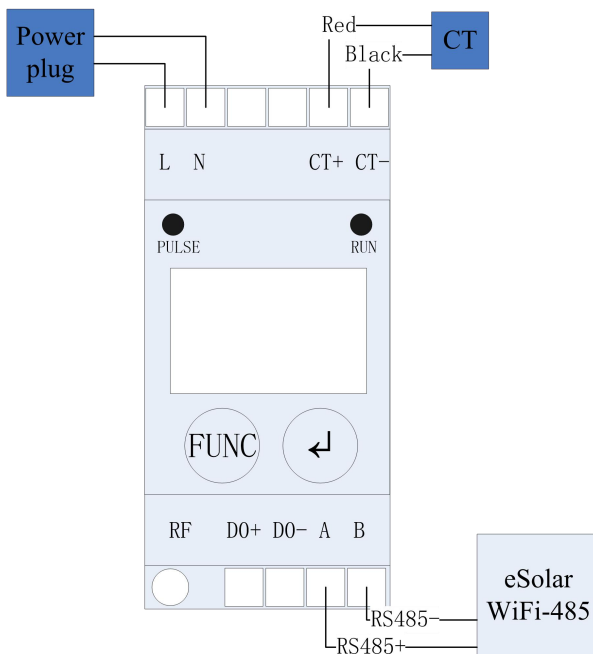
④ **Fixing eSolar MeterS-485(DIN 35mm mounting)**

There are buckles at the bottom of the meter. Buckle it on to proper grooves for tighten.

⑤**CT Installation**

CT can be opened. Push the buckle by the side to open the CT. Penetrate the live wire of the power grid through portal of terminal P1. Tighten up the CT buckle. (Note: The arrow direction show in the CT should point to the load.)
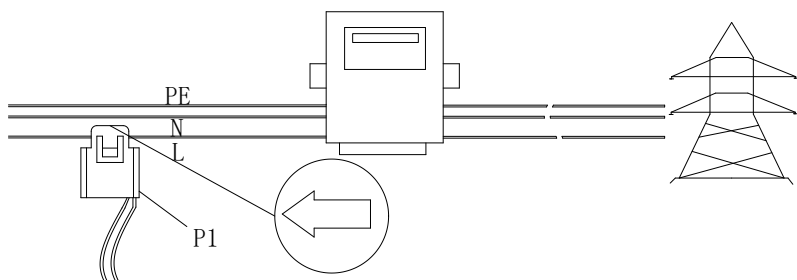
Figure 2-5

⑥**Power On**

Power on the eSolar MeterS-485 and it will start operation. (If meter failed to communicate with module, it will display "off line" in the meter screen ； if succeeded, "on line" will be displayed.)

Note:

1.There are 11 terminals on the eSolar MeterS-485 in total while actually only 6 will be used, as shown in Figure 2-4.

2.eSolar MeterS-485 and CT are not waterproof or dust-proof, it is recommended to install inside a distribution box.

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3 Debugging & Commissioning

3.1 Connect eSolar WiFi-LR/eSolar WiFi-485 with the router

3.1.1 APP Configuration

① Download eSolar APP and register account

Web to eSolar website https://fop.saj-electric.com to scan the QR code and download "eSolar O&M" APP (or download it from Google Play or App Store by searching "eSolar O&M") and register an account.

② Log in APP→ Select item "My" → select item "Remote control" → select item "WiFi" → select item "Next step" as shown in .

③ Select item "Go to WLAN setting interface for setting"→switch to the mobile phone WLAN setting interface→Select module WiFi (E.g.: DTU:XXXXX) and then switch back to APP → select item "Next step".
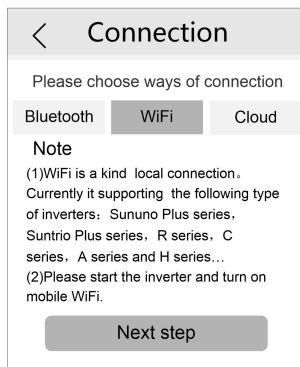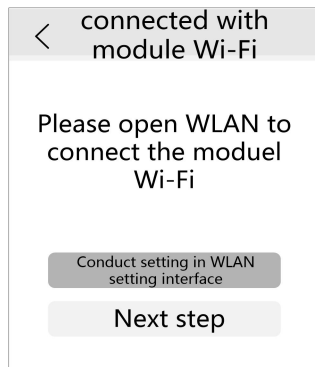
| Figure 3-1 | Figure 3-2 |

④ Configure the router : select a valid router from the router list (E.g.: SAJ) as shown in Figure 3-3 → Fill in "password" of the router → turn on "DHCP" (default: open) → "save" the settings as shown in Figure 3-4. →"Connected" successfully.

‹ Select the router		‹ Connect module with the router	
SAJ	🔒 📶	Router_SSID	SAJ
Saj	🔒 📶	Password	SAJ
		DHCP	🟢
		Save	
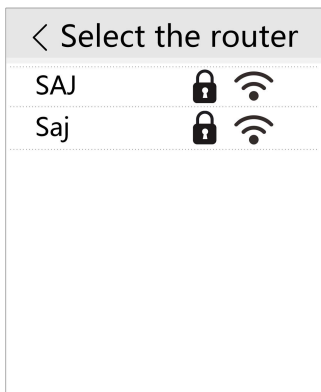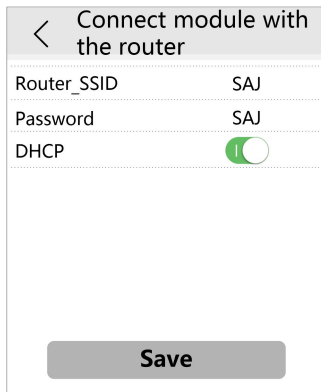
Figure 3-3	**Figure 3-4**

⑤ After connecting the WiFi module to the Internet, data of the inverter will be uploaded to the server. Users can log into eSolar website or APP monitor to monitor inverters remotely.

3.1.2   Web Page Configuration

① Connect WiFi module hot spot (eg.:DTU:XXXXX)
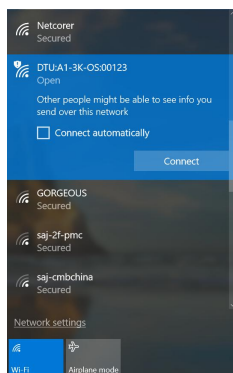
Figure 3-5

② Web to http://10.10.176.1 (Account: admin, Password: admin) to set over webpage.

Note: Language can be set by clicking "LANGUAGE"in the top right corner.

Figure 3-6

③ After login to the WiFi web server page, Click "WIZARD" → Click "1. Scan" →select one valid Wifi (E.g. Wifi: SAJ_Phone) → Enter the password for the Wifi (I.e #p101017@saj) and click "3.Next"→ Choose "DHCP" and click "Join" →Connected. After connected, the WiFi module will reconfigure the wireless network.

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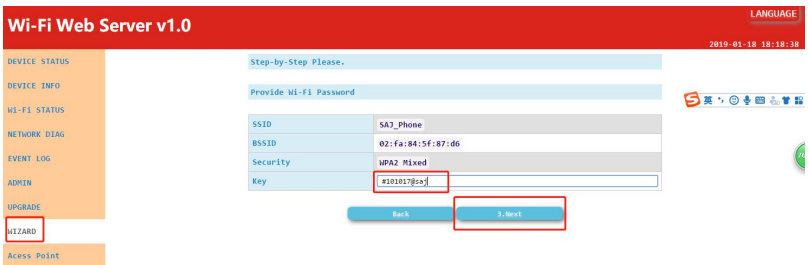
Figure 3-7

Figure 3-8

Figure 3-9

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④The data of inverter will be uploaded to the server after WiFi connecting with Network . Users can monitor the inverter remotely through eSolar website or APP.

3.2 Export Limitation Function

3.2.1 Inverter Configuration

Inverter LCD Display is as below:

```
┌─────────────────────┐
│ E-today   0.05kWh   │
│ P-ac      3210W     │
└─────────────────────┘
          │ ENT
┌─────────────────────┐
│ > Set-Param         │
│   Inverter-Info     │
└─────────────────────┘
          │ ENT
┌─────────────────────┐
│ Configuration       │
│ >Function           │
└─────────────────────┘
          │ ENT
┌─────────────────────┐
│ DRM0 Func.          │
│ >Export limit.      │
└─────────────────────┘
          │ ENT
┌─────────────────────┐
│ Export limit[0]     │
│ 0 OFF    1ON        │
└─────────────────────┘
          │ ▲
┌─────────────────────┐
│ Export limit[1]     │
│ 0 OFF    1ON        │
└─────────────────────┘
          │ ENT
┌─────────────────────┐
│ P-Limit.  0000W     │
│        ^            │
└─────────────────────┘
          │ ENT
┌─────────────────────┐
│ P-Limit.  0000W     │
│          ^          │
└─────────────────────┘
```
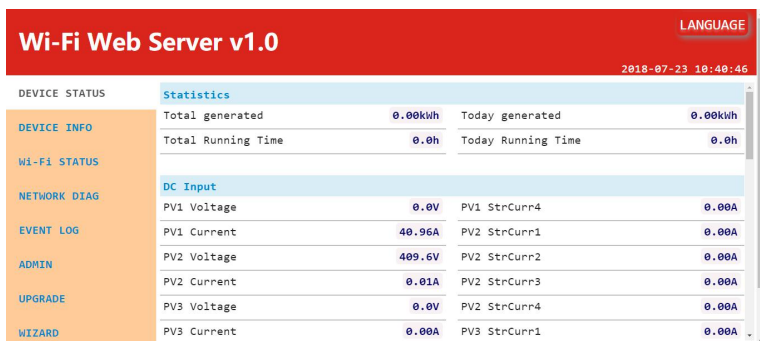
Figure 3-10

Note:

①   Export limitation function is off by default.
②   Select "1" to turn on the Export limitation. Select "0" to turn off the function.

③ Press "▲" / "▼"to change the value of "P-Limit", after a certain value settled, press "ENT"to move the cursor point to the last number, press "ENT"again then the settings complete.

E.g.: When Sununo Plus 1K is used, if set the"P-Limit" valueinto 1000W, the Max. power fed into the grid is 1000W.

3.2.2 APP Configuration

① Login APP and connect the module WiFi.

② Enter "Remote control" interface to select "Mode setting" → turn on the "Export limitation" (it is off by default) as showed in Figure 3-12.

‹ Remote control	‹ Export limitation setting	‹ Export limitation setting
WiFi: Sununo Plus 1K:00123 11020G1821EN00123	Meter	Meter
Device info ⟩	Please input meter ID [Bound]	Please input meter ID [Bound]
Power adjustment ⟩	Export limitation ⬭	Export limitation 🔵
Export limitation setting ⟩	[ ] Wp	[0] Wp

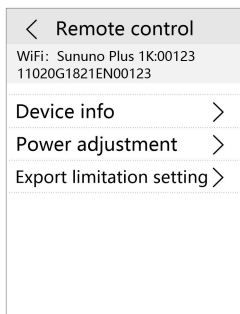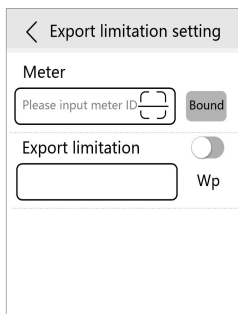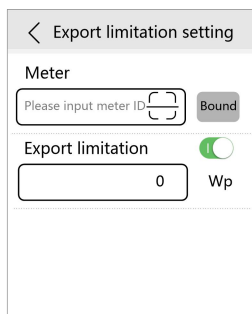**Figure 3-11**   **Figure 3-12**   **Figure 3-13**

Note：

1. Export limitation refers to the system's adjustment and controls based on the power fed into the grid;
Power adjustment refers to limit the inverter maximum output power.
Export limitation function and power adjustment function can't be open at the same time.
After the export limitation function is set, the inverter needs to be restarted so the function become effect.

2. When the Export limitation function is open, Power adjustment to the inverter can't be set.

3. Please restart the inverter if choose to open the 0-export function.

4. If the inverter is set with power adjustment function first and then users want to start the export limitation function, he need to set the power limitation value back to the maximum output power of the inverter to cancel the power limit.

E.g. The maximum power limit for Sununo Plus 1K is 110%.

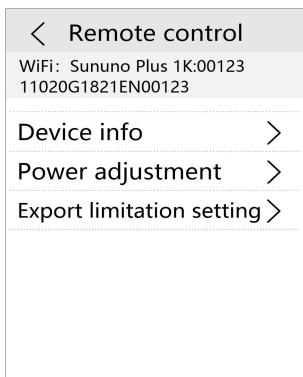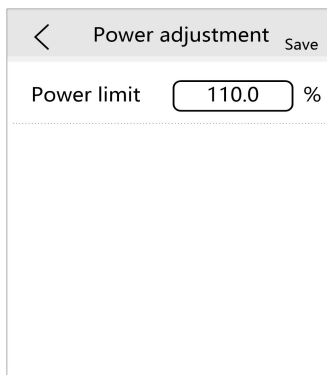| Remote control	Power adjustment Save
WiFi: Sununo Plus 1K:00123 11020G1821EN00123	Power limit [110.0] %
Device info >	
Power adjustment >	
Export limitation setting >	

Figure 3-14   Figure 3-15

4 Check Information

4.1 eSolar WiFi-RS485 Information Check

Indicator lamp

LED lamp state		Description
Red	Flicker once	When it's just power-on
	Flicker once	When interaction with APP data
Green	Flicker 0.5s/once	When Router is not configured
	Flicker 1s/once	When data is normally uploaded on the server
	Always on	When data hasn't been uploaded on the server

4.2 eSolar MeterS-RS 485 Information

4.21 Display Screen

Information such as voltage, current, frequency, power and connection details with WiFi module could be shown on the display screen directly.

4.22 Indicator Lamp

LED lamp state		Description
RUN the system runs the indicator lamp	Flicker 1s/once	Normal operation when power-on
	Flicker 0.3S/once	With data communication
PULSE electric energy pulse indicator lamp	Flicker once	When 1/3200 KWH power tested

4.3 APP Information

Login APP → connect module WiFi → enter "remote control" interface to select "device information"

You can view basic information, running information, power information, and event information.

Remote control screen:

WiFi: Sununo Plus 1K:00123
11020G1821EN00123

Device info >
Power limit >
Export limitation setting >

Device info (Basic info):

WiFi: Sununo Plus 1K:00123
11020G1821EN00123

Basic info | Running info | Power info | Event info

- Inverter model | Sununo Plus 1K
- Module SN code | XXXXXXXX
- Module firmware version | XXXXXXXX
- Communication board firmware version | XXXXXXXX
- Main board firmware version | XXXXXXXX
- Slave board firmware version | XXXXXXXX
- Meter SN | XXXXXXXX

Device info (Running info):

WiFi: Sununo Plus 1K:00123
11020G1821EN00123

Basic info | Running info | Power info | Event info

PV information
PV1   XXV   XXA
PV2   XXV   XXA

Grid power information
AC1   XXV   XXA   XXHz

Meter information
CT1   XXV   XXA   XXW

Figure 4-1

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Annex I   eSolar RS485 Kit Datasheet

eSolar WiFi-485 Data Sheet	
General parameters	
Connecting inverters NO.[set]	1
Inverter communication port	RS232
Remote communication port	WiFi
Operating frequency[GHz]	2.4
Transmitted power[W]	<0.1
Inverter Data collection interval[min]	1-30[Optional],10[Standard]
eSolar MeterS-485 Data collection interval[s]	1
Firmware update method	Integrated Webpage/Remote
Access data method	Integrated Webpage/Remote sever/APP
Status display	LED
Electric parameter	
Input voltage[V]	DC 5~7（±5%）
Static consumption[W]	<1
Max.instant consumption[W]	<8
Environment	
Operating temperature range	-40°C-60°C
Storage temperature range	-40°C-60°C
Dimensions[H*W*D][mm]	142*65*36（RJ45 cable Excluded）
Weight[g]	83（RJ45 cable Excluded）
Ingress protection	IP65
Others	
Mounting method	Plug-in+Screw lock
Warranty[year]	2[Standard]/5[Optional]

eSolar MeterS-485 Data Sheet	
General parameters	
Connecting eSolar WiFi-485 NO.[set]	1
Remote communication port	RS485
Firmware update method	Serial Port
Access data method	RS485
Status display	LCD
Electric parameter	
Feed-in	single-phase
AC Input voltage[V]	AC 220/230
Input frequency[Hz]	50/60
Rated/Max.AC Input Current[A]	10/63
Static consumption[W]	<1
Max.instant consumption[W]	<8
Environment	
Operating temperature range	-40℃-60℃
Storage temperature range	-40℃-60℃
Dimensions[H*W*D][mm]	89.7*35.6*62.2（CT Excluded）
Weight[g]	110（CT Excluded）
Ingress protection	IP20
Others	
Mounting method	DIN 35mm mounting
Warranty[year]	2[Standard]/5[Optional]

*The product updates continuously and no additional notification would be made if there is any change in parameters.

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