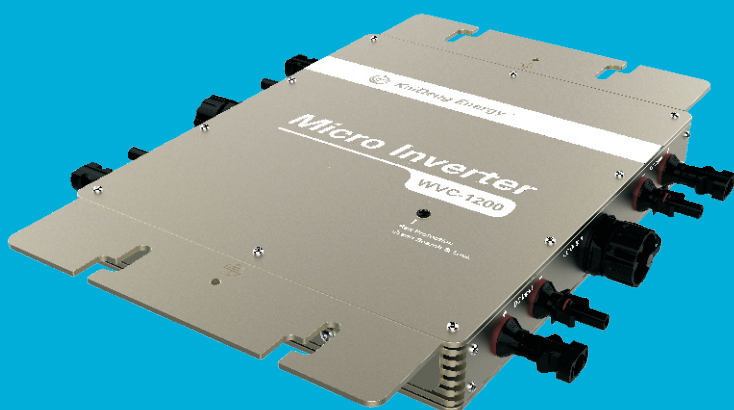




KaiDeng Energy
东莞市凯登能源科技有限公司

Green Energy
Micro Inverter **Expert**

Micro Inverter WVC1200 User Manual



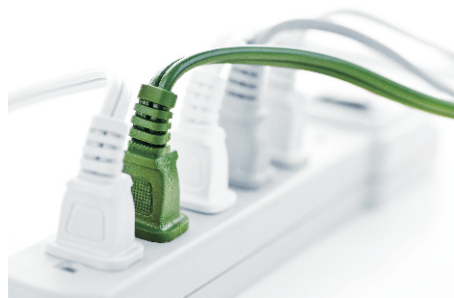
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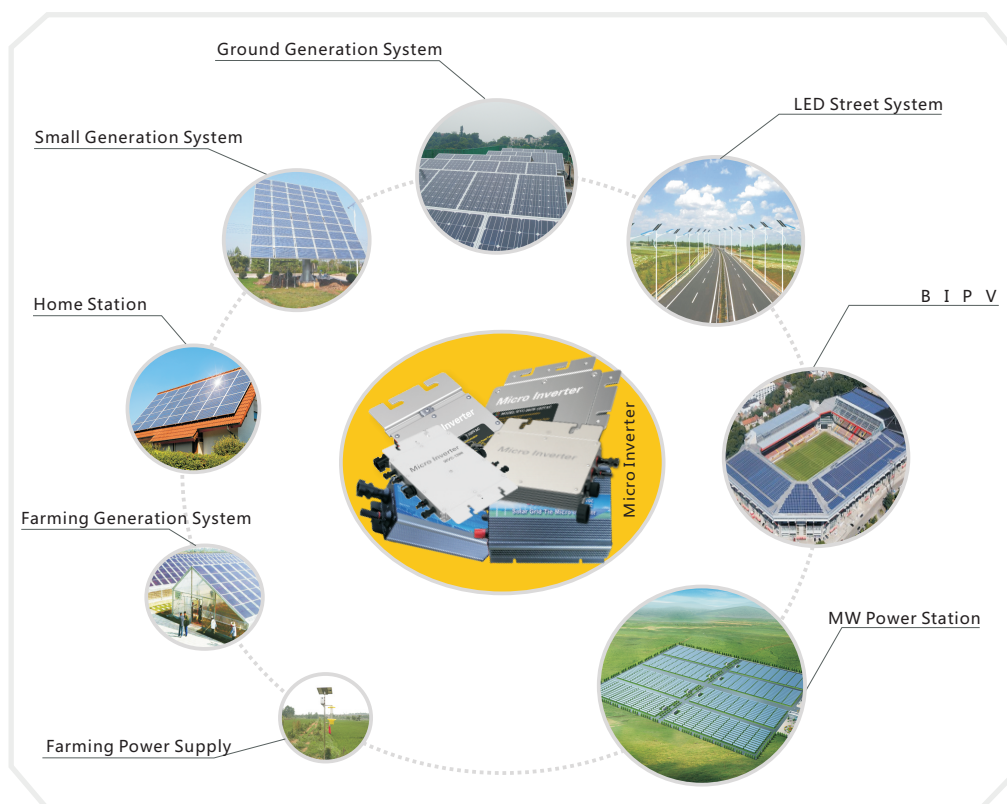


DongGuan KaiDeng Energy Technology Co., LTD. is a high- technology enterprise which is concentrate on all series of solar energy, wind energy on/off grid micro inverter and switch power supply' research and development, design and production. KaiDeng devotes to provide the high quality, high usability and low-cost products for the users to meet their demands of maximization, diversity. All products of KaiDeng have full autonomy intellectual property and tens of core technical patents. It' s one of the technical leader manufacturers of micro inverter in the global and the first put forward and apply a number of innovative technologies in the industry which is one of the important contributors of micro inverter technology. In the change with each passing day of new century, Kaideng will be put more enthusiasm to continue join in the new energy technology application of global boom and struggle to create a green earth.

KaiDeng Products Overview

---more about KaiDeng

Sample Application



KaiDeng Product Line

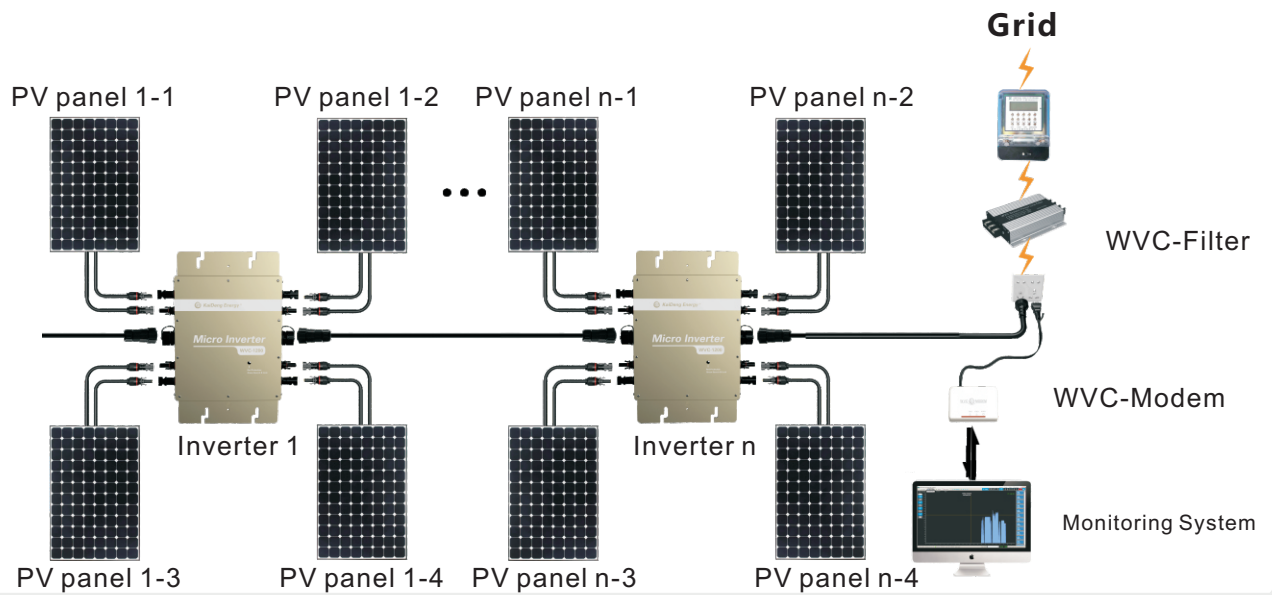
Grid Tie Micro Inverter

Solar GTI Series	300W	500W	800W	1KW	Wind GTI Series	300W	500W	800W	1KW
Solar WV Series	230W	250W	300W	500W	Solar WVD Series	100W	150W	230W	260W
	1KW	2KW	3KW	4KW	Solar WVC Series	260W	300W	350W	600W
	5KW	6KW	8KW	10KW		800W	1200W		

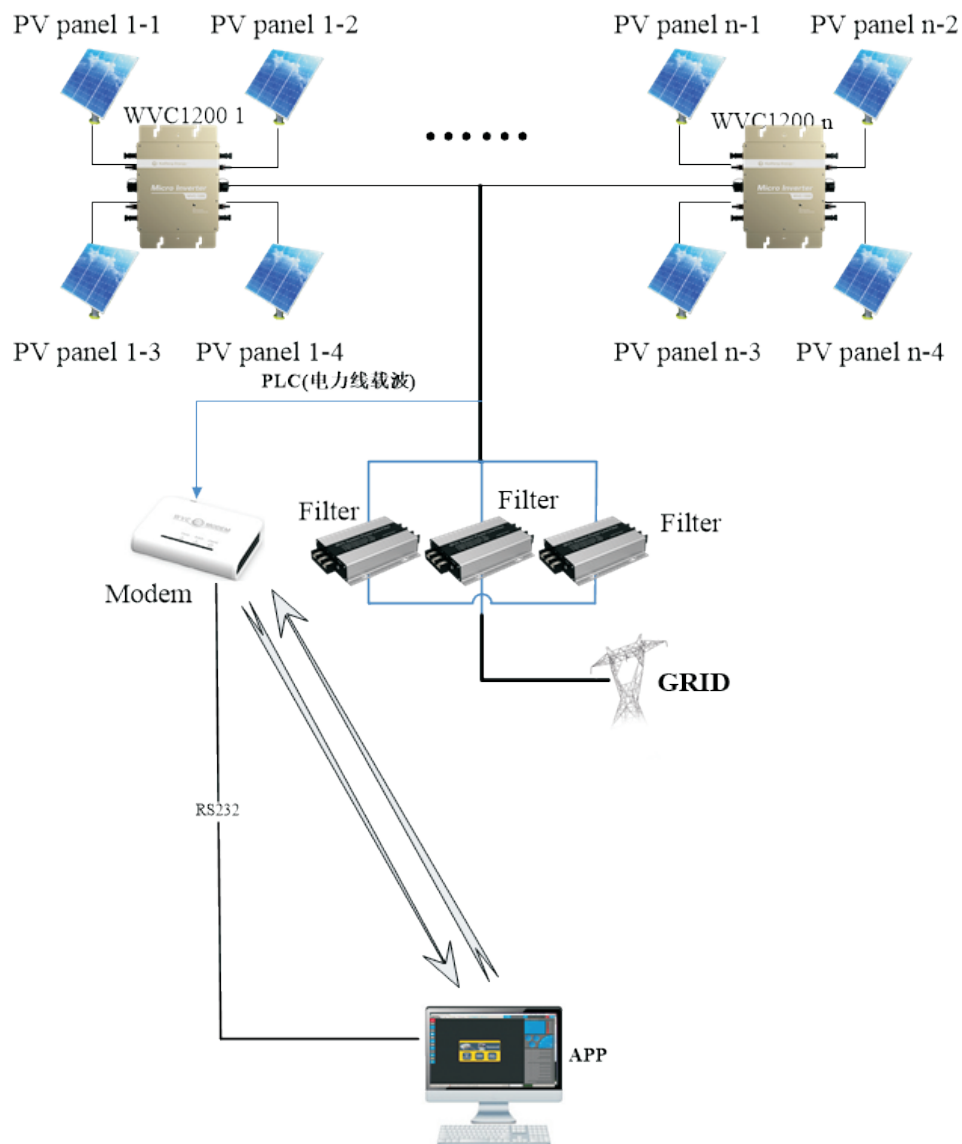
Off-Grid Micro Inverter

PSW Series	200W	300W	500W	1KW	2KW	3KW	4KW	5KW
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KaiDeng WVC Series Installation



Case Diagram



System Function

◆ Power line carrier-current communication(this is optional function,please confirm the spec outside the box first.)

By using electric power as a carrier of AC alternating current, can modulate high-frequency and carrier frequency (60KHz) in AC wire transmission and can achieve the communication/ newsletter between inverters or between inverter and computer. And it can transfer the power data. Also monitor all functions of inverter.

- 1.Carrier frequency : 60KHz(Frequency customizable);
2. Interface way:TTL level serial interface;
- 3.Carrier rate:300BPS;
- 4.Serial rate:9600PS(Can customize according to customer's request);
5. Modulation mode : FSK+DSSS;
- 6.Newsletter distance:400m;

◆ 6-grade power search---In overcast weather, the PV Panel's output current is extremely tiny, then inverter will automatic open 6-grade power search function,and keep outputting efficient and steady during the low power.

◆ Wide voltage input(22-50VDC)---1.DC voltage input:22~50VDC; 2.Second level power variable voltage conversion.

◆ High-frequency two-way and one-way grid function---1.High frequency direct modulation, AC half wave synthesis; 2.Two-way grid means: Load consume directly. And can reverse AC current transmission.

◆ Kinds of frequency output function---1.It can apply to 50Hz and 60Hz frequency of AC; 2.Frequency range: 45Hz ~ 64Hz;

◆ Directly connected to the solar panels (do not need to connect the battery)

◆ AC 0 angle with high precision auto-detection---High-precision analysing the AC phase angle .The phase shift rate is less than 1%, thus achieve high-precision with phase modulation AC output together.

- 1.AC phase shift: < 1%;
- 2.Over-zero protection: 0.2 VAC;
- 3.AC switching: 50Hz / 60Hz.

◆ Synchronous High-frequency Modulation

- 1.Modulation synthesis: half wave and full-bridge modulation synthesis (100Hz / 120Hz) ;
- 2.Synthetic way: MOSFET full-bridge;
- 3.High frequency: 50KHz.

◆ Pure Sine Wave Output---Use SPWM directly to make pure sine wave output.

- 1.Output waveform: Adopt complementary PWM to push-pull pure sine wave;
- 2.Generate means: enhancement-mode SPWM.

◆ Power Automatically Locked (APL)--- automatically powers locked in maximum power point, made output more stable.

◆ Constant Current, Constant Power---constant current and output power, without any overload, over-current phenomenon.

◆ Exactly and timely automatic Island Effect Protection

◆ High-Frequency High Conversion Rate---Adapt high frequency converter, the output more efficient.

◆ Maximum Power Point Tracking (MPPT)---high-precision (MPPT) operation power, automatic and immediate adjust the solar panels output power at the maximum output point,made the inverter discharge to power grid with the highest efficiency.

◆ Stack using--- Such as: 4 micro inverter of 260W stacking can achieve 1040W. the number of the stacking is unlimited.

◆ DC input---Input voltage range: 22V to 50V,PV Panel: Recommend using the power more than 30W and the standard voltage of 36V PV panels.Suggestion making the PV in parallel.

◆ AC output---220VAC: 180V - 262V, 50HZ; 110V AC: 80V - 160V ,60HZ.

Notes:

★Please connect the inverter following the operation instruction show above. If have any question please contact with relative persons.

★Non-professionals do not disassemble.Only qualified personnel may repair this product.

★Please install inverter in the low humidity and well-ventilated place to avoid the inverter over-heating,and clear around the inflammable and explosive materials.

★When using this product, avoid children touching, playing, to avoid electric shock.

★Connected solar panels, battery or wind generators DC input DC power supply cable.

Accessories for product:

- 1.One warranty card;
- 2.One user manual;
- 3.One certificate of quality;
- 4.1 pouch of screw for micro inverter installation;
- 5.One AC Cable;

LED Display

- 1.Red light 3 second---Red LED light 3 second while device starts , then in working condition;
- 2.Green flash fast---MPPT searching;
- 3.Green flash slow---MPPT + searching;
4. Red flash slow---MPPT - searching;
- 5.Green lights on 3s and off 0.5s---MPPT locked;
- 6.Red light steady---a. Islanding protection;b.Over-temperature protection;c.Over / low AC voltage protection; d. Over / low DC voltage protection; e.Fault

Remarks:

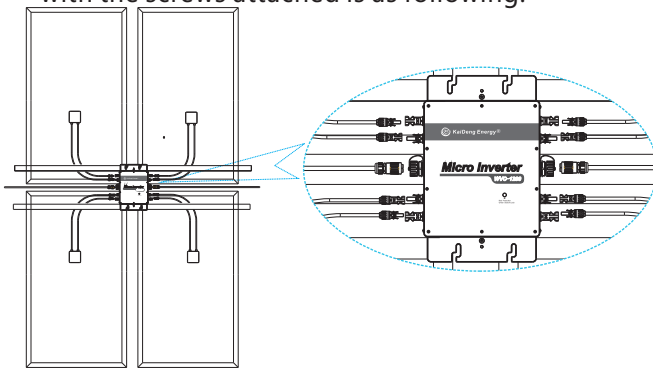
LED flashing in the process of being working condition:inverters connected to AC & DC sides→Red LED light 3 second→Green LED flash fast(MPPT searching)→Green LED flash slow(MPPT + searching) / Red LED flash slow (MPPT - searching) / reen LED lights on 3s and off 0.5s (MPPT locked) .

Parameter Table

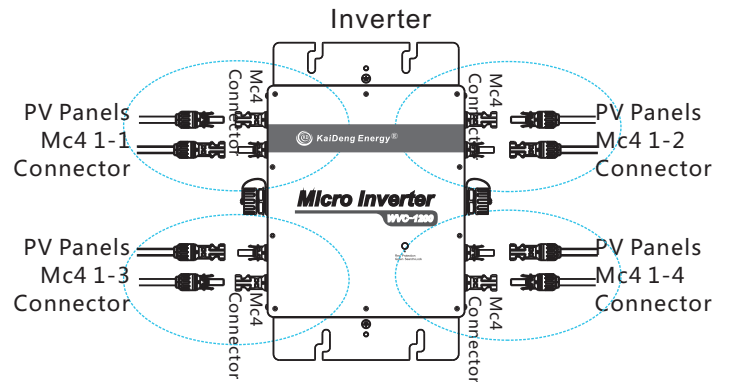
Item	Parameter Value / Description	
Input Data		
Maximum input power	4×300Watt	
Recommend the use of PV modules	4×300W & Vmp> 30V & Voc<50V	
Maximum input DC Voltage	54V	
Peak power tracking voltage	22-45V	
Operating voltage range	17-50V	
Min / max starting voltage	22-50V	
Maximum DC short-circuit	80A	
Maximum input operating current	54.4A	
Output Data	@120V	@230V
Peak power output	1200Watt	1200Watt
Rated output power	1150Watt	1150Watt
Rated output current	9.58A	5A
Rated voltage range	80-160VAC	180-260VAC
Rated frequency range	57-62.5Hz	47-52.5Hz
Power Factor	>99%	>99%
Max unit per branch circuit	3pcs (Single-phase)	6pcs (Single-phase)
Output Efficiency	@120V	@230V
Static MPPT efficiency	99.5%	99.5%
Maximum output efficiency	91.2%	92.5%
Night time power consumption	<1W	<1W
THD	<5%	<5%
Exterior & Feature		
Ambient temperature range	-40°C to +60°C	
Dimensions (L × W × H)	370mm×305mm×38mm	
Weight	2.85kg	
Waterproof rating	IP65	
Cooling	Self-cooling	
Communication Mode	Power Line	
Power transmission mode	Reverse transfer , load priority	
Monitoring System	Lifetime free	
Electromagnetic Compatibility	EN50081.part1 EN50082.Party1	
Grid disturbance	EN61000-3-2 Safety EN62109	
Grid detection	DIN VDE 1026 UL1741	
Certificate	CEC,CE National patent technology	

Installation Of Micro Inverter

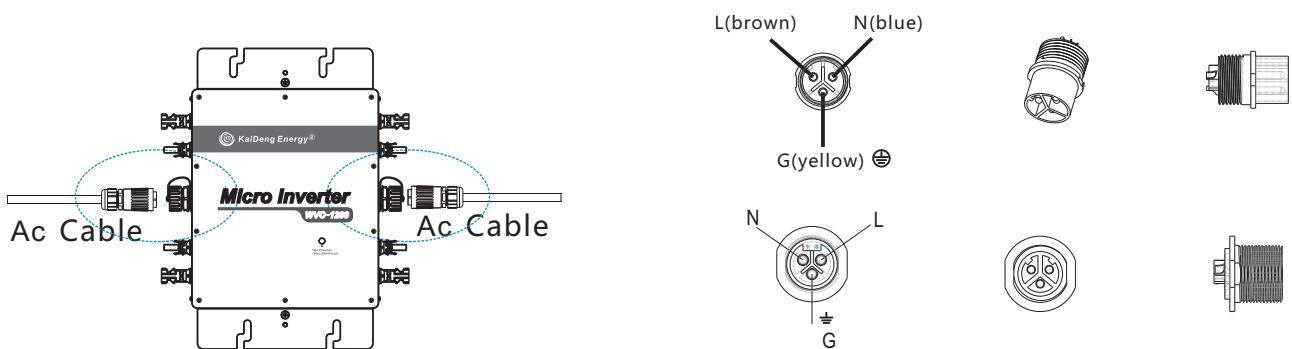
Step1 Installation for fixed the inverter on the PV holder with the screws attached is as following:



Step2 Connect the two DC terminal of the PV to the inverter, positive to positive, negative to negative. Show below:



Step3 Open the waterproof cap on AC output side of the micro inverter, then plug to AC power line. Show below:

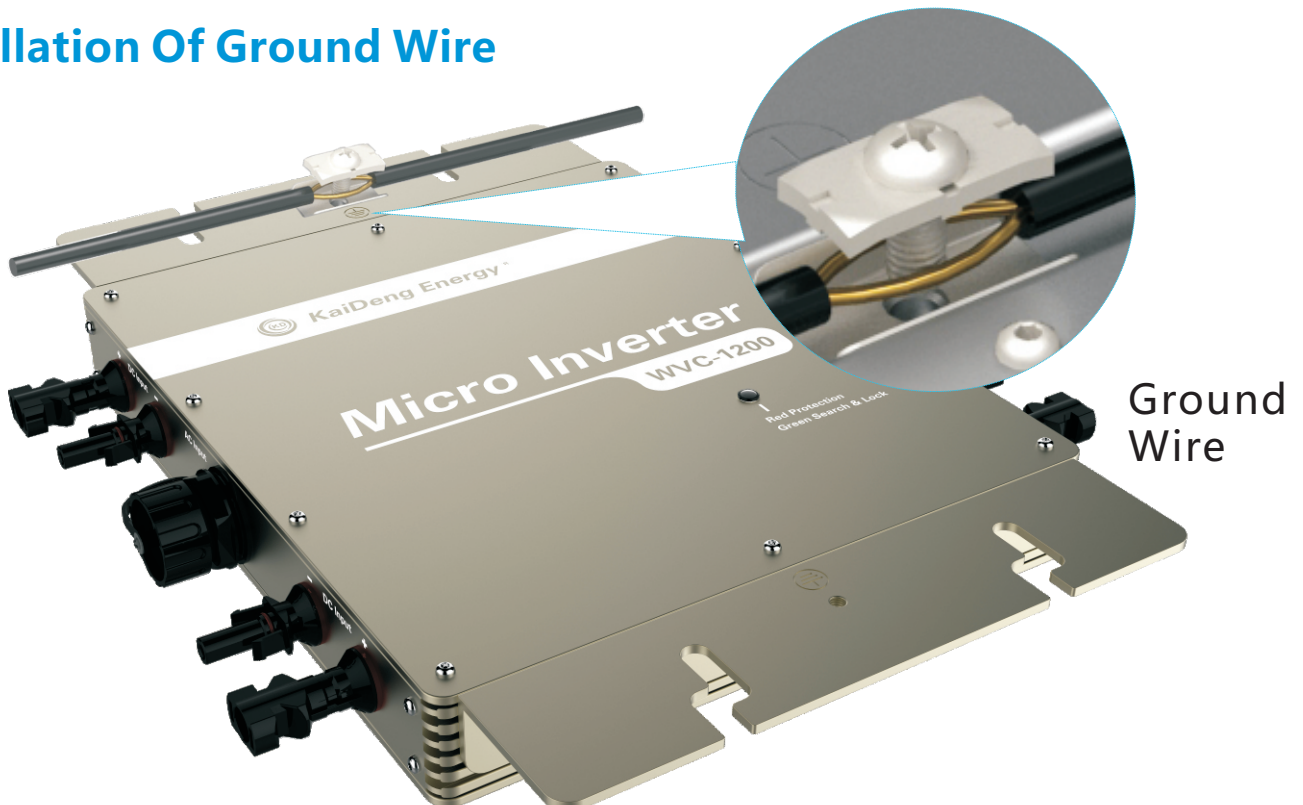


Step4 Plug the AC output line to main AC cable;

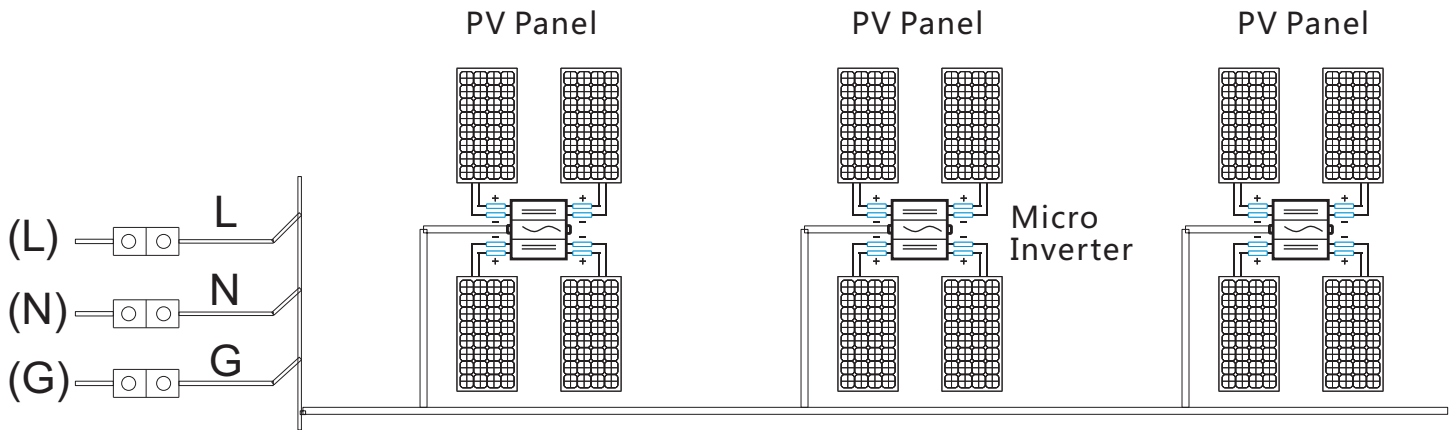
Step5 Repeat the first step to the third step to complete the installation of micro inverters;

Step6 Finally, please connect the AC main cable to the utility grid to run renewable energy and saving \$\$\$!

Installation Of Ground Wire



Single-Phase Connection



Three-Phase Connection

