

GTI Series Inverters For Grid User Manual



System Function

- **Directly connected to the solar panels (do not need to connect the battery)**
Using precise MPPT function, APL functions, the inverter automatically adjust the solar panels of maximum output power, simply connect the solar panel to the grid inverters. Do not need to connect the battery.
- **AC 0 angle with high precision auto-detection**
AC phase angle of 0 through isolation amplifier then input to the MCU for high-precision detection and analysis. The phase shift rate is less than 1%, thus achieve high-precision with phase modulation AC output together.
- **Synchronous High-frequency Modulation**
In the process of the grid, usually adapt the same phase angle in parallel. (ie, When the two-phase alternating current total is equal to 0. Use switch to combination the two AC fusion) and the product is rectified AC half-frequency AC to 100Hz first, then the machine use the high frequency current in the circuit and semi-100Hz frequency alternating current generated combination, to achieve high-frequency modulation.
- **Pure Sine Wave Output**
Use SPWM directly to make pure sine wave output.
- **Automatic Sensing Function Solar Luminosity**
Use the latest luminosity perception operation technology. The different illuminate angle and intensity of the solar panel will produce different current output. Use advanced CPU to operate the different illuminance and the data can be directly displayed on the LCD. Then you can visually see the sense of the strength of the sun unit. Used more convenient.
- **Power Automatically Locked (APL)**
In different current fluctuations, we should use the MPPT function. When the MPPT function adjusted to the maximum power point, the product automatically powers locked in maximum power point, then made the output power more stable.
- **Maximum Power Point Tracking (MPPT)**
Because the current intensity and the voltage changes at any time, if there is no power point tracking, there will be a lot of problems. In the past time, usually adopt a solar controller, but this product uses high-precision MPPT operation power, automatic and immediate adjust the solar panels output power at the maximum output point, then achieve a stable output purposes.
- **Automatically Adapt To Different Load Power Factor**
Adapt to any of the power load.
- **Constant Current, Constant Power**
This product is constant current, constant output power, without any overload, over-current phenomenon.
- **Automatically Shut Down When The Power Output Of a Fault**
When the city power system is in failure, the inverter will automatically turn off the output.
- **Current Limit Protection**
Current limit
- **Stack Multiple Machines**
Multiple small power inverters in parallel can achieve large output power.
- **High-Frequency High Conversion Rate**
Adapt high frequency converter, the output more efficient.

Parameter Table

Grid-series models	200W	300W	400W	500W	600W	800W	1000W
Recommend use solar panels	320Wp	420Wp	520Wp	620Wp	720Wp	1050Wp	1250Wp
DC Maximum Input Power	300W	400W	500W	600W	700W	900W	1200W
DC maximum voltage	V _{pv} DC30.2VDC						
DC voltage range	V _{pv} 10.5V~28VDC						
Maximum output power factor	99%						
Maximum input current	15A	20A	25A	30A	40A	45A	65A
AC output power	200W	300W	400W	500W	600W	800W	1000W
AC maximum output power	200W	300W	400W	500W	600W	1000W	
Anti-voltage protection	Fuse						
AC standard voltage range	90~140VAC/180~260VAC						
AC frequency range	55Hz~63Hz/ 45Hz-53Hz						
Output current total harmonic distortion	THDIAC <5%						
Phase	<1%						
Islanding protection	VAC;f AC						
Output short circuit protection	Current-limiting						
Show	LED						
Installation	Wall hanging						
Cooling	Fan						
Standby Power	<1W						
Night Power	<1W						
Ambient temperature range	-25 °C~60 °C						
Humidity	0~99%(Indoor Type Design)						
Waterproof	Indoor Type Design						
Electromagnetic Compatibility	EN50081.part1 EN50082.part1						
Power System Disturbance	EN61000-3-2 EN60950-1						
Network test	DIN VDE 1026						
Certificate	CE						

Packing and weight

N. W	0.77kg (200-300W)	1.3kg(400—600W)	2.1kg(800—1000W)
G. W	1.15kg (200—300W)	1.8kg(400—600W)	2.6kg(800—1000W)
Size (L x W x H)	18.7 x 12.6 x 5.1 cm	21 x 16.5 x 5.3cm	31 x 16.5 x 5.5cm
Packing	Inner box: 27x19.5 x 9.5 (1PCS)	Inner box: 30.5x21x11.5 (1PCS)	Inner box: 39.5x 21x11.5 (1PCS)
(L x W x H)CM	Outer box: 49.5x28.5x 40.5 (10PCS)	Outer box: 43x32x38 (6PCS)	Outer box: 42.5x41x26.5 (4PCS)
G. W(Outer box)	13.0KG	11.0KG	11.0KG

Installation instruction

solar panel

module

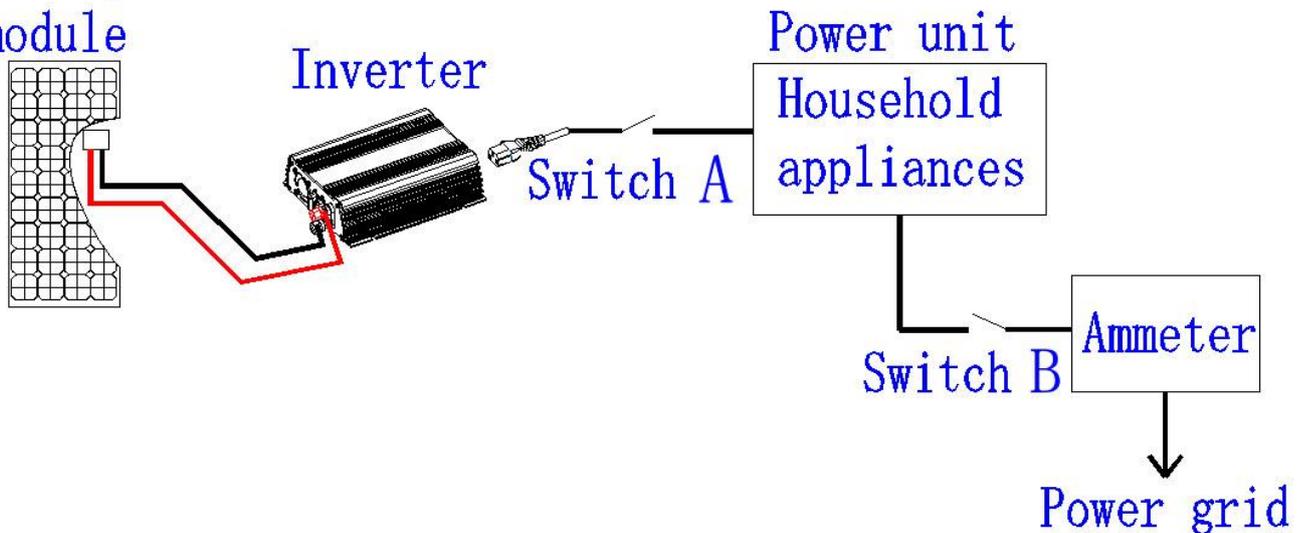


Figure 1

1、 Please read the below notes carefully before installation.

- A) Make sure the open voltage and operation voltage is in the range of 10.5-28V, and we recommend the 18V rated voltage solar panel or 24V battery.
- B) Make sure the inverter's AC voltage and frequency is the same with power grid voltage and frequency.
- C) Installation inverter in the low humidity and well-ventilated place to avoid the inverter damp and overheating, And clear the inflammable and explosive materials around.
- D) Recommended to use 4AWG DC input cable that can handle more than 50A current.
- E) DC input cable no more than 8M, because long DC cable will reduce the voltage from solar panel to inverter, then make some loss.
- F) There must be a circuit breaker between solar power generation and power grid(show like the "switch A" in figure 1). And there will be no load before the circuit breaker.
- G) Before connect all the connections, you must disconnect the utility power. After make sure the all connections are right then connect the utility power.
- H) If you need to disconnect the mains switch when the solar power generation is in operation, you must disconnect the control switch first(show like the "switch A" in figure 1).
- I) Avoid children touch or play the inverters, in order to prevent electric shock.
- J) Non-professional do not disassemble the inverter, only qualified serviceman can repair it.

2、 Connection DC terminal

Connect the solar panels positive terminal to inverter's positive terminal, and negative to negative. And you must screw up the nut to avoid the bad contact.

Show in figure 2:

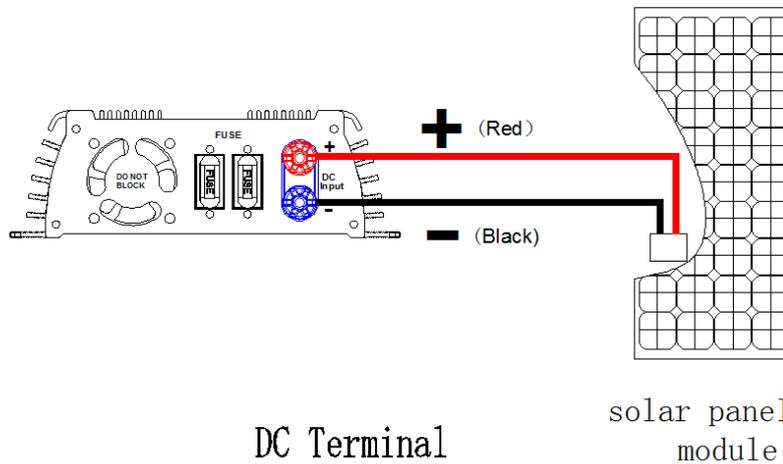


Figure 2

3、 Connection of AC terminal

Before connect the inverter's AC cable to the socket, you must disconnect the utility power. Then put the AC cable which has holes terminal into the inverter's 3 feet port and the pin terminal to the socket. Please make sure both of the terminal are connect fastness to avoid bad contact.

Show like figure 3:

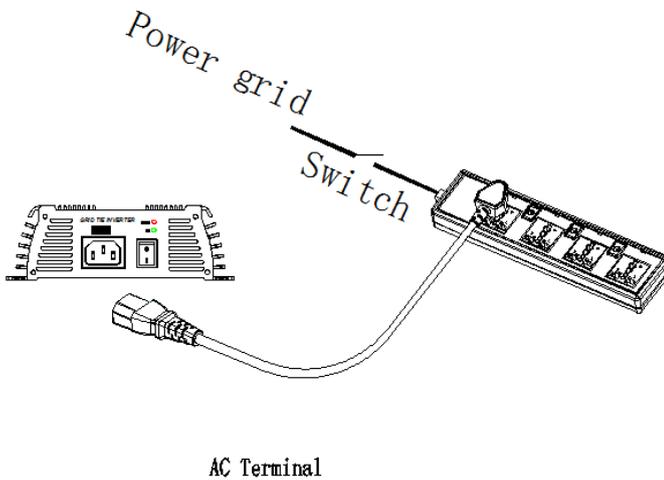


Figure 3

4、 Operation

After all connection, first open the mains switch, then open the inverter. When the inverter's green LED shows, it means the inverter start to work.

5、 Several or many inverters used in parallel.

In order to achieve higher power, we can use this inverter in stack. For example: 4 pcs of 300W grid tie inverter used in stack can achieve 1200W. And the stacking number is unlimited.

Show as figure 4:

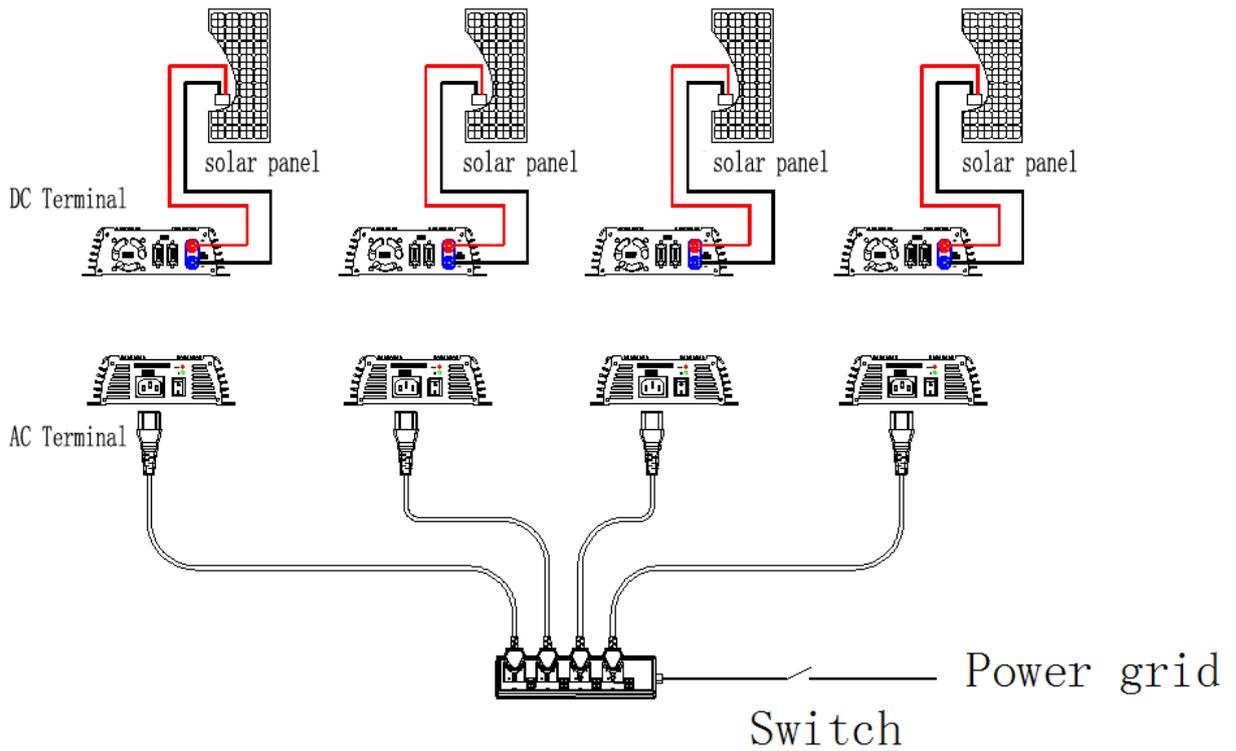
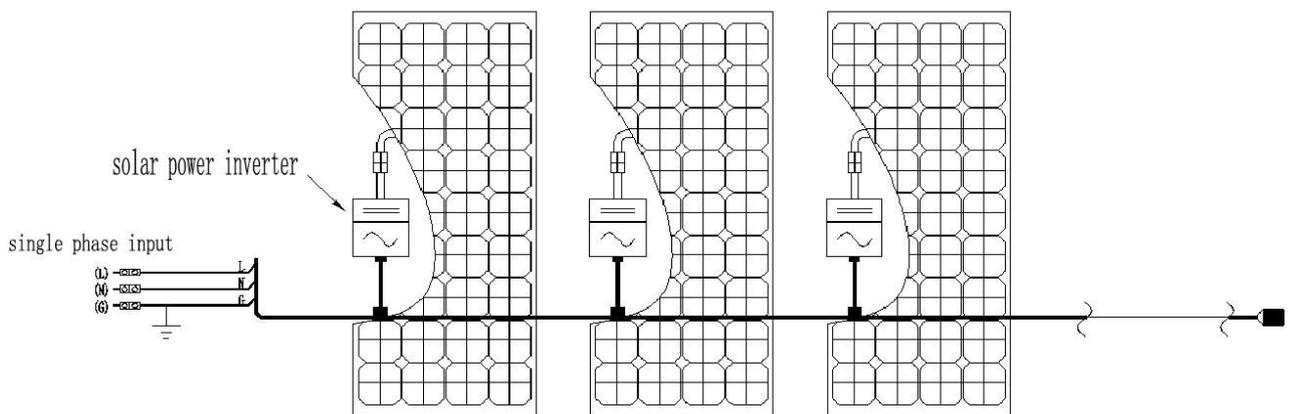


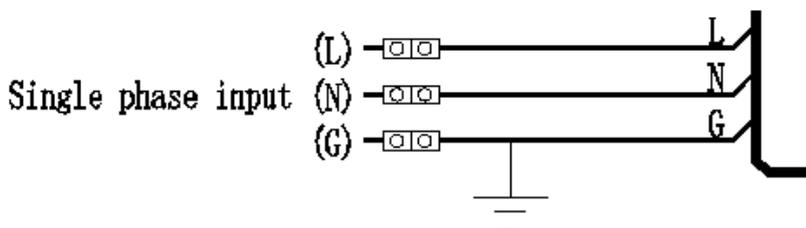
Figure 4

6、Single-phase connection

Connection electrical diagram of the solar inverter used in single-phase power generation system, show as below:

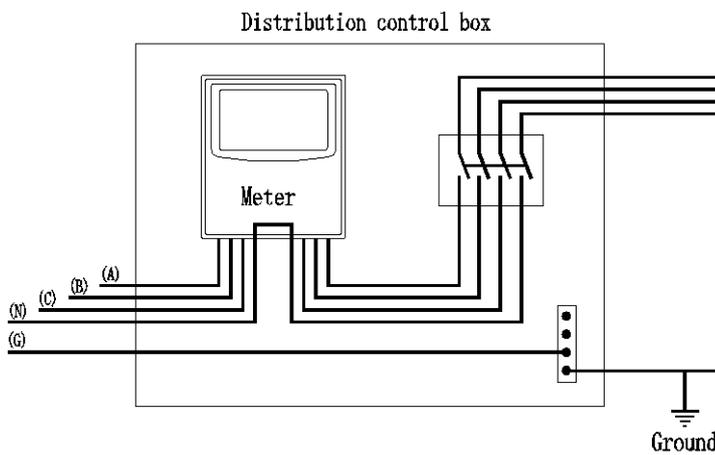
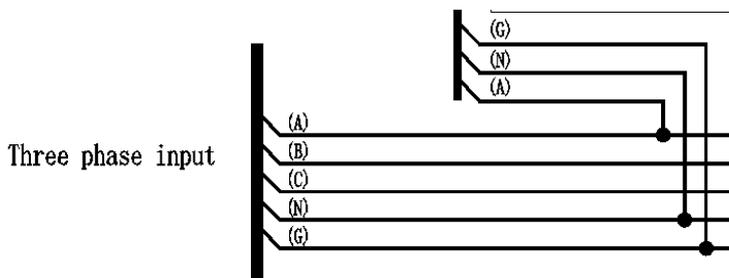
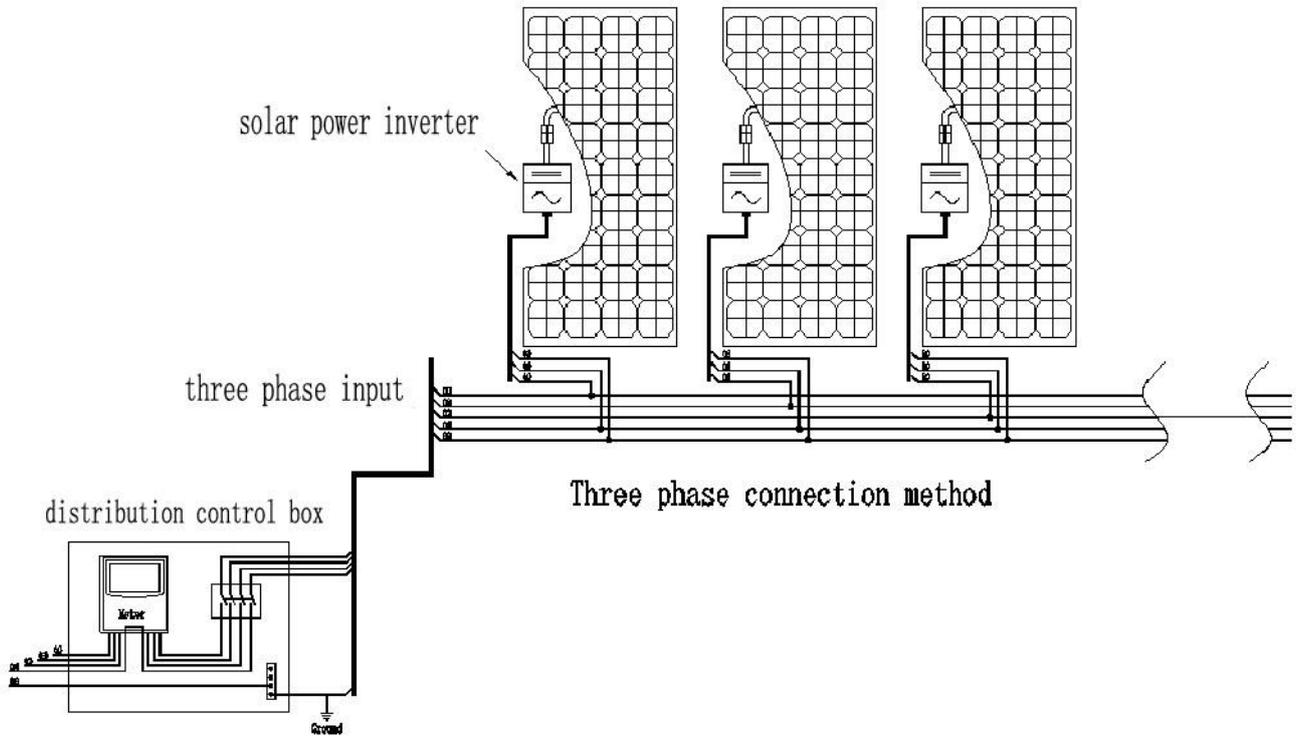


Single phase connection method



7、 Three-phase connection

Connection electrical diagram of the micro inverter used in three-phase generation system, show below:



8、 Trouble shooting

1) Red LED shows:

- A、 Check if the input voltage to inverter is lower than 10.5V or higher than 28V.
- B、 Check if the AC cable connect to utility power correct or the utility power is disconnect.

2) No LED shows:

- A、 Check if the DC input voltage is in too low.
- B、 Check if the DC fuse is broken.

9、 LED Indicator

A、 Red LED:

- 1、 Low-voltage protection (input DC voltage is less than 10.5VDC).
- 2、 Over-voltage protection (Input DC voltage is greater than 28.5VDC).
- 3、 Over-temperature protection (when the chassis temperature is above 75℃, the temperature dropped about 2-10 minutes to restart automatically after cooling).
- 4、 Fault Protection (when 110VAC or 220VAC power outage or shutdown).
- 5、 Islanding protection: When the electric supply stop, the inverter automatically shut down output.

B、 Green LED:

- 1、 Green LED flashing: The inverter is adjusting power output. MPPT is in working condition.
- 2、 Green LED long in time: The inverter is in working condition with the maximum output power.

Accessories for product

One standard AC wire

One user manual