



APM Technologies

Smart TL Series Inverter Quick Installation Guide


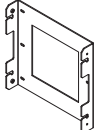












Faster Installation Start Here

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A Important Notes

- To ensure product functions correctly with long-term usage, the following working environments are recommended:
 - Clean and good ventilation. The inverter can be installed outdoors, but avoid direct sunlight.
 - Ensure the working temperature range is from -25°C to 60°C.
 - It is better to install the inverter far away from where people live, as noise will be generated during the operation.
 - Keep out of reach of children, as it may result in being scalded or getting an electrical shock.
 - Make sure of the minimum space around the inverter during the installation.
- Prohibited install in the following environments:
 - In the environment containing flammable or explosive materials.
 - In the environment containing combustible gas.
- Additional Information
 - Make sure the installation location will not be ramshackle and be firm enough to support the inverter for a long time.
 - Make sure there is no interference from any other electrical equipments.
- Environmental Parameters
Working temperature: -25°C-60°C (Derating from 50°C), Relative humidity: 4%-100% (Condensation).
- Installation Tools Preparation:
Electric drill/ Hammer/ Screwdriver/ Wire stripping pliers/ Multimeter.

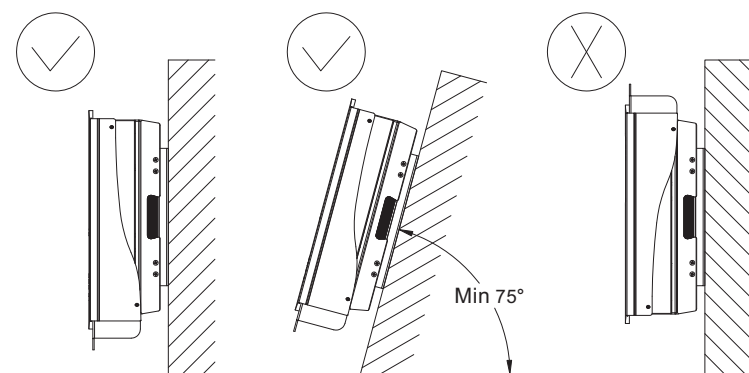
B List of Articles

 Inverter 1PC	 Installation Bracket 1PC	 User Manual 1PC	 Packing List 1PC
 Warranty Card 1PC	 Quick Installation Guide 1PC	 DC Connector(+) 2PCS	 DC Connector(-) 2PCS
 AC Connector 1PC	 RS-485 Connector 2PCS	Plastic Expansion Pipe 6PCS	
 Screw 8PCS	 Factory Certificate 1PC	Self-tapping Screw 6PCS	
 Flat Washer 14PCS		* One pc of PV1K5TL. If any pieces are missing , please contact your nearest dealer.	
 Spring Washer 14PCS			

C Warning

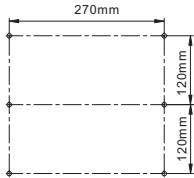
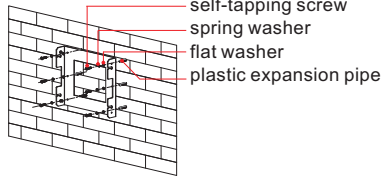
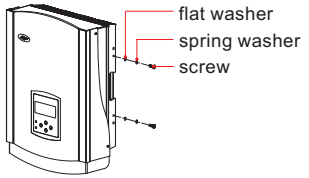
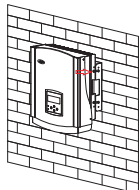
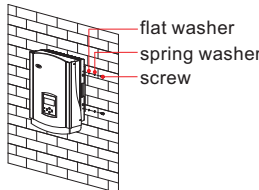
- In order to ensure personal safety and the normal use of inverter, the following prerequisites must be fulfilled:
- Get permission from the local power department when generating with the grid connected inverter, and should be operated by a professional technician.
 - All electrical installations must comply with the relevant local regulations and standards.
 - The inverter operates with high voltage. Thus make sure the inverter is disconnected from AC, DC power and external control power before doing any operation on the interior of the inverter. Wait at least 5 minutes and measure the bus voltage of DC end with multimeter to ensure the capacitor is fully discharged.
 - Beware of the hot surface of the inverter, as its temperature remains high even after the inverter power-off for a while.
 - Please contact the local designated installation and maintenance staff if needed.
 - Non-isolated inverters require PV Modules that have an IEC61730 Class A rating.
 - The PV array's DC voltage of this inverter reaches up to 550V, and the power grid AC end voltage is 264V, it is forbidden to touch the charged terminal directly. Make sure the AC and DC end are powered off before installation and/or maintenance.

D Installation position



- Mount the inverter vertically or at a tilted back range of more than 75° with the electrical terminals downwards.
- Never mount the inverter forwards.
- Never mount the inverter horizontally.

E Installation Procedure

<p>Step 1: Drill holes.</p>  <p>Hole diameter 8mm, depth 50mm.</p>	<p>Step 2: Mount the bracket.</p>  <p>Mount the bracket vertically to the wall according to the figure.</p>	<p>Step 3: Fasten the inverter.</p>  <p>Fasten the two sides of the inverter according to the figure.</p>
<p>Step 4: Hang the inverter.</p>  <p>Put the bolt into the grooves of the bracket and push to the groove bottom.</p>	<p>Step 5: Fasten the inverter and bracket.</p>  <p>Fasten the inverter and bracket according to the figure.</p>	<p>So far the inverter has been mounted. Check visually whether the inverter is mounted correctly. Connect the electricity just after the inverter is mounted.</p>

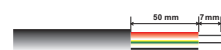


F AC End Connecting

Warning:

1. Disconnect the power supply of the AC and DC end before making an electrical connection.
2. During the installation cover the PV array with cloth.
3. Connect the inverter to the power grid only after getting permission from the local power department.

Step 1: Strip the outer insulation as shown in figure.



Cross-sectional area of each cable is recommended for 4mm².

Step 2: Put the cables through the screw cap and the sleeve.



Step 3: Put the L(red), N(black) and GND (yellow and green) terminals into the corresponding jacket sockets and tighten.



Step 4: Tighten the above components.



Step 5: Connect the female connector to the male connector which is attached on the inverter.



G DC End Connection

Warning:

1. Disconnect the power supply of the AC and DC end before making an electrical connection.
2. Ensure the voltage of each path PV string won't exceed 550V.
3. For the safety, please connect all strings of the inverter.

Step 1: Strip outer insulation, about 15mm.



Cross-sectional area of the cable is recommended for 4mm².

Step 2: Put the cables through the securing nut.



Step 3: Put the cable conductor section through the tube core, press buckle cover and hear that the connection is in place.



Step 4: Insert the positive and negative tube cores into the connector sleeve and tighten the nut.



Step 5: Align this two connectors and connect them with the connectors on the inverter until a click is heard or felt.



H RS485/LAN Communication

Step 1: Strip the outer insulation, about 5mm.



Step 2: Weld the wires to the pins and then tighten the heat-shrinkable tube.



Pin3 is RS485A, Pin2 is RS485B.

Step 3: Put the nut for butt joints, sealing ring and the body sequentially through the cable and tighten.



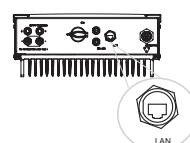
Step 4: Screw the nut onto the body.



Step 5: Screw the connector onto the inverter and tighten the nut for butt joints.



Using LAN, please insert the network cable into the LAN interface on bottom of inverter.



I Commissioning

Commissioning procedures:

1. Check whether the open-circuit voltage of each PV battery meets the requirements, and ensure the positive and negative polarity is correct.
2. Make sure the breaker between the inverter and the power grid is on the OFF status.
3. Make the circuit check and make sure the positive and negative polarity should be the same as those in PV array.
4. Make sure all the above items meet the requirements.
5. Switch off the external AC breaker.
6. Switch off the DC breaker.
7. Check whether the indicator lamps and liquid crystal screen work normally.
8. When the inverter runs successfully, the green lamp lights up (as shown in right picture), otherwise, the red lamp lights up. Switch off the circuit, remove the failures according the tips and start it up again until succeed.

