TF SOLAR semi flexible panel

installation instruction

1.0 Overview

This manual provides important safety instructions for the installation, maintenance and use of TF series solar module. Users and installers must read it carefully and strictly abide by it. Failure to follow these safety guidelines may lead to casualties or property losses. The installation and operation of solar module require specialized skills, and only professionals can do this job. Please read the safety and installation instructions before using and operating the components. The installer must inform the end customer (or consumer) of the above matters accordingly.

The "component" in this specification refers to one or more TF series solar module. Please keep this manual for future reference.

1.1 Disclaimer

Sungold reserves the right to change this installation manual without prior notice. Sungold does not guarantee any express or implied information contained in this manual. If the customer fails to follow the requirements listed in this manual during the installation of components, the limited warranty provided to the customer will be invalid.

1.2 mitation of liabilityLimitation of liability

Sungold is not responsible for any kind of injury, including but not limited to component operation, system installation and whether it is responsible for physical injury, injury and property loss according to the instructions in this manual.

Sungold is not responsible for any kind of injury, including but not limited to component operation, system installation and whether it is responsible for physical injury, injury and property loss according to the instructions in this manual.

2.0 Safety precautions

Warning: Read and understand all safety rules before installing, wiring, operating and/or maintaining components. When the assembly is exposed to sunlight or other light sources, DC electricity will be generated. Regardless of whether the components are connected or not, direct contact with live parts of the components, such as wiring terminals, may lead to casualties.

General safety rules

All installation work must fully comply with local and local regulations and corresponding domestic or international electrical standards. Please use insulating tools to reduce the risk of electric shock.

Use appropriate protective measures (non-slip gloves, work clothes, etc.) to avoid direct contact with 30V DC or higher voltage.

Please do not wear metal ornaments during installation, so as not to puncture the components and cause electric shock.

If components are installed or operated in rainy days, strong winds or dewy mornings, appropriate protective measures should be taken to avoid injuries to components and personnel.


Children or unauthorized personnel are not allowed to approach the installation area or the component storage area.

In the process of assembly installation or wiring, if the circuit breaker and overcurrent protection circuit breaker can't be turned on or the controller can't be turned off, cover the array assembly with opaque material to stop power output.

- Do not use or install damaged components.
- Do not attempt to repair any part of the assembly, there are no components available to users in the assembly.
- The cover of the junction box should be kept closed at all times.
- Do not disassemble the component or move any part of it.
- Do not connect or disconnect components when there is current or external current.

Fire safety

- Consult your local department for guidance and requirements on installation or building fire safety.
- The top structure and installation may affect the fire safety of the building; Improper installation may lead to fire hazard.
- Use equipment such as ground fault interrupters and fuses at the request of local authorities.
- Do not operate the panel in an environment that may generate flammable gas or near the equipment.

3.0

Mechanical properties/electrical properties

The rated electrical performance data of the module were measured under standard test conditions (STC) with irradiance of 1kw/m2, AM1.5 and cell temperature of 25℃. Specific electrical performance parameters of TF series solar module in this installation manual. The nameplate of each component is also marked with the main electrical performance parameters under STC conditions.

In some cases, the current or voltage generated by a component may be greater than the optimal working current or voltage in its standard test environment (STC). When determining the component rating and load value, the open circuit voltage and short circuit current of the component under STC should be multiplied by 1.25. When determining the appropriate wire and fuse specifications, it is necessary to multiply the short-circuit current by 1.25 and the open-circuit voltage by the correction factor according to local regulations.

4.0

Storage and Unpacking

Precautions and General Safety Rules

- Components should be stored in a dry and ventilated environment.

- It is forbidden to carry the components through the wires or junction boxes of the components. When carrying the components, two or more people should hold the components.
- Handling of overhead components is prohibited.
- It is forbidden to stack components more than 10 layers.
- Do not grab the junction box or wires to lift the whole assembly.

Before installing photovoltaic modules, check whether the modules are damaged during transportation, and do not install damaged photovoltaic modules. If you find that the photovoltaic module is damaged, please contact sungold Company to get the information you need to complain about the defective photovoltaic module.

The surface of photovoltaic module is easily damaged, and the damaged photovoltaic module may affect its performance and safety; Do not damage or scratch the surface of the photovoltaic module. For your safety, please do not disassemble or modify the components in any way, which may affect the performance and safety of the components, even cause irreparable damage, and will invalidate any trial warranty.

5.0

solar panel Installation

- Components shall not be installed near flames or combustible objects.
- Components shall not be immersed in water (pure water or salt water) or in an environment (such as fountains, waves, etc.) that has been exposed to water (pure water or salt water) for a long time.
- Do not drop or pile items (such as installation tools) on the components.
- Ensure that the components meet the overall technical requirements of the system.
- Allows components to be connected in series to increase voltage or in parallel to increase current. When connected in series, the positive pole of the module is connected to the next negative pole. When connected in parallel, the anode of one module is connected with the anode of the next module. The number of bypass diodes provided will vary according to the module model.

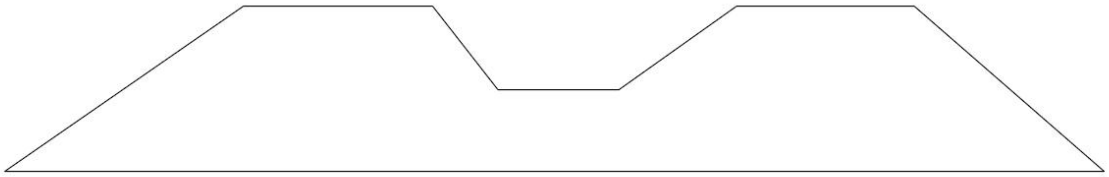
Avoid shadows

Even a few shadows (such as dust, bird droppings, branches) will cause a decline in power generation. An assembly can be considered "unshaded" if all surfaces of the assembly have not been occluded for a whole year. Ensure that even on the shortest day of the year, sunlight can still shine on the components. When the components are installed on the RV, the shadows of buildings and trees should be avoided when parking. Frequent shielding of the module will lead to EVA aging and continuous heating of the battery, which may lead to the damage of the module and its unavailability.

Safety precautions for product trampling

TF series solar module, ST series SG-TF-T-XX Sunpower solar module can be trampled unnecessarily, and pedestrians can cross the components. However, the following installation conditions must be met:

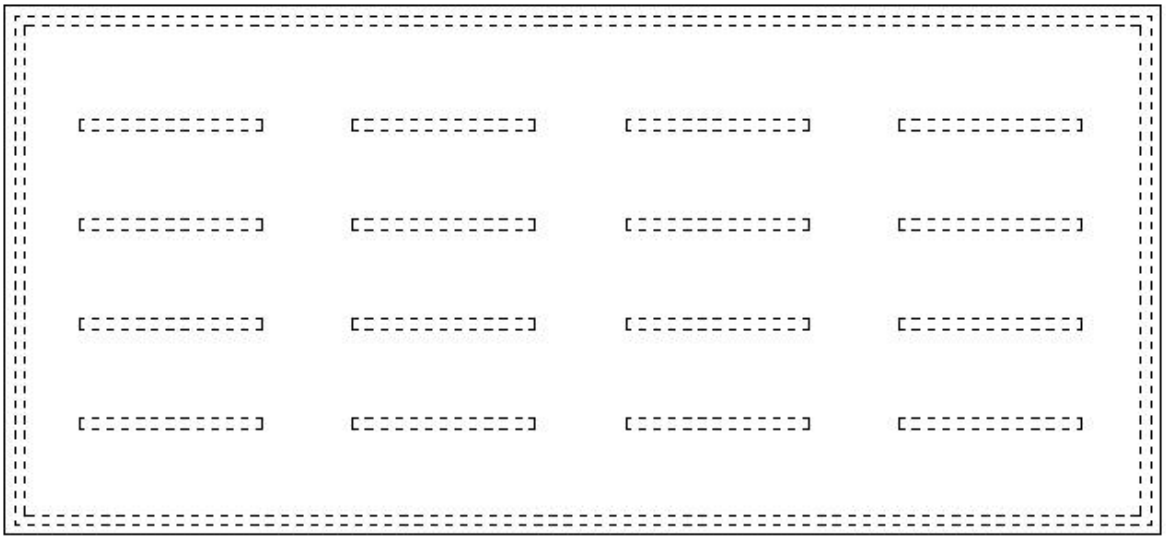
- Solar module must be completely attached to the installed surface, with no gaps in the middle and no protrusions on the installed surface. As shown below, identification is prohibited.



.

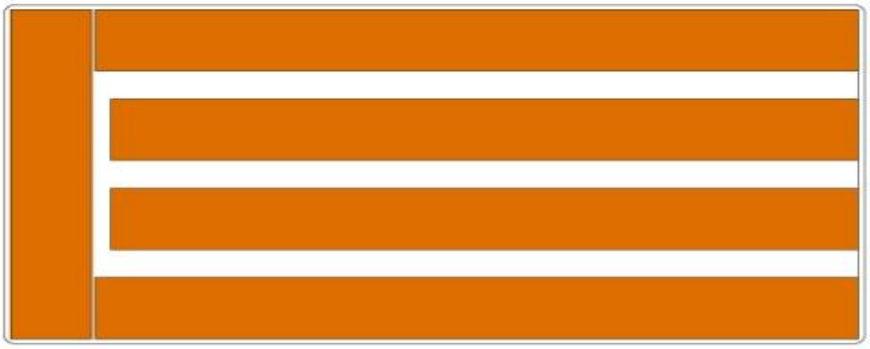
- There is no sharp object on the sole, so please don't tread in high heels.
- SG-TF-M-XXX series solar module is forbidden to trample.

Conventional installation
Glue installation



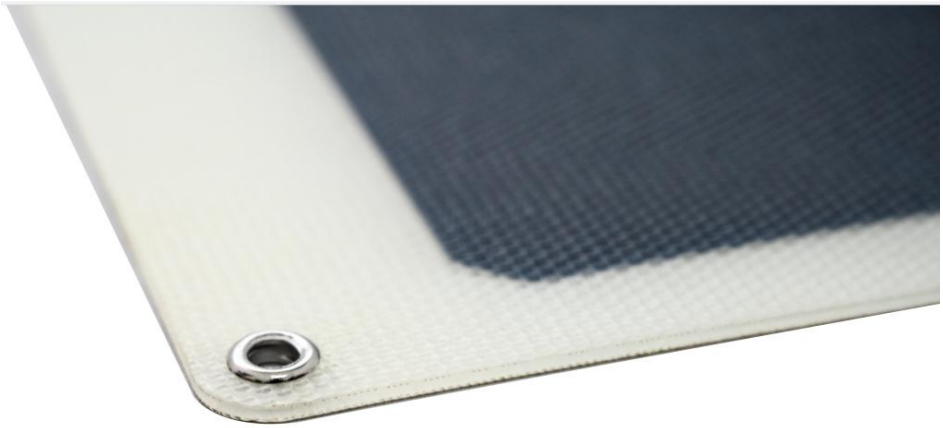
Before installation, the solar module backboard and the surface to be installed must be clean, and polyurethane sealant is recommended for bonding and fixing. Glue method: As shown in the above figure, attach the solar module to the installed surface for fixing. Then the gap between the solar module and the edge of the installed surface is filled with glue to prevent moisture from entering. After 48 hours, the adhesive reached the maximum bonding strength.

Double sided adhesive

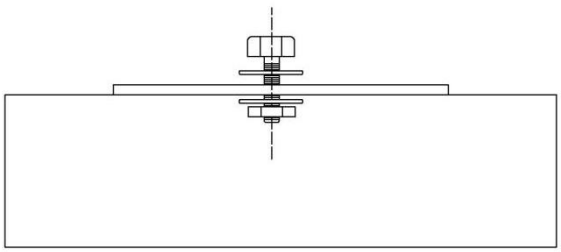


It is installed by double-sided adhesive, and 3M VHB series double-sided adhesive tape is recommended. The adhesive tape is attached as shown in the above figure, and then fixed on the installation surface.

Screw fixation



Through the corn hole on the solar module, screws and bolts can be fixed, and the installation surface must be regular. The solar module must be able to fit on the installed surface, and hanging installation is prohibited.



Each component needs to be fastened by at least 4 points on two long sides.

• Use suitable fasteners with corrosion resistance. All fastening fasteners (such as bolts, elastic washers, flat washers, nuts, etc.) need to be made of stainless steel.

5. 1

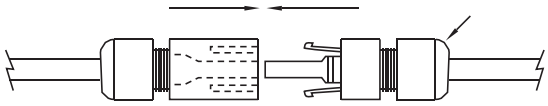
solar panel connection

Correct electrical wiring

Check whether the wiring is correct before starting the system. If the measured open-circuit voltage (Voc) and short-circuit current (Isc) are inconsistent with the provided specifications, there may be a wiring fault.

Correct connection of electric plug

- Ensure that the connector is fastened and connected correctly. The connector shall not bear external pressure.
- Connectors can only be used for circuit connection function, and not for opening and closing circuits.
- The connector connection should be kept dry and clean to prevent rain and moisture. Protect the connector from direct sunlight and water immersion.



Connection of MC4 male connector and female connector

5. 2

Grounding

· Equipment grounding: semi-flexible components have no exposed conductors, so grounding is not required according to NEC regulations.

• Since the mounting bracket is a conductor or needs to be grounded, please ensure that the whole system installation meets local electrical codes and regulations.

6. 0

Maintain

- Do not replace components (diodes, junction boxes, connectors, etc.) without authorization.
- Routine maintenance measures should be taken to keep the components free of snow, bird droppings, seeds, pollen, leaves, branches, dust, stains, etc.
- If the component has a sufficient inclination angle (at least 15), it is usually unnecessary to clean the component (ETFE rain will have a self-cleaning effect). If there is a lot of dirt accumulated on the surface of the component, wash the component array with water without detergent and a gentle cleaning tool (sponge) when it is cool during the day. Do not scrape or wipe the dust under dry conditions, otherwise it will lead to tiny scratches.

- If there is snow or dust, you can use a brush with soft hair to clean the surface of the component. ™
- Check the system regularly to ensure that the wiring and supporting structure are intact.
- If you need to check or maintain the electrical or mechanical performance, it is recommended that the inspection or maintenance be carried out by a certified and recognized professional to avoid electric shock or casualties.