

CW Enerji®

Crystalline Photovoltaic Modules

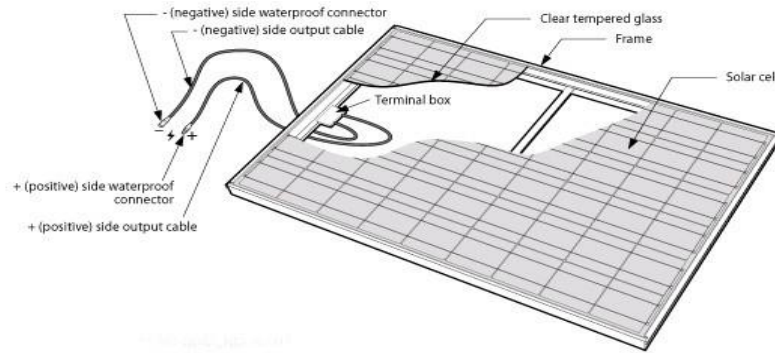
LOGIN

CW Enerji Mühendislik Tic. and San. Inc. is a high technology company that develops, researches, manufactures, sells and provides crystal silicon wafers, solar cells, solar panels and photovoltaic systems.

CW Enerji Mühendislik Tic. and San. Inc. in Europe and the Far East in the field of photovoltaic energy, they have established strong, reliable and principled strong partners. Whether you need product supply or turnkey projects, our strong and experienced staff cater to the needs of your valuable customers with a wide range of products and services. We work on this field with an understanding that does not compromise on quality and has a mission to customer satisfaction first degree.

POWER MODULES

CW Enerji solar photovoltaic modules are composed of crystalline silicon solar cells arrayed in a series of electrically interconnected, tempered glass encapsulated between the supery and undersurface. The laminate surface is anodized with an aluminum frame to provide an easy installation and infrastructure to protect the cells from bad weather conditions.



APPLICATIONS

CW Enerji The FV modules are an almost maintenance-free direct current (DC) electrical source designed to use the sun's rays in the most efficient way. The CW Energy Module family is ideal for powering in battery-powered or non-battery-powered houses, caravans, water pumps, telecommunications systems and many other applications. Class A, modules of this application class can be used in large systems operating at 50 V DC or 240W, which is expected to be used for general link access. Modules are evaluated according to IEC 61730 and IEC 61730-2 safety quality standards and all requirements of "safety grade II" are met in this application class.

Notes: The recommended maximum serial / parallel module configurations are as follows:

96 5 "mono series: 13/3
72 5 "mono series: 17/3
60 5 "mono series: 21/3
54 5 "mono series: 23/3
36 5 "mono series: 34/3
60 6 " mono poly: 21/3
36 6 " mono poly: 36/3

72 6 " poli series: 18/3
54 6 " poli series: 24/3



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PERMISSION

Before installing your system, contact your local authorities to determine the required permit, installation and inspection requirements.

CLIMATE SITUATION

CW Enerji solar crystal series modules build in the following climatic conditions.

Ambient temperature	: -20 ° C to + 40 ° C
Operating temperature	: -40 ° C to + 85 ° C
Storage Temperature	: 40 ° C to + 40 ° C
Moisture	: Below 85RH%
Wind Pressure	: Less than 50.12 lb / ft & lt; 2 & gt; (2400 Pa)
Corrosion Resistance	: Outside corrosive salt area and sulfur field

WARNING AND NOTES FOR SAFE INSTALLATION WORK

- This system can only be set up by engineers and assembly team who have completed the training course.
- Each Solar Panel has a connection box that can be cabled according to the needs of the customer.
- The installer and the assembly team must know the potential for death and the possibility of serious bodily injury.
- Do not interrupt the connection cable during installation.
- Do not modify the solar panel, do not play any part or layer of it.
- Do not use any chemicals on the solar panel surface.
- Do not expose the solar panel to condensed sunlight with mirrors, lenses, or similar means.
- We comply with local codes and specifications for solar panel installation, we obtain the necessary licenses and permits.
- Rings, metal jewelery, diamond jewelery jewelry and so on. Do not wear items. Keep the module surface away from the panes during installation and assembly of any kind of plotter.

SAFETY RULES FOR SOLAR ENERGY SYSTEMS INSTALLATION

- Take the following precautions before starting work.
- Plan the job and visit the work area before starting work.
- Do not work alone in the work area. Always work with at least one person.
- Check electrical appliances before using them.
- Pay attention to the safety rules during installation.
- Do not wear metallic fittings that could cause electric shock.
- Remove the back surface of the solar panel from foreign bodies.
- Cover the surface of the solar panel with an opaque material to stop electricity

NECESSARY INFORMATION

Do not expose the artificial concentrated sunlight directly to the panellas. Electrical nominal values are presented with a margin of error of approximately 10% of the values measured under standard test conditions: 1000 W / m², 25 ° C cell temperature and solar spectrum radiation power to each ASTM E 892, radiance in the AM 1.5 spectrum. Under normal conditions, a photovoltaic panel can produce more electricity and voltage as declared under standard test conditions. Accordingly, the ISC and VOC values must be multiplied by a factor of 1.25, taking into account the nominal voltages, the transmission capacity, the fuse size, and the controller size connected to the panel outlet. There may be an additional multiplication factor applicable outside of 1.25 in accordance with the national electricity law.

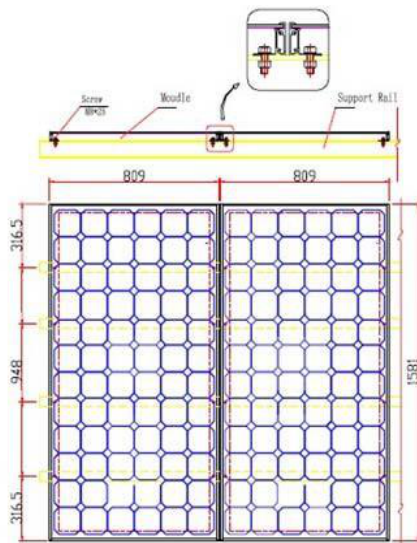
POINTS TO BE CONSIDERED WHEN SELECTED INSTALLATION PLACE

- Set the solar panels as far as possible in the equatorial direction. It is possible to install in east and west directions, but the amount of energy produced is less.
- Install in places with nice sunbathing throughout the year. Where there is a lot of shadows, the amount of energy production is decreasing.
- The output of the solar panel arrays in the series is connected to the inverter input. The panel arrays are spaced apart, in this case the solar panels can receive an equal amount of sun.
- Solar panels are not suitable for installation in areas exceeding the maximum allowable load

INSTALLATION AND NOTES

The module frames are made from anodized aluminum and can be corroded if they are in contact with another metal (electrolysis corrosion) in environments where salt water is dense. If necessary, PVC or stainless steel washers should be used between the module frame and the support construction material to prevent such corrosion. The support construction material, which ensures that the modules are correct from wind and snow load, must be inspected and approved by local authorities and civilian experts before installation.

CW Enerji modules can be installed using the following method: Corrosion resistant (M8) screws must be screwed using the holes provided in the module frame.



Mounting Drawing 2 (with screws)

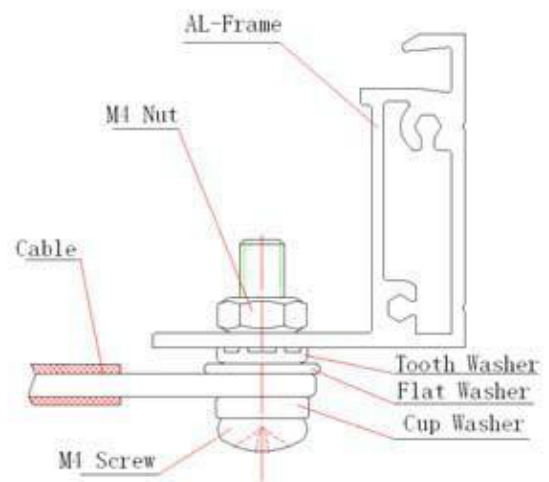
Each module has 8 screw holes (12mm * 9mm) to secure the connection for the supporting construction. Module frames should be added to the support construction with stainless steel M8 hardware and steel spring washers and steel washers from eight locations symmetrically located on the module. The applied torque should be about 8 Newton Meters. The module clamps must not touch the windscreen surface and the frame should not deform. Prevent module clamps and splices from shading. Module frames should never be changed, joints or extrusions should be made. The distance between 2 modules is recommended as 5 mm considering the thermal expansion. The gap distance between the module frame and the mounting surface is intended to prevent the junction box from touching the surface and to allow warm air to flow behind the module.

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GROUND

All module frames and mounting and support parts must be grounded according to national electrical codes with the correct and the same characteristics. Correct grounding is done by connecting the frame and other mounting parts to each other by means of a suitable grounding conductor. The grounding conductor must be from copper, copper plating or other material specified in national electrical code. The earth conductor must be connected to the earth by a suitable grounding electrode located on the ground.

Wire grounding Attach M4 screws, cup washers, flat washers, thread washers and M4 nuts as a separate transmitter from the 4mm diameter grounding holes marked "GR" on the module as shown. Positive electrical contact is provided with the frame.



INSTALLATION

Use corrosion-resistant M8 screws in the mounting holes in the module frame.

- Align the support structure (carrier material) with the holes on the module frame.
- The module must be connected to 8 symmetrical point supporting structures on the module using M8 stainless steel hardware, spring washers and flat washers.
- The hollow space between the module frame and the mounting surface is intended to prevent the connection box from touching the surface to which it is tilted and to circulate warm air behind the module.
- Connecting the Sun Panels.

Connect each line as if it were in the solar array connection examples.

- Each solar panel has one (+) and one (-) cable on the back. Attach the water resistant connector connectors to this cable, making sure that it is fully seated when attaching the connectors.





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- In the first solar panel, connect the positive home run cable to the positive group cable and connect the negative cable to the positive cable of the second panel. Connect the negative solar cable in the second panel to the positive cable of the third panel. Continue to connect the series in this manner until the desired voltage and power rating is achieved.
- After making a direct connection between the desired number of panes, measure the voltage and current output values of the panel array with the digital multi meter.
- Arrange the wiring between the solar panel.

Daily maintenance instructions

- Do not wash modules without professional authorization and use appropriate equipment for the safety of your work. Act as aware of the danger in the work area.
- Before clearing the modules, check for cracks and cracks. If the module is broken or cracked, do not clear it and inform the person or organization that installs as soon as possible.
- Do not use strong chemical detergents, disinfecting cleaning agents during cleaning operations. Excessive pollution will result in low efficiency on the panes. For this reason, only water is recommended for panel cleaning. Choose neutral soap or soapy water to dispose of the flakes created by animals. If you have a hard time cleaning, you can use a soft sponge or a piece of cloth, working as smoothly as possible without scratches during cleaning. Do not wear watches or jewelry during cleaning, do not try to get rid of animal dirt. Scratches lead to inefficiency and lead to out of warranty. If the inclination of the modules is more than 15 degrees, the modules can be cleaned by themselves. If the inclination is less than 15 degrees, regular cleaning is obligatory. Perform regular corrosion testing of the support and carrier components, if you encounter such a finding, notify the installer or the institution. Regularly check the integrity of the ground terminal. Do not try to change the electrical connections at all, but if you suspect a short circuit, inform the installation team.
- The connection points of the module infrastructure system must be controlled at least once a month, if it is based on a moving vehicle such as a caravan or a mobile vehicle, it should be checked at least every 15 days and all connections with the 6th allen key and other suitable equipment units need to be bored. It is the user's responsibility to damage the systems installed on mobile vehicles and to cause damage due to behaviors contrary to the traffic rules. **CW Enerji** is not obligated.
- If you do not have any problems, do not contact the installer or consultant or contact us at www.cw-enterji.com and contact us.
- Responsibility for all damages except for warnings and precautions written in the user manual belongs to the system user. **CW Enerji** Mühendislik Tic. and San. Inc. we do not accept any liability for any problems or damages arising from such use.

I have read and agree to the above terms of use.

System User:

Name and surname :

Address:

Telephone :

History :

Signature: