



**Installation Instruction
for DMEGC Photovoltaic Module**

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1. Purpose of this guide

This guide contains information regarding the installation and safe handling of DMEGC photovoltaic module (hereafter is referred to as “module”).

All instructions should be read and understood before attempting to install. If there are any questions, please contact our sales department for further explanation. The installer should conform to all the safety precautions in the guide when installing the module. Local codes should also be followed in such installation.

Before installing a solar photovoltaic system, the installer should become familiar with the mechanical and electrical requirement for such a system. Keep this guide in a safe place for further reference (care and maintenance) and in case of sale or disposal of the module.

2. Safety precautions

Installing solar photovoltaic systems may require specialized knowledge and appropriate technical skills. Therefore installation should be performed only by qualified person.

The installer should assume the risk of all injury that might occur during installation, including, without limitation, the risk of electric shock.

One individual module may generate DC voltages greater than 30 volts when exposed to direct sunlight. Contact with a DC voltage of 30V or more is potentially hazardous.

When disconnecting wires connected to a photovoltaic module that is exposed to sunlight, an electric arc may result. Such arcs may cause burns, may start fires and may otherwise create problems. Therefore be extremely careful!

Photovoltaic solar modules change light energy to direct-current electrical energy. They are designed for outdoor use. Modules may be ground mounted, mounted on rooftops, vehicles or boats. Proper design of support structures are responsibility of the system designer and installer. Use of mounting holes is suggested in a following paragraph.

Do not attempt to disassemble the module, and do not remove any attached nameplates or components.



Do not apply paint or adhesive to module top surface.

Do not artificially concentrate sunlight on a module.

Do not use mirrors or other magnifiers to artificially concentrate sunlight on the module.



When installing the system, abide with all local, regional and national statutory regulations. Obtain a building permit where necessary. Abide with any local and national regulations when mounting

on vehicles or boats.

Solar modules produce electrical energy when light shines on their front surface. The DC voltage may exceed 30 V. If modules are connected in series, the total voltage is equal to the sum of the individual module voltages. If modules are connected in parallel, the total current is equal to the sum of individual module currents.

Keep children well away from the system while transporting and installing mechanical and electrical components.

Completely cover the module with an opaque material during installation to keep electricity from being generated.

Do not wear metallic rings, watchbands, ear, nose, lip rings or other metallic devices while installing or troubleshooting photovoltaic systems.



Use only insulated tools that are approved for working on electrical installations.



Abide with the safety regulations for all other components used in the system, including wiring and cables, connectors, charging regulations, inverters, storage batteries and rechargeable batteries, etc.

Use only equipment, connectors, wiring and support frames suitable for use in a solar electric system. Always use the same type of module within a particular photovoltaic system.

Rated electrical characteristics are within ± 10 percent of the indicated values of I_{sc} , V_{oc} , and P_{max} under standard test conditions (irradiance of $100\text{mW}/\text{cm}^2$, AM 1.5 spectrums and a cell temperature of 25°C (77°F)).

Under normal outdoor conditions, the module will produce current and voltages that are different from those listed in the data sheet. Data sheet values are expected at standard test conditions.

3. Mechanical Installation

3.1 Selecting the location

Select a suitable location for the module installation, where they receive maximum sunlight throughout the year.

The module must be facing true south in northern latitudes and true north in southern latitudes.

For detailed information on the best elevation tilt angle for the installation, refer to standard solar photovoltaic installation guides or a reputable solar installer or systems integrator.

The module should not be shaded at any time of the day.

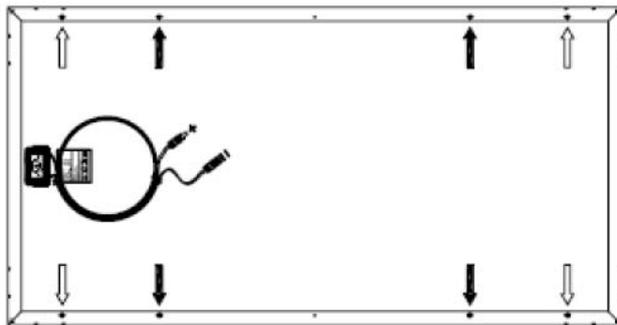
Do not use module near equipment or in locations where flammable gases can be generated or collected.

3.2 Selecting the proper support frame

Always observe the instructions and safety precautions included with the support frame to be used with the module.

No attempt must be made to drill holes in the glass surface of the module. Doing so will void the warranty.

Do not drill additional mounting holes in the frame of the module. Doing so will void the warranty. Modules must be securely attached to the mounting structure using four mounting points for normal installation. If additional wind or snow-loads are anticipated for this installation, additional mounting points are also used. The details please see the below drawing. Load calculations are left to the system designer or installer.



- ↑ Mounting holes for normal installation
- ↑ For high wind and snow-loads, these mounting holes must also be used

The support module mounting structure must be made of durable, corrosion-resistant and UV-resistant material.

4. General installation

When mounting the module, use the pre-drilled mounting holes in the frame.

Do not lift the module by grasping the module's junction box or electrical leads.

Do not stand or step on the module.

Do not drop modules or allow objects to fall on modules.

To avoid the breakage of the glass of the module, do not place any heavy objects on the module.

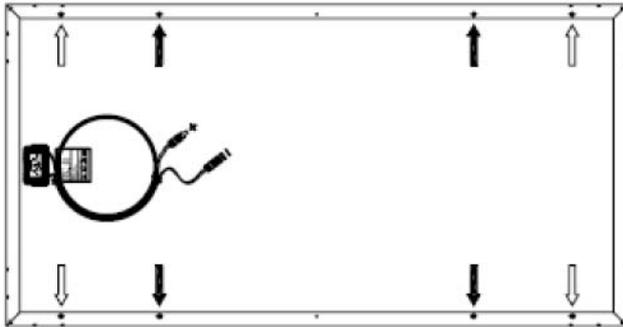
Do not set the module down hard on any surface.

Inappropriate transport and installation may break the glass of the module.

4.1 Bolting

The most common mounting is achieved by mounting the module using the four symmetry points close to the inner side on module frame.

If excessive wind or snow-loads are expected, all eight mounting holes must be used.



↑ Mounting holes for normal installation.

↑ For high wind and snow-loads, these mounting holes must also be used

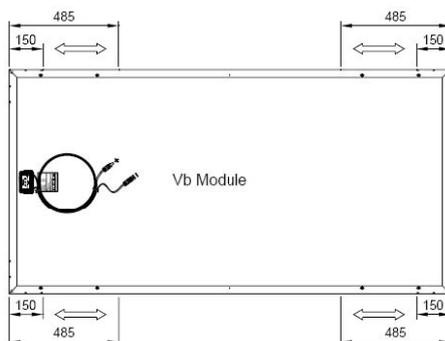
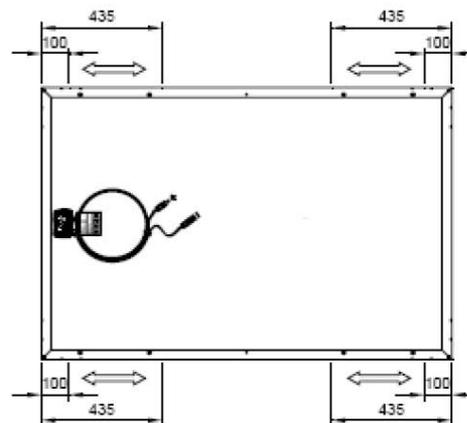
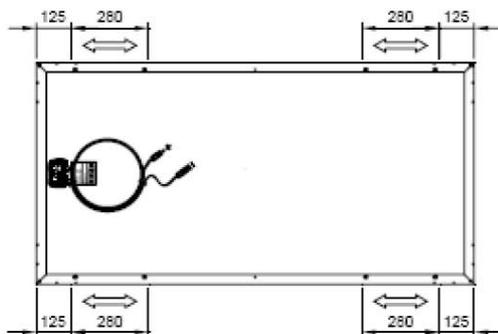
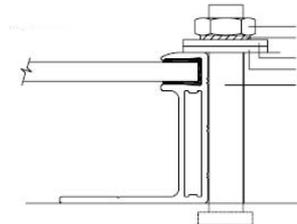
4.2 Clamping on

It is suggested Modules are installed at least 10cm higher from the ground.

We recommend using a torque wrench for installation.

The tightening torque (using only stainless steel M8 bolts) should be around 15-20 Nm.

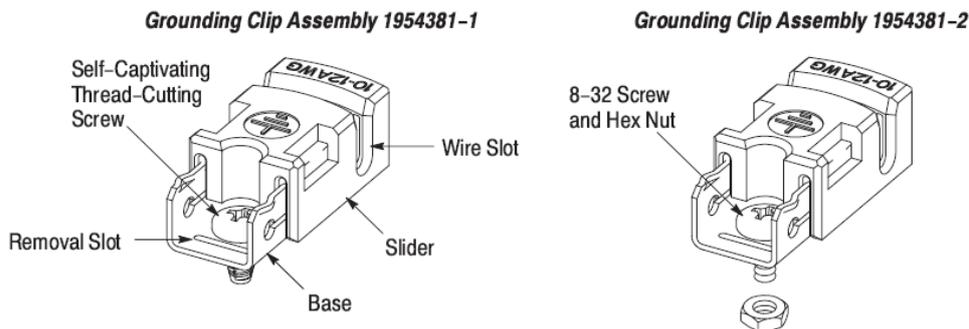
1. Stainless steel M8 nut
2. Stainless steel serrated washer
3. Aluminum clamping plate
4. EPDM washer 2 mm
5. Stainless steel M8 t-head bolt



↔ Variable clamping range

5. Electrical Installation Grounding

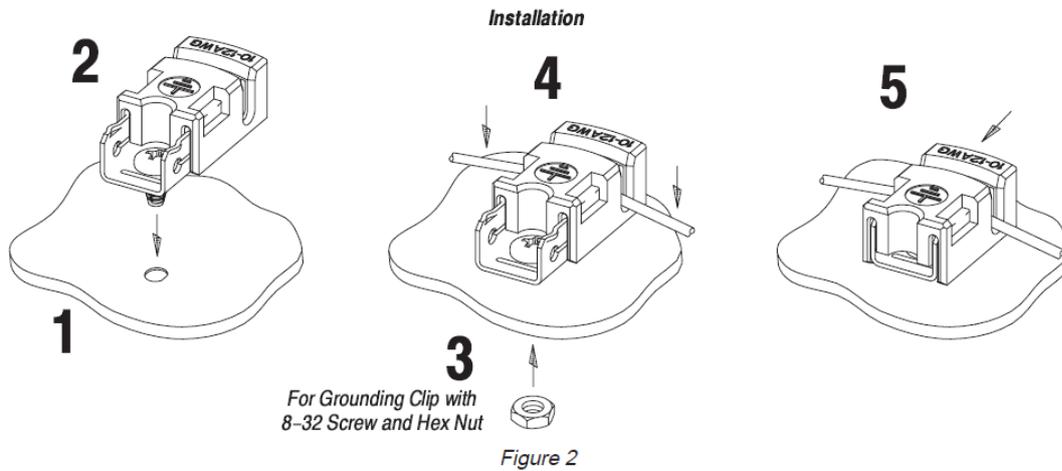
We recommend customers use SolKlip Grounding Clip Assemblies 1954381-[]; SolKlip Grounding Clip Assemblies 1954381-[] are used with metal-framed photovoltaic (solar) panels and related products that require grounding for safety reasons.



The grounding clip assembly consists of a slider, base, and self-captivating thread-cutting screw or 8-32 screw and hex nut. The grounding clip accepts solid uninsulated copper wire sizes 10 or 12 AWG.

Installation

1. Using a No. 21 drill bit, drill a (4.09-mm [.161-in.] diameter) hole in the frame.
2. Place the grounding clip onto the frame, making sure that the screw straddles the drilled hole. Using a No. 2 cross-recessed screwdriver, thread the screw into the hole until the head is flush with the base and the base is flush with the frame, then tighten the screw with another 1/4 to 1/2 turn. Recommended torque is between 2.3 and 2.8 Nm [20 and 25 in.-lbs].
3. For the grounding clip with the 8-32 and hex nut, thread the hex nut onto the end of the screw, then using a 3/8-in. wrench, tighten the nut.
4. Insert the wire into the wire slot. Press down on both ends of the wire (the wire slot will cause the wire to form a slight curve).
5. Manually, or using channel lock pliers, push the slider over the base until it covers the base. This will terminate the wire.



Do not use modules of different configurations in the same system.

Several modules are connected in series and then in parallel to form a PV array, especially for application with a high operation voltage. If modules are connected in series, the total voltage is equal to the sum of individual voltages.

For applications requiring high currents, several photovoltaic modules can be connected in parallel; the total current is equal to the sum of individual currents.

The module is supplied with Multi-contact connectors (PV-KBT3, PV-KST3, PV-KBT4 and PV-KST 4) to use them for the electrical connections of the system. Use the National Electric Code to determine system wiring size, type and temperature rating of conductors to be connected to the module's connectors. Wiring connected to the modules should be #12 AWG, LAPP 4mm² (minimum) and must be temperature rated at 90°C (minimum).

The cross section area of cable and the capacity of connector must be selected to suit the maximum system short circuit current, otherwise the cable and connector will be overheated under large current.

Module over-current protection, rated for DC use, of 8 amperes maximum should be used.

The junction box has a breather port which must be mounted facing down and can not be exposed to the rain. So the junction box should be on the higher side of the module when it is mounted.

6. Maintenance and care

DMEGC recommends the following maintenance in order to ensure optimum performance of the module:

Clean the glass surface of the module as necessary. Always use water and a soft sponge or cloth for cleaning. A mild, nonabrasive cleaning agent can be used to remove stubborn dirt.

Check the electrical and mechanical connections every six month to verify that they are clean, secure and undamaged.

If any problems arise, users should have them investigated by a competent specialist.

Attention, observe the maintenance instructions for all components used in the system, such as support frames, charging regulators, inverters, batteries etc.



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7. Disclaimer of liability

Because the use of this manual and the conditions or methods of installation, operation, use and maintenance of photovoltaic (PV) product are beyond DMEGC's control, DMEGC does not accept responsibility and expressly disclaims liability for loss, damage, or expense arising out of or in any way connected with such installation, operation, use or maintenance.

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