



DMEGC Photovoltaic Modules Installation Manual

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1. General Information

Thanks for choosing DMEGC Solar PV modules.

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

DMEGC solar Modules are designed to meet the requirements of IEC 61215 and IEC 61730, application class A, Modules rated for use in this applications class may be used in system operating at greater than 50V DC or 240W, where general contact access is anticipated Modules qualified for safety through IEC 61730-1 and IEC 61730-2 and within this application class are considered to meet the requirements for safety class II equipment.

2.1 General Safety

- Installing solar photovoltaic systems requires specialized skills and knowledge.
- Installation must only be performed by authorized and trained personnel. Installers must assume all risks of injury that might occur during installation, including, but not limited to, the risk of electric shock.
- One single module may generate more than 30V DC when exposed to direct sunlight. Contact with a DC voltage is potentially hazardous and should be always avoid.
- PV modules are recommended to be installed at altitudes of less than 2000m.
- Modules can be ground mounted, mounted on rooftops. The proper design of support structures lies within the responsibility of the system designers and installers.
- When installing the system, abide to all local, regional and national statutory regulations. Obtain a

building permit if necessary.

- The electrical characteristics are within ± 3 percent of the indicated values of I_{sc} , V_{oc} and P_{max} under standard test conditions (irradiance of 1000 W/m^2 , AM 1.5 spectrum, and a cell temperature of $25 \text{ }^\circ\text{C}$ ($77 \text{ }^\circ\text{F}$)).
- Only use equipment, connectors, wiring and support frames suitable for solar electric systems.
- Always use fall protection equipment when working from heights of 6 feet (183cm) or above. Follow Occupational Safety and Health Act (OSHA) or local governing safety regulations regarding Fall Protection. (UL Only).
- Do not sit, stand, step or walk on any side of the module, including the frames. Do not permit any part of the module(s) to be submerged or allow for constant water to soil the module(s) unless it's natural rain fall or periodic cleaning.

2.2 Operating safety

- Do not open the package of DMEGC Solar Modules during transportation and storing until they are ready to be installed.
- Store pallets in a ventilated, rain-proof and dry location until the Modules are ready to be unpacked.
- During the transportation, do not to apply direct pressure on the backsheet or front glass.
- Inappropriate transport and installation may break the module and void the warranty.
- Do not lift the module by holding the module's junction box or electrical leads. Do not place any heavy or sharp objects on the module.
- Do not attempt to disassemble the modules, and do not remove any attached nameplates or components from the modules.



- Do not use mirrors, other magnifiers or artificially concentrated sunlight onto the modules.
- Do not apply paint or adhesive to the module top surface or backsheet.
- To avoid damage to the backsheet and cells, do not scratch, dent or hit the backsheet.
- Do not drill holes in the frame. This may compromise the frame strength, cause corrosion of the frame and void the warranty.
- Do not scratch the anodized coating of the frame (except for grounding connections at the grounding connection point on the back side of the module). It may cause corrosion of the frame or compromise

the frame strength.

- A module with broken glass or torn backsheet cannot be repaired and must not be used since contact with any module surface or the frame can cause an electric shock.
- Work only under dry conditions, and use only dry tools. Do not handle modules under wet conditions unless wearing appropriate protective equipment.
- When storing uninstalled modules outdoors for any period of time, always cover the modules and ensure that the glass faces down on a soft flat surface to prevent water from collecting inside the module and causing damage to exposed connectors.

2.3 Installation safety

- Never disconnect electrical connections or unplug connectors while the circuit is under load.
- Contact with electrically active parts of the modules, such as terminals, can result in burns, sparks and lethal shock whether or not the module is connected.
- Do not touch the PV module unnecessarily during installation. The glass surface and the frame may be hot; there is a risk of burns and electric shock.
- Do not work in the rain, snow or in windy conditions.
- Avoid exposing cables and connectors to direct sunlight and scratches or cuts in order to prevent insulation degradation.
- 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 prevent 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.
- Follow the safety regulations (e.g., safety rules for working on electrical power plant stations) of your regions and for all other system components, including wires and cables, connectors, charging regulators, inverters, storage batteries, rechargeable batteries, etc.
- Under normal conditions, a photovoltaic module is likely to experience conditions that produce more

current and/or voltage than reported at standard test conditions. Accordingly, the values of I_{sc} and V_{oc} marked on this module should be multiplied by a factor of 1.25 when determining component voltage ratings, conductor current ratings, minimum factor of fuse sizes, and size of controls connected to the PV output.

- Only use same connectors to connect modules to form a string, or connect to another device. Removing the connectors will void the warranty.

2.4 Fire Safety

- Consult your local authority for guidelines and requirements for building or structural fire safety.
- According to IEC 61730-2 standard, DMEGC modules have been rated Fire Class A, and are suitable for mounting on to a Class A roof.
- For roof installations, modules should be mounted over a fire resistant covering suitable for this application, with adequate ventilation between the module backsheet and the mounting surface.
- Roof construction and installation may affect the fire safety of the building, Improper installation may create hazards in the event of a fire.
- Use appropriate components such as fuses, circuit breakers and grounding connectors as requires by local authority.
- Do not use modules near equipment or in locations where flammable gases may be generated or collected.

3. Product identification

Each module has two labels providing the following information:

1. Nameplate: describes the product type; rated power, rated current, rated voltage, open circuit voltage, short circuit current, all as measured under standard test conditions; weight, dimensions, the maximum system voltage etc;

2. Barcode: each single module has a unique serial number. The serial number contains the model number, manufacturing time, and corresponding serial number of the module (except for customer designation), Each module has only one barcode. It is permanently attached to the interior of the module (except the whole black modules), is visible from the top front of the module. This bar code is inserted prior to laminating.

4. Mechanical Installation

4.1 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.
- The module should not be shaded at any time of the day.
- The recommended ambient temperature should be within -20°C to 40°C , the temperature limits are defined as the monthly average high and low of the installation site, the limit operating temperature should be -40°C to 85°C .
- DMEGC Solar Modules have passed the IEC61701 salt-mist, but galvanic corrosion can occur between the aluminum frame of the Modules and mounting or grounding hardware if such hardware is comprised of dissimilar metals. When DMEGC recommends that the module be installed at the seaside, the module should be installed more than 500m away from the coastline. Confirm with DMEGC, install after obtaining approval.
- Modules must be installed or operated in areas where salt, hail, snow, sand, dust, air pollution, chemically active, acid rain, soot, etc., are excessive. Modules must be sited in locations where aggressive substances such as salt or salt-water, or any other type of corrosive agent, could affect the safety and/or performance of the modules.
- Do not use module near equipment or in locations where flammable gases can be generated or collected.

4.2 Tilt Angle Selection

The tilt angle of the PV module is measured between the surface of the PV module and a horizontal ground surface. The PV module generates maximum output power when it faces the sun directly.

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.

Dust building up on the surface of the modules can impair

Module performance. DMEGC solar recommends installing the modules with a tilt angle of at least 10 degrees, making it easier for dust to be washed off by rain.

4.3 conventional requirements

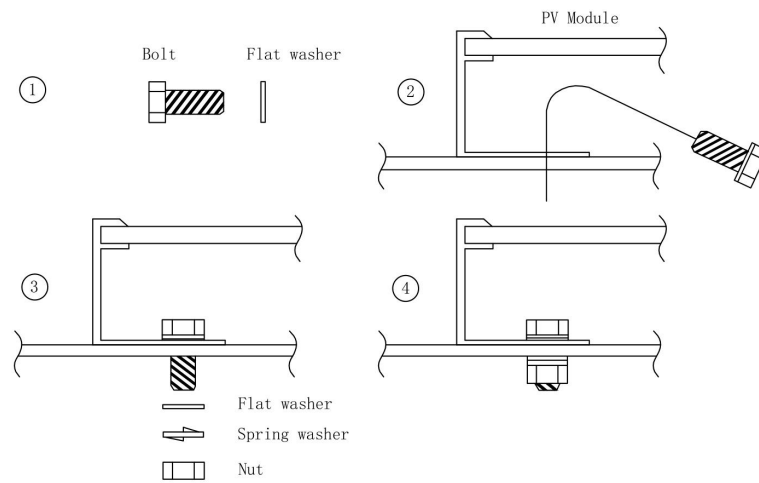
- The module mounting structure must be made of durable, corrosion-resistant and UV-resistant material. Always use a tested and certified mounting structure approved for your system design.
- Ensure the installation method and supporting system of modules is strong enough to withstand all the load conditions. Always observe the instructions and safety precautions included with the module support frames.
- In regions with heavy snowfall in winter, select the height of the mounting system so that the lowest edge of the module is not covered by snow for any length of time. In addition, ensure that the lowest portion of the module is placed high enough so that it is not shaded by plants, trees or damaged by ground soil moved by or through the air.
- For ground mounting systems, the minimum distance DMEGC recommend from the ground to the bottom of the module is at least 24 inches (60cm).
- Modules must be securely attached to the mounting structure. For Clamping System installation methods, the recommended maximum compression for each clamp is 2900 PSI (20 Mpa) in order to avoid potential damages to module frames. Follow the instruction of the clamping system supplier. Provide adequate ventilation under the modules in conformity to your local regulations.
- Provide adequate ventilation under the modules in conformity to your local regulations. A minimum distance of 10 cm between the roof plane and the frame of the module is generally recommended.
- Avoid the frame receiving the lateral tension and pressure, causing the frame off or crushing the glass.
- Before installing modules on a roof, always ensure the roof construction is suitable. In addition, any roof penetration required to mount the module must be properly sealed to prevent leaks.
- Observe and take into account the linear thermal expansion of the module frames (the recommended minimum distance between two modules is 1 cm).
- When installing a module on a pole, select a pole and module mounting structure that will withstand the anticipated wind load and snow load for the area.
- Ensure modules are not subjected to wind or snow loads exceeding the maximum permissible loads, and are not subject to excessive forces due to the thermal expansion of the support structures. Never allow modules overlap or exceeds the rooftop: Refer to the following installation methods for more detailed information.

4.4 Installation methods

4.4.1 Mounting with Bolts

Modules can be attached through the mounting holes on the back frame of the module, by fixing the module to the support rails with bolts. The frame of each module has 4 mounting holes, ideally placed to optimize the load handling capability, to secure the modules to supporting structure.

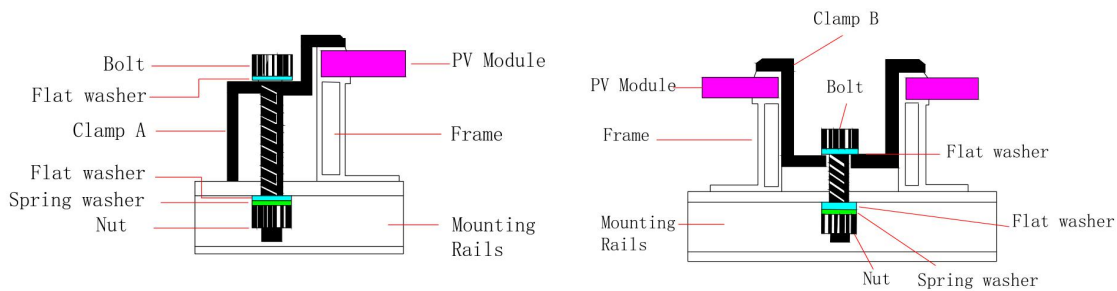
To maximize mounting longevity, DMEGC strongly recommends the use of corrosion proof (stainless steel) attachment hardware. The tightening torque (suggest stainless steel M8 bolts) should be around 15-20 N·m, the mounting details are shown in the following figures:



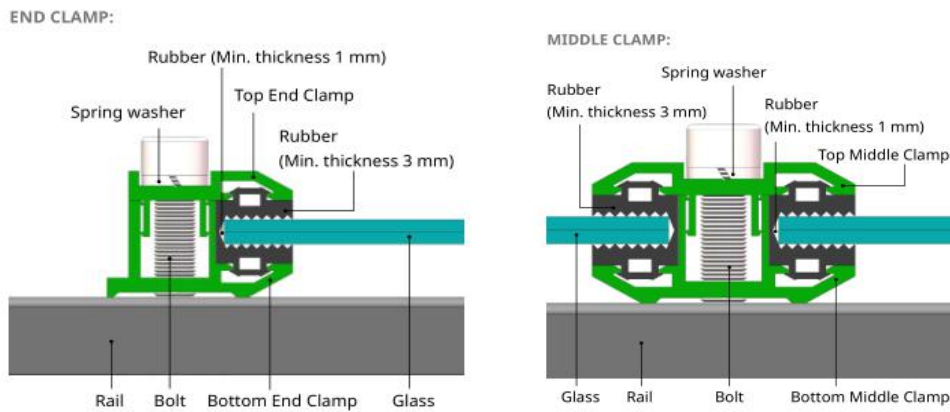
4.4.2 Mounting with Clamps

When choosing this type of clamp-mounting method, use at least four clamps on each module, two clamps should be attached on each long sides of the module (for portrait orientation) or each short sides of the module (for landscape orientation). Depending on local wind and snow loads, additional clamps may be required to ensure that modules can bear the load.

Modules clamps should not come into contact with the front glass and must not deform the frame. Be sure to avoid shadowing effects from the module clamps. The mounting details are shown in the following figures.



Framed module clamp



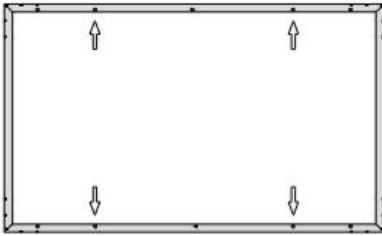
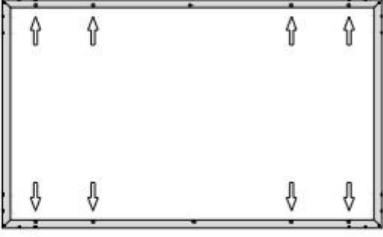


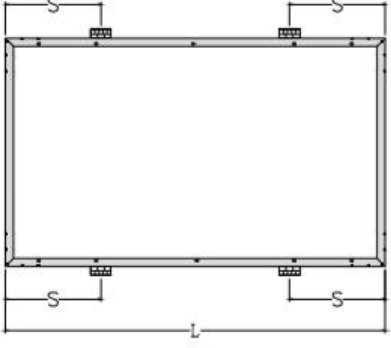
Frameless module clamp


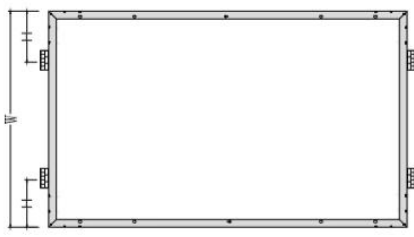

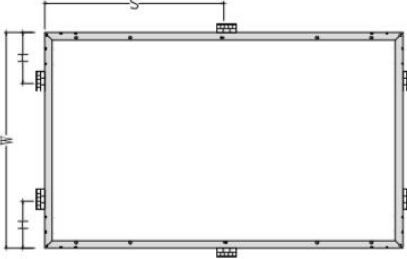
4.5 Attachment guidelines

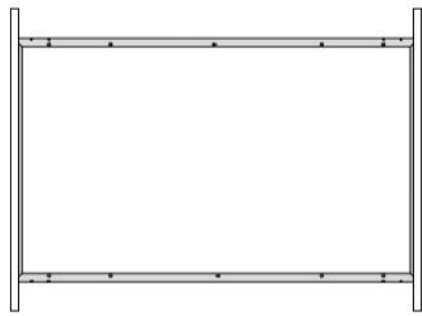

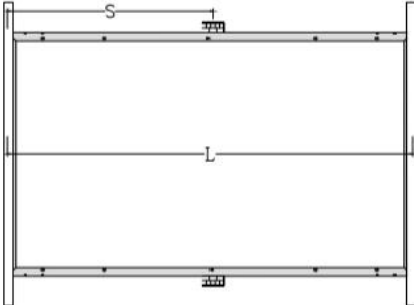
The Standard/lower loading capacity applies to normal environment : the modules are tested under a maximum positive pressure of 2400 Pa, and negative pressure of 2400 Pa, the modules are designed to meet a maximum positive pressure of 1600Pa, and negative pressure of 1600 Pa, this design load was then tested with a safety factor of 1.5 times.

The high loading capacity applies to severe environment ,like storm, big snow, etc: the modules are tested under a maximum positive pressure of 5400 Pa, and negative pressure of 2400 Pa, the modules are designed to meet a maximum positive pressure of 3600Pa, and negative pressure of 1600 Pa, this design load was then tested with a safety factor of 1.5 times.


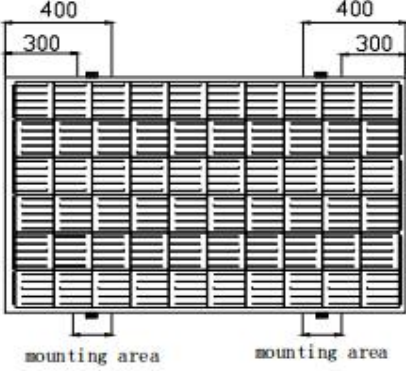

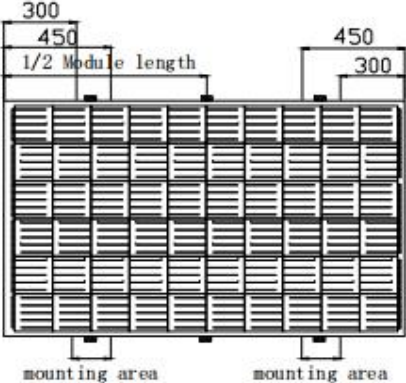

4.5.1 Framed module bolt and clamp installation

Installation manual	Test Load: positive2400Pa/negative2400Pa Design Load: positive1600Pa/negative1600Pa		Test Load: positive5400Pa/negative2400Pa Design Load: positive3600Pa/negative1600Pa
Mounting with Bolts	 <p style="text-align: center;">use 4 mounting holes</p>	Mounting with Bolts	 <p style="text-align: center;">use 8 mounting holes</p>
	 Allowed assembly with clamp (1/4L-50)<S<(1/4L+50)		 Allowed assembly with clamp (1/4L-50)<S<(1/4L+50)
Assemble on the long side with clamp		Assemble on the long side with clamp	

Installation manual	Test Load: positive1600Pa/negative1600Pa Design Load: positive1067Pa/negative1067Pa		Test Load: positive5400Pa/negative2400Pa Design Load: positive3600Pa/negative1600Pa
Assemble on the long side with clamp	 Allowed assembly with clamp 0<H<1/4W 	Assemble on the long side with clamp	 Allowed assembly with clamp 0<H<1/4W 

Installation manual	Test Load: positive1600Pa/negative1600Pa Design Load: positive1067Pa/negative1067Pa	Test Load: positive5400Pa/negative2400Pa Design Load: positive3600Pa/negative1600Pa
Module installation by inserting		<p>  Allowed assembly with clamp $(1/2L-50) < S < (1/2L+50)$ $0 < H < 1/4W$ </p> 

4.5.2 Frameless clamp installation

Installation manual	Test Load: positive2400Pa/negative1600Pa Design Load: positive1600Pa/negative1067Pa	Test Load: positive3600Pa/negative2400Pa Design Load: positive2400Pa/negative1600Pa
Frameless double glass long edge clamp installation	<p>  Allowed assembly with clamp </p> 	<p>  Allowed assembly with clamp </p> 
Installation manual	Test Load: positive2400Pa/negative2400Pa Design Load: positive1600Pa/negative1600Pa	
Bifacial double glass long edge clamp installation		

5. Electrical Installation

- Any hardware used must be compatible with any other used material to avoid galvanic corrosion. Defects caused by corrosions void the warranty.
- It is not recommended to use modules with different configurations (grounding, wiring) in the same system.
- Excessive cables must be organized or fixed in an adequate way, e.g. attached to the mounting structure by using non-metallic cable ties. Solar cables, connectors and junction boxes should not be exposed to water exposure, and snow, and rain or water submersion for a long period of time(IP65/67/68).
- For applications requiring high operating voltage several modules can be connected in series to form a string of modules; the system voltage is then equal to the sum of the voltage of each module.
- For applications requiring high operating currents several strings of modules can be connected in parallel; the system current is then equal to the sum of the current of each string of modules.
- The maximum system voltage is 600 volts ,1000 volts or 1500 volts depending on the product family DC according to standards.
- The maximum number of series connected modules depends on system design, the type of inverter used and environmental conditions.
- Based on the maximum series fuse rating of module and local electrical installation code, always make sure DMEGC PV modules are assembled with the appropriate string fuse for circuit protection. There is no specific limitation on the number of modules that can be connected in parallel, the number of modules is determined by system design parameters such as current or power output.
- To prevent the cables and the connectors from overheating, the cross section of the cables and the capacity of the connectors must be selected to suit the maximum system short circuit current. The recommended cable is PV wire with a cross section of at least 4mm².
- Caution: do not secure the cables too tight. Any cable damage caused by cable management system is not covered under DMEGC's warranty.
- Always refer to the cable manufacturer's bending radius which includes the radius just behind the connectors.
- When designing large modules arrays connected to a single inverter, always take into account the resulting isolation resistance (Riso), which decrease increasing the number of modules in the array. A too low Riso can results in inverter faults. Please refer to local regulations to determine the system wires size, type and temperature.

- DMEGC modules are supplied with connectors used for system electrical connections. We strongly recommend using the genuine connector type specified by DMEGC's product data sheet. Any choice of a different connector type other than specified may void the warranty of the module.
- To ensure reliable electric connection and to prevent possible intrusion of humidity, two connectors must be mated and locked together until a click can be heard.
- Long-term exposure to wet environments may cause connectors' poor connectivity, resulting in current leakage and poor conductivity which voids the warranty. DMEGC recommends proper connector/cable/wire management to prevent moisture intrusion. Depending on the amount of humidity, DMEGC recommends periodic inspections of the installation system to maintain optimal module performance.
- The DC current generated by photovoltaic systems can be converted into AC and fed into a public Grid. As local utilities' policies on connecting renewable energy systems to the Grids vary from region to region. Always seek the advice from a qualified system designer or integrator. Building permits, inspections and approvals by the local utility are generally required.
- Especially for larger installations DMEGC recommends lightning protection following the local requirements and regulations.

6. Grounding

For grounding and bonding requirements, please refer to regional and national safety and electricity standards. If grounding is required, use a recommended connector type for the grounding wire.

DMEGC PV Modules use an anodic oxidized aluminum frame to resist corrosion, so the frame of Modules should be connected to the equipment grounding conductor to prevent thunder and electrical shock.

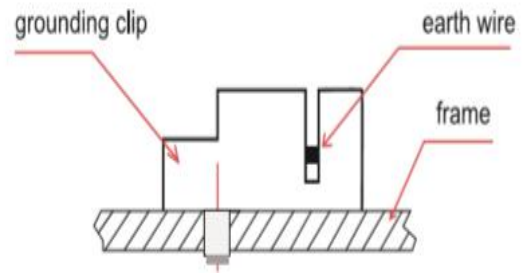
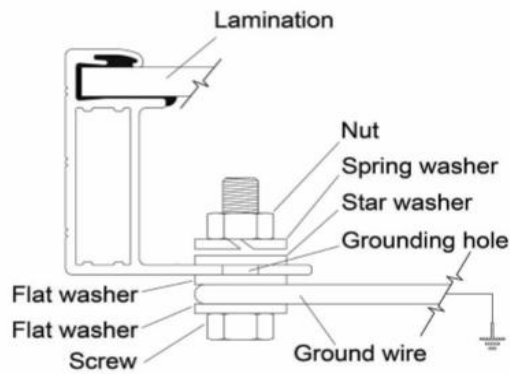
The frame rails have pre-drilled holes marked with a grounding sign, these holes should be used for grounding purposes and should not be used for mounting the Modules.

We recommend always refer to local state and national code requirements for PV module grounding. DMEGC highly recommends negative grounding if it's allowed by local authorities.

When attaching the frame grounding hardware and wire to the frame it must be placed corresponding to the ground symbol stamped location to ensure proper electrical connection.

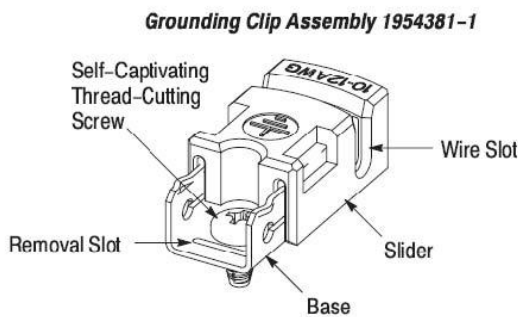
DMEGC recommends one of the following parts for grounding:

1) Use M8 bolt and washer to bond the ground wire and aluminum frame through the grounding hole (as shown below left). The tightening torque is 3-7Nm. All nuts and washers should be made of stainless steel. 4-14 mm² (AWG 6-12) exposed copper wire is recommended as ground wire.



2) Grounding by using grounding clamp

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.



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.

3) Addition Third-party Grounding Devices

DMEGC PV Modules can be grounded using third party grounding devices so long as they are certified for grounding modules and the devices are installed according to the manufacturer’s specified instructions.

7. Maintenance and care

It is required to perform regular inspection and maintenance of the modules, especially during the warranty period. To ensure optimum module performance, DMEGC recommends the following maintenance measures:

7.1 Visual Inspection

Inspect the modules visually to find if there are any visual defects, If there are, the following items should be evaluated:

- If modules are observed having slight cell color differences at different angles, this is a normal phenomenon of modules with anti-reflection coating technology.
- Whether the glass is broken.
- No sharp objects are in contact with the PV module surfaces.
- PV modules are not shaded by unwanted obstacles and; or foreign material.
- Corrosion along the cells' bus-bar. The corrosion is caused by moisture intrusion through the module back sheet. Check the back sheet for damage.
- Check whether the back sheet is burn out. g) Check if screws and mounting brackets are tight, adjust and tighten as necessary.

7.2 Cleaning

- 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.
- In order to reduce the potential for electrical and thermal shock, DMEGC recommends cleaning PV modules during early morning or late afternoon hours when solar radiation is low and the modules are cooler, especially in regions with hotter temperatures.
- Never attempt to clean a PV module with broken glass or other signs of exposed wiring, as this presents a shock hazard.
- Never use chemicals when cleaning modules as this may affect the module warranty and energy output.

7.3 Inspection of Connector and Cable

It's recommended to implement the following preventive maintenance every 6 months:

- Check the sealing gels of the junction box for any damage.
- Examine the PV module(s) for signs of deterioration. Check all wiring for possible rodent damage, weathering and that all connections are tight and corrosion free. Check electrical leakage to ground.

If any problem arises, consult a professional solar service provider for suggestions. Caution: observe

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

8. 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.

No responsibility is assumed by DMEGC for any infringement of patents or other rights of third parties, which may result from use of the PV product. No license is granted by implication or otherwise under any patent or patent rights.

The information in this manual is based on DMEGC's knowledge and experience and is believed to be reliable; but such information including product specification (without limitations) and suggestions do not constitute a warranty, expresses or implied. DMEGC reserves the right to change the manual, the PV produce, the specifications, or product information sheets without prior notice.

Appendix:

Group 1 (60 156.75 cells module with aluminium frame xxx=255~310,in increment of 5)			
DMG _{xxx} M6-60BT	DMG _{xxx} M6-60BW	DMG _{xxx} M6-60ST	DMG _{xxx} M6-60SW
DMG _{xxx} M6-60BB	DM _{xxx} M2-G60BT	DM _{xxx} M2-G60BW	DM _{xxx} M2-G60ST
DM _{xxx} M2-G60SW	DM _{xxx} M2-G60BB		
Group 2 (60 156.75 cells modules with frameless xxx=255~310,in increment of 5)			
DMG _{xxx} M6-60XT	DMG _{xxx} M6-60XW	DM _{xxx} M2-G60NT	DM _{xxx} M2-G60NW
Group 3 (60 156.75 Bifacial cells modules with aluminium frame xxx=295~315,in increment of 5)			
DMG _{xxx} B6-60ST	DMG _{xxx} B6-60BT	DM _{xxx} M2-B60ST	DM _{xxx} M2-B60BT
DMG _{xxx} B6-60SW	DMG _{xxx} B6-60BW	DM _{xxx} M2-60SW	DM _{xxx} M2-60BW
Group 4 (60 156.75 Bifacial cells modules with frameless xxx=295~315,in increment of 5)			
DMG _{xxx} B6-60NT	DMG _{xxx} B6-60NT	DM _{xxx} M2-B60NT	DM _{xxx} M2-B60NT
Group 5 (72 156.75 cells modules with aluminium frame xxx=355~370,in increment of 5)			
DMG _{xxx} M6-72BT	DMG _{xxx} M6-72BW	DMG _{xxx} M6-72ST	DMG _{xxx} M6-72SW
DMG _{xxx} M6-72BB	DM _{xxx} M2-G72BT	DM _{xxx} M2-G72BW	DM _{xxx} M2-G72ST
DM _{xxx} M2-G72SW	DM _{xxx} M2-G72BB		
Group 6 (72 156.75 Bifacial cells modules with aluminium frame xxx=355~375,in increment of 5)			
DMG _{xxx} B6-72ST	DMG _{xxx} B6-72BT	DMG _{xxx} B6-72SW	DMG _{xxx} B6-72BW
DM _{xxx} M2-B72ST	DM _{xxx} M2-B72BT	DM _{xxx} M2-B72SW	DM _{xxx} M2-B72BW
Group 7 (120 156.75 cells modules with aluminium frame xxx=310~325,in increment of 5)			
DMG _{xxx} M6-120HST	DMG _{xxx} M6-120HBT	DMG _{xxx} M6-120HSW	DMG _{xxx} M6-120HBW
DM _{xxx} M2-G60HST	DM _{xxx} M2-G60HBT	DM _{xxx} M2-G60HSW	DM _{xxx} M2-G60HBW
Group 8 (120 156.75 Bifacial cells modules with aluminium frame xxx=310~330,in increment of 5)			
DMG _{xxx} B6-120HST	DMG _{xxx} B6-120HBT	DMG _{xxx} B6-120HSW	DMG _{xxx} B6-120HBW
DM _{xxx} M2-B60HST	DM _{xxx} M2-B60HBT	DM _{xxx} M2-B60HSW	DMG _{xxx} M2-B60HBW

Group 9 (144 156.75 cells modules with aluminium frame xxx=360~380,in increment of 5)			
DMGxxxM6-144HST	DMGxxxM6-144HBT	DMGxxxM6-144HSW	DMGxxxM6-144HBW
DMxxxM2-G72HST	DMxxxM2-G72HBT	DMxxxM2-G72HSW	DMxxxM2-G72HBW
Group 10 (144 156.75 Bifacial cells modules with aluminium frame xxx=360~385,in increment of 5)			
DMGxxxB6-144HST	DMGxxxB6-144HBT	DMGxxxB6-144HSW	DMGxxxB6-144HBW
DMxxxM2-B72HST	DMxxxM2-B72HBT	DMxxxM2-B72HSW	DMxxxM2-B72HBW
Group 11 (120 166 cells modules with aluminium frame xxx=355~375,in increment of 5)			
DMxxxM6-G60HST	DMGxxxM6-G60HBT	DMxxxM6-G60HSW	DMxxxM6-G60HBW
Group 12 (120 166 Bifacial cells modules with aluminium frame xxx=355~375,in increment of 5)			
DMxxxM6-B60HST	DMxxxM6-B60HBT	DMxxxM6-B60HSW	DMxxxM6-B60HBW
Group 13 (144 166 cells modules with aluminium frame xxx=425~445,in increment of 5)			
DMxxxM6-G72HST	DMxxxM6-G72HBT	DMxxxM6-G72HSW	DMxxxM6-G72HBW
Group 14 (144 166 Bifacial cells modules with aluminium frame xxx=425~445,in increment of 5)			
DMxxxM6-B72HST	DMxxxM6-B72HBT	DMxxxM6-B72HSW	DMxxxM6-B72HBW