



# Installation Guide MB Solar Modules

## Applications

The modules are suitable for the following applications:

- Ambient operating temperature:  $-40^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$
- Maximum compression load 5400 Pa, maximum tensile load 2400 Pa (includes a safety factor of 1.5)
- Installation on a substructure for solar panels
- All modules will be tested and approved according to IEC 61215-2016 and IEC 61730-2016 (Certification pending)
- Installation must comply strictly with all country-specific electrical and structural safety standards.

## Handling

- Wear gloves when handling the module frame
- When unstacking the modules, protect the front side against scratching, etc.
- Never short-circuit the cables of the solar modules, i.e., do not connect them together
- Cables and sockets must not be used for handling or transport
- Do not walk on the modules and avoid other kinds of point load because these could result in irreparable damage

## Installation location

The installation location should be chosen bearing the following aspects in mind:

- The modules must not be installed:
  - In an enclosed area
  - At an altitude of more than 2000 m above sea level\*
  - On a water surface\*
  - In places where water can accumulate (e.g., due to flooding)
  - In the vicinity of highly flammable gases or vapors (e.g., near gas tanks or filling stations)
  - Directly adjacent to air conditioning or ventilation systems
- The modules must not be used as a substitute for roofing or facades

- If the modules are installed less than 500 m from the sea, special precautions are necessary with regard to grounding, maintenance and cleaning
- Avoid contact between chemical substances (e.g., oil or solvents) and parts of the modules.

## Orientation

- The modules can be mounted in either portrait or landscape orientation
- Make sure no water can accumulate. Rain or melt water must be able to drain off freely.
- The drainage holes in the module frame must not be closed or obscured
- Minimum tilt:  $5^{\circ}$
- The maximum tilt should be determined based on local regulations
- Self-cleaning is improved if the modules are tilted by more than  $20^{\circ}$ .

## Shading

Optimum sunlight results in maximum energy yield:

- Install the modules so that they are facing the sun
- Avoid total or partial shading (e.g., due to trees, chimneys, buildings, dirt, snow, overhead power lines)
- Shading of the glass-glass modules on the rear side should be avoided.

## Substructure

The substructure must meet the following requirements:

- The substructure must provide the required structural strength and be designed to withstand local snow and wind loads
- Uneven snow coverings (e.g., snow banks or drifts) could result in significantly higher, localized loads and must be removed or avoided with the help of technical measures

\* Please ask the manufacturer for advice if you wish to install the modules at an altitude of more than 2000 m above sea level or on a water surface.



- The substructure must not cause any other forces to act on the modules in addition to wind and snow loads
- The substructure must be correctly attached to the roof or the floor
- All forces acting on the modules must be transmitted to the substructure
- There must be no objects on the back side which will cause concentrations of pressure if the modules bend in the middle
- The substructure must ensure adequate cooling of the modules by rear ventilation
- Stress-free attachment of the substructure is essential to enable thermal expansion
- Avoid additional stresses or torques at the mounting positions
- The clamps must match the rails
- Make sure that clamps, slide-in profiles, etc., likewise do not touch the glass, including under load
- You should also make sure that the substructure does not touch the socket, including under load
- With glass-glass modules, the substructure must not cause any additional shading behind the modules (i.e., there should be no rails underneath them)
- Make sure that the connecting cables to the socket do not run between the laminate and the mounting rails
- Avoid contact between different metallic materials (contact corrosion; refer to the electrochemical series)
- Use corrosion-resistant screws and M8 washers (diameter  $\geq 15.8$  mm) for mounting. The fastening screws and washers should have the same material properties.

### Clamp system

Use clamps which meet the following requirements:

- Minimum clamp width: 40 mm
- Clamp height for 35 mm module height
- Clamp depth: 7-11 mm
- The clamps must not touch the front glass
- No cells must be shaded as a result of the clamps
- The clamps must not damage the module frame
- The clamps must provide the required structural strength at the installation location
- Use clamps which guarantee long-term stability and secure attachment of the modules to the substructure
- The clamps must be installed in accordance with the manufacturer's instructions, including any specific hardware and torque requirements. Do not exceed a maximum torque of 20 Nm.

### Maintenance and cleaning

- Regular cleaning (once or twice a year) will improve the energy efficiency of the modules
- Use cleaners containing alcohol (ethanol, isopropyl alcohol) for manual cleaning or hand washing. Cleaners that are highly acidic or strongly alkaline must not be used. The modules can also be cleaned using a soap and water solution.
- Do not use abrasive cleaning agents such as abrasive powder, steel wool, cleaning pads or scrapers
- Do not use high-pressure cleaners for cleaning
- Remove heavy soiling using plenty of water before wiping the glass surface. Leave stubborn dirt to soak where necessary
- Never touch the glass with your bare hands because you could leave fingerprints.

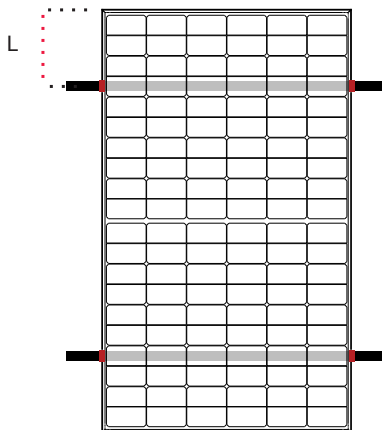


Module type	Mounting method	Clamp range [mm]	Test load (includes a safety factor of 1.5), compression/tensile [Pa]
GB	CP1/CL1	L = 200-450	5,400/2,400
	MP1/MP2	L = 320	
	IP1	-	
GG	CP1	L = 0-200 & 450-550	2,400/2,400
	CP2/CL2	B = 0-300	
	IP2	-	
GG	CL	L = 200-450	5,400/2,400
	1	-	
	IP1	-	
GG	CP2/CL2	B = 0-300	2,400/2,400
	IP2	-	

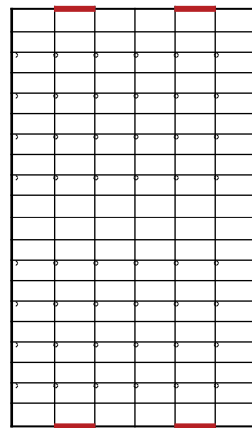
Please ask Meyer Burger for advice on non-specified mounting methods or higher loads; in this case, suitable alternative attachment options can be developed.  
Legend: CP: Klemmpunkt (Clamp point), CL: Clamp line, MP: Mounting point, IP: Installation profile

## Installation with clamps

### Point mounting



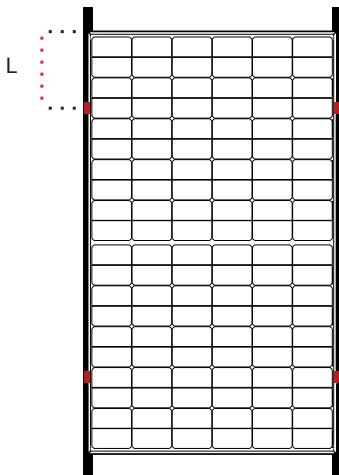
CP1



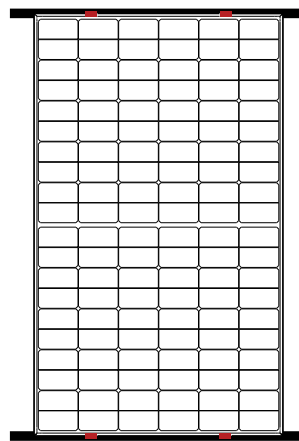
CP2

B

### Line mounting



CL1



CL2

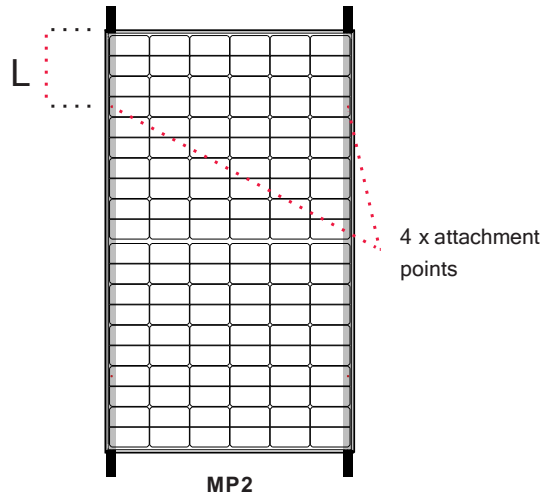
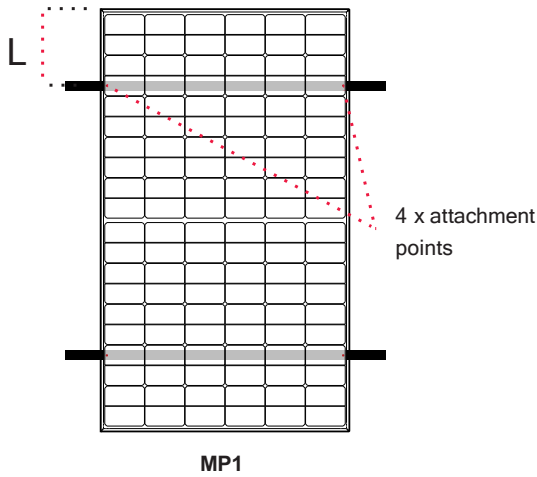
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**Installation at the attachment points**

**Point mounting**

**Line mounting**



**Installation with slide-in rails**

**Line mounting**

