

Operation Manual

Solar Panel

61993, 62391, 62392, 62393, 62394

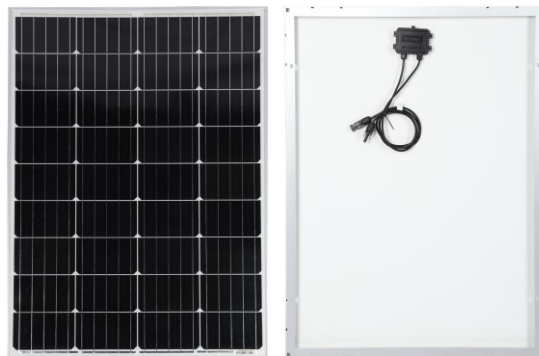


Illustration similar, may vary depending on model

Read and follow the operating instructions and safety information before using for the first time.

Technical changes reserved!

Due to further developments, illustrations, functioning steps, and technical data can differ insignificantly.

Updating the documentation

If you have suggestions for improvement or have found any irregularities, please contact us.



The information contained in this document may alter at any time without previous notice. It is prohibited to copy or spread any parts of this document in any way without prior written allowance. All rights reserved.

The WilTec Wildanger Technik GmbH cannot be held accountable for any possible mistakes in this operating manual, nor in the diagrams and figures shown.

Even though, the WilTec Wildanger Technik GmbH has undergone biggest possible efforts to ensure that the operating manual is complete, faultless, and up to date, mistakes cannot be entirely avoided.

If you should find a mistake or wish to make a suggestion for improvement, we look forward to hearing from you.

Send an e-mail to:

service@wiltec.info

or use our contact form:

<https://www.wiltec.de/contacts/>

The most recent version of this manual in various languages can be found in our online shop via:

<https://www.wiltec.de/docsearch>

Our postal address is:

WilTec Wildanger Technik GmbH
Königsbenden 12
52249 Eschweiler
Germany

To return orders for exchange, repair, or other purposes, please use the following address. Attention! To allow for a smooth execution of your complaint or return, it is important to contact our customer service team before returning the goods.

Returns Department
WilTec Wildanger Technik GmbH
Königsbenden 28
52249 Eschweiler

E-mail: **service@wiltec.info**

Tel: +49 2403 55592-0

Fax: +49 2403 55592-15



Introduction

Thank you for purchasing this quality product. **To minimise the risk of injury we urge that our clients take some basic safety precautions when using this device. Please read the operation instructions carefully and make sure you have understood its content.**

Keep these operation instructions safe.


This operation manual includes important information regarding the safe mounting and maintenance of the solar module and needs to be read thoroughly before mounting the solar module to minimise the risk of damage and injury.

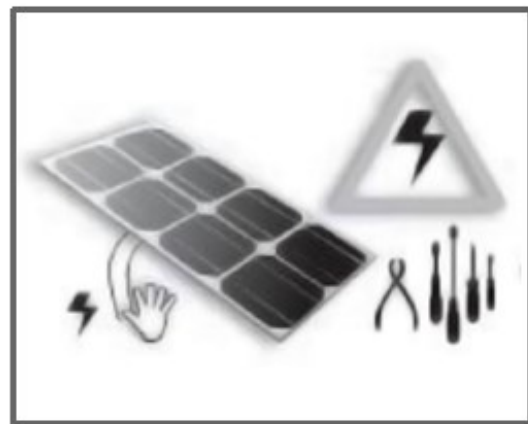
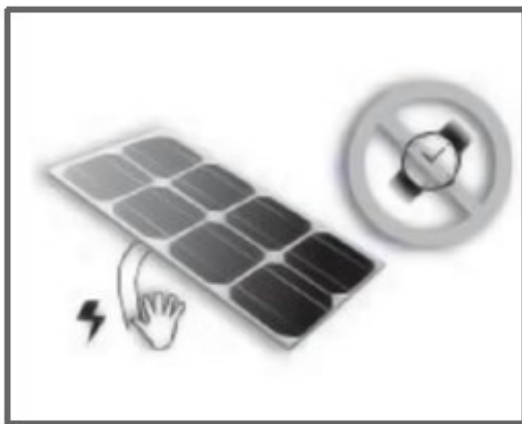
Safety precautions

General notes

- The installation of the solar module requires specific technical knowledge and should be carried out by especially trained specialists. In case you wish to mount it yourself, a qualified specialist needs to officially approve the mounting as a minimum requirement.
- The installer must be aware of the dangers and risks of the assembly, such as electrical shock, and do anything necessary during the installation to minimise any potential risks.
- This solar panel does not require any special connections, as all the modules are provided with junction boxes, cables, and plugs.
- Do not use mirrors or magnifying glasses to concentrate the light that falls onto the solar panel.
- This solar panel generates a direct current with sunlight and is designed to be used outside, where it is suitable for installation on e.g., roofs or the ground.
- Do not paint the solar module and do not attach anything to its back side.
- Do not take the solar panel apart and do not make any unauthorised alterations.
- The solar panel has a fire-resistance class C, but is suitable to be mounted onto roofs with fire-resistance class A.

Safety of use

-  Never touch the solar module without isolated protective gloves, and do not wear any metal jewellery and accessories such as rings, necklaces and watches whilst handling the panel. Direct currents with a voltage of 36 V and higher are life-threatening!
- Improper handling of the panel during transport or installation can cause damage, thus leading to the solar panel being inoperative.
- Never lift or move the solar panel by pulling its cables or plugs.
- Do not apply pressure to the surface of the panel and do not place any objects on top of it.
- Do not drop the solar panel and make sure that no objects drop onto it.
- Do not expose the back side of the solar panel to any direct solar radiation.
- Do not install, adjust, or carry out maintenance work on the panel during strong wind or high humidity.



Safety of installation

- Comply with all local and national regulations and laws and ensure that all necessary arrangements have been made and all required permits have been organised before starting to install the solar panel.
- Make sure that you regard all safety notes of other used components during the installation, too.
- Do not install the unit in areas, in which flammable gasses are produced or collected.
- Do not drill any holes into the solar panel or its frame.
- Touching the connecting plug can cause sparks, fire, and/or electric shock, even if the solar panel is not connected to any electrical supply, as it generates energy as soon as it is exposed to sunlight.
- By all means, keep children away from the unit and its connecting cables.
- When installing the unit, cover the solar panel carefully with a non-conductive and opaque board or something similar to avoid any electricity from being generated.
- When installing the unit, only use superior quality insulated tools.
- The unit needs to be earthed according to the local regulations. Accordingly install the earthing cable to the unit frame.
- Contact your local authorities regarding the valid fire safety regulations.
- The installation of the unit to a roof can affect the fire safety of the roof, and a badly installed or damaged unit can increase the risk of fire.

Mounting

The direct current generated by the solar panel can be converted into an alternating current and can be fed into the power grid. Before installing the solar panel, thoroughly catch up on the local/national regulations in force and register the unit timely, thus before installing it, with your local/national responsible agency/authority and your specific electricity provider, if required.

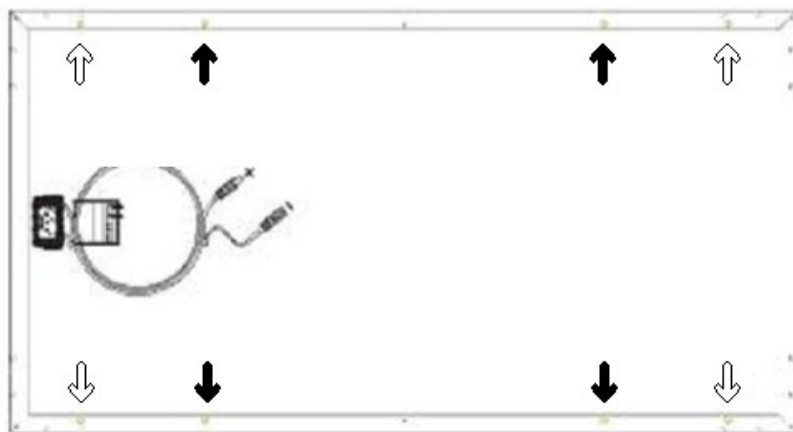
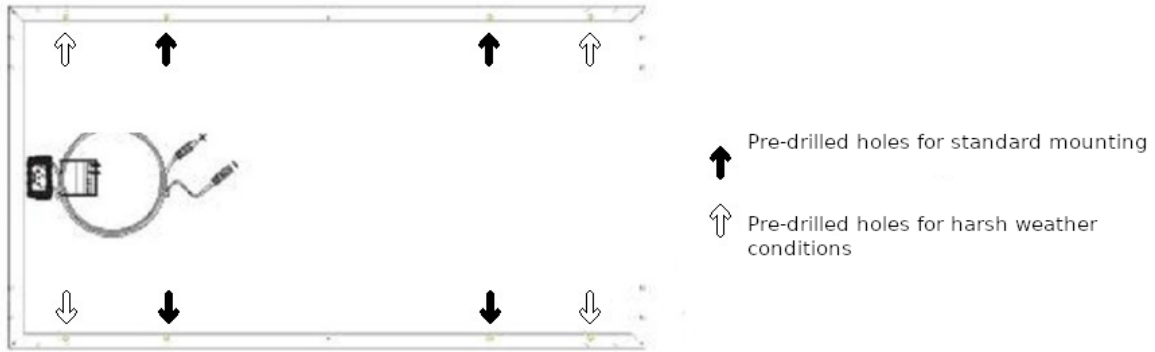
- First, choose a suitable place to install the solar module, where at no time it will be covered by another object. Placing the unit facing southwards (in the southern hemisphere northwards) will guarantee a maximal generation of electricity.
- The ideal inclination angle should be calculated by a qualified specialist company.
- Take note of the respective safety regulations and installation instructions regarding the chosen attachment, reducing the risk of accidents.
- When installing the unit to a sloped roof, make sure to allow a distance of at least 30.5 cm between the edge of the roof and the outer edge of the solar panel.
- Before mounting inform yourself about the regular weather conditions at your location to ensure that the solar panel can be attached adequately according to the conditions.
- Ensure that a sufficient earthing of the unit is provided and that the earthing cable is attached securely to the frame of the solar panel. Make sure that the core of the wire is not damaged, when earthing the approx. 16 mm long cable insulating cap.
- If possible, use the same settings for all used solar panels.
- Multiple solar panels of the same type can be in switched in a row and thus used as a cluster.
 - When having the solar panels attached as a series connection, the total sum of the voltage corresponds to the amount of each panel which is attached as one unit.
 - When having multiple solar panels switched parallel, the voltage corresponds to the sum of the individual solar panel.
- Please note that all built-in parts need to correspond with the maximum short-circuit power of the system, so that they do not overheat due to the voltage.
- The cables can withstand a maximum temperature of 85 °C, whilst the connecting plugs can withstand a temperature of up to 105 °C.



Mounting on a frame

To be able to mount the solar panel to its frame, it needs to be attached to the frame via screws. Use the pre-drilled holes located on the back side of the unit to attach the frame. Usually, the use of the four inner pilot holes should be sufficient. However, if you live in a region with strong winds or with snowfall, the number of screws should be increased by additionally using the four outer pilot holes.

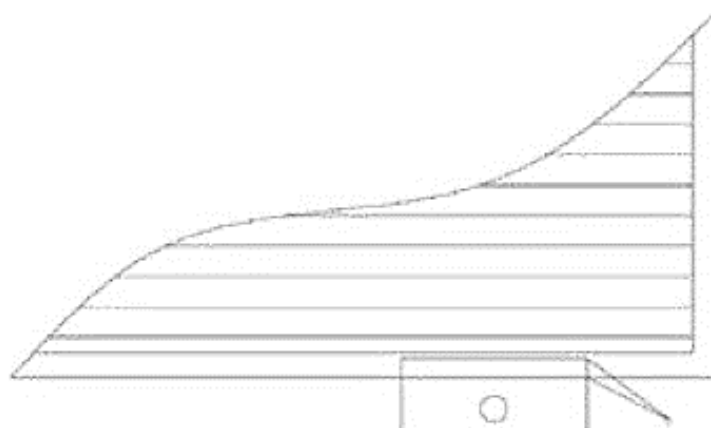
Ensure that the frame used for mounting is made of a stable, weather- and UV-light-resistant material.



↑ = pre-drilled holes for standard mounting; ↑ = pre-drilled holes for harsh weather conditions

Mounting without frame

Alternatively, the solar module can also be mounted frameless. The solar panels are simply attached with laminate clamps at the quarter point of the long panel side. Please note that the clamps must not exceed a size of 12.5 mm, as they are not able to securely attach the unit otherwise. Additionally, it is important to regard the torque specified by the manufacturer, as the solar panel only has a low tolerance regarding punctual loads.



The size must not exceed 12.5 mm.

Ground mounting

When mounting the solar panel to the ground, it is important to select an area, in which no parts of the solar module are covered by trees, buildings or any other objects, as well as choosing an adequate height, which guarantees that the panel will not be covered by snow.



To be able to position the solar panel safely when mounting it to the ground/flat roof, it is best to place the stands on a weighted base, e.g., anchoring it to paving slabs. The static of the building needs to be checked! When the solar module is to be placed on roofs made of corrugated fibre cement, (corrugated) metal sheets or other roof claddings, the panel is to be mounted to the roof directly without mounting panels. The static of the building also needs to be checked in this case.

Roof mounting

When mounting the solar panel to a roof, it is important to always regard the static of the individual building and to ensure that the solar panel cannot loosen itself from the roof with strong winds, snowfall, or stormy weather. When mounting the solar pane, allow a gap between the roof top and the back side of the unit of at least 10 cm for the parts to be able to cool down.

To guarantee a proper installation of the unit, the frame needs to be attached to the roof securely. The anchor points should be sealed, hindering any humidity from getting into the roof and thus inside the house. Installing the solar panel on the roof can influence the flame retardance.

Technical data

Model type	Mono 165 W	Mono 150 W	Mono 130 W	Mono 100 W	Mono 50 W
Item number	62394	62393	62392	61993	62391
Max. power P_{max} (W)	165 ± 3 %	150 ± 3 %	130 ± 3 %	100 ± 3 %	50 ± 3 %
Max. operating voltage V_{mp} (V)	18.92	17.42	18.49	17.6	17.55
Max. operating current I_{mp} (A)	8.72	8.61	7.03	5.68	2.85
Off-load voltage V_{oc} (V)	23.14	21.3	22.69	21.59	21.58
Short circuit current I_{sc} (A)	9.12	9.15	7.48	6.17	3.24
Max. nominal system voltage (V)	1000				
Max. string fuse (A)	13		8		5
Test condition standard	E = 100 $\frac{W}{m^2}$ Tc = 25 °C AM 1.5				
Application class	A				
Protection class	IP 65				
Overall dimensions (mm)	1480×680×35	1290×675×35	900×670	540×670×35	
Cable length (cm)	90				

Maintenance

- To allow an ideal operation and maximal energy production, the glass cover needs to be cleaned from dust and dirt regularly. Only use clear water and no chemical cleaning detergents. Remove persistent pollutants with the help of a soft sponge or with a cloth. Make sure not to apply too much pressure on the glass cover and do not touch the unit without wearing insulated protective gloves.
- Remove snow before the additional weight could damage the solar panel.
- Examine the solar panel including its attachments and cables regularly for signs of rust or damages and if parts are damaged or worn, have them repaired immediately by a qualified specialist.

Disposal regulations

EU guidelines regarding the disposal of scrap electric appliances (WEEE, 2012/19/EU) were implemented in the law related to electrical and electronic equipment and appliances.

All WiTec electric devices that fall under the WEEE regulations are labelled with the crossed-out wheeled waste bin logo. This logo indicates that this electric equipment must not be disposed with the domestic waste.

The company WiTec Technik GmbH has been registered in the German registry EAR under the WEEE-registration number DE45283704.

Disposal of used electrical and electronic appliances (intended for use in the countries of the European Union and other European countries with a separate collection system for these appliances).

The logo on the article or on its packaging points out that this article must not be treated as normal household waste but must be disposed to a recycling collection point for electronic and electrical waste equipment. By contributing to the correct disposal of this article you protect the environment and the health of your fellow men. Environment and health are threatened by inappropriate disposal.



Material recycling helps reduce the consumption of raw materials.

Additional information on recycling this article can be provided by your local community, municipal waste disposal facilities, or the store where you purchased the article.

Address:
WiTec Wildanger Technik GmbH
Königsbenden 12 / 28
D-52249 Eschweiler

Important notice:

The reprint or reproduction, even of excerpts, and any commercial use, even in part, of this instruction manual require the written permission of WiTec Wildanger Technik GmbH.