



# User Manual

Code: SP-20-MS  
SOLAR PANEL **SP-20-MS** RIGID IN AN ALUMINUM FRAME

## Warning!

Please read the user manual included in this work as it contains important information related with safety of installation and use of the device.

Only persons who read the user manual may use the device.

The user manual must be kept because it may be required in the future. The device is to be used exclusively for purposes specified in this user manual.

The device must be unpacked prior to starting-up. After removing the packaging make sure the device is in working order.

If the product has defects, it should not be used until it is repaired.

The product is intended for use at home and commercial use and may not be used for other than intended use.

The manufacturer is not liable for damages resulting from not adhering to the rules contained in the user manual, therefore, we recommend to follow the aforementioned safety rules for operation and maintenance of the device. In this way you will ensure yourself safety and avoid causing damage to the device.

The manufacturer and the supplier are not liable for losses or damages arising out of the product, including financial or intangible losses, loss of profits, income, data, pleasure from use of the product or other products related with it - indirect, incidental or consequential loss or damage. The above provisions apply whether the loss or damage concerns:

1. Deterioration of quality or the lack of operation of the products or products related with it due to damage as well as the lack of access to the product when it is undergoing repair, which results in stoppage the loss of user's time or a break in business activity;
2. Improper results of operation of the product or products related with it;
3. It applies to losses and damages according to any legal category, including negligence and other losses, termination of a contract, expressed or implied guarantee and strict liability (even if the manufacturer or the supplier was notified about the possibility of occurrence of such damages).

### Safety measures:

Particular attention at designing was directed to quality standards of the device where ensuring safety of operation is the most important factor.

The device must be secured against contact with caustic, staining and viscous fluids.

The device was designed in such a way that it restarts operation when power supply is restored after a break.

**Attention! We recommend using protections to further protect the device from possible overvoltages in installations. Surge protectors are effective protection against accidental pass to the device voltages higher than the rated. Damages caused by pass the voltages higher than specified in manual, are not under warranty.**

Turn off the device before transporting it.

Prior to connecting the device to a power source check whether the supplied voltage is consistent with rated voltage specified in the user manual.

### Proper product disposal:

A marking of a crossed out waste bin indicates that the product may not be disposed together with other household waste in the entire EU. To avoid possible damage to the natural environment of health due to uncontrolled waste disposal, therefore, it should be handed over for recycling, propagating in this way sustainable use of natural resources.

To return a worn-out product, use a collection and disposal system of this type of equipment or contact a seller from whom it was purchased. He will then be recycled in an environmentally-friendly way.

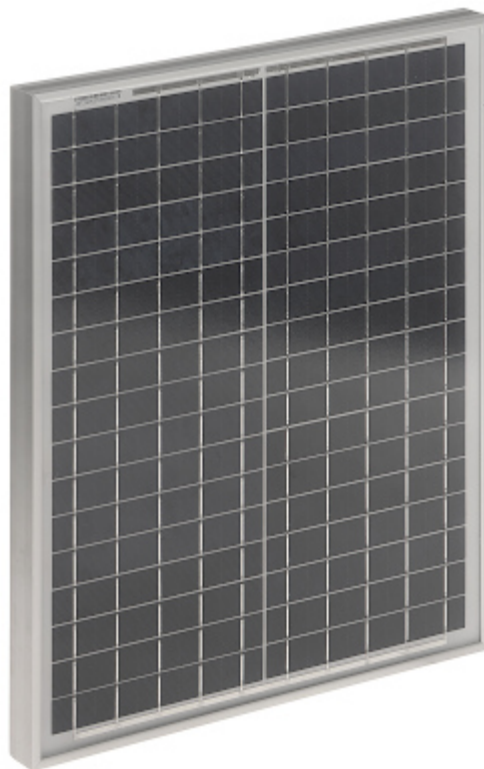
Solar panels are a clean and ecological source of electricity. Depending on their size and structure, they can be used to create installations capable of supplying power to the entire building, as well as small temporary or mobile circuits.

The SP-20-MS panel with a rigid structure is a perfect solution for creating small solar installations.

The rigid structure of the panel makes it the best solution for small solar installations mounted for a long time without the intention of changing the position of the panels. Low-power panels in conjunction with a properly selected battery are perfect as a power source for small devices to which the mains supply may be problematic (such as garden lighting, shed lighting, weather station, etc.).

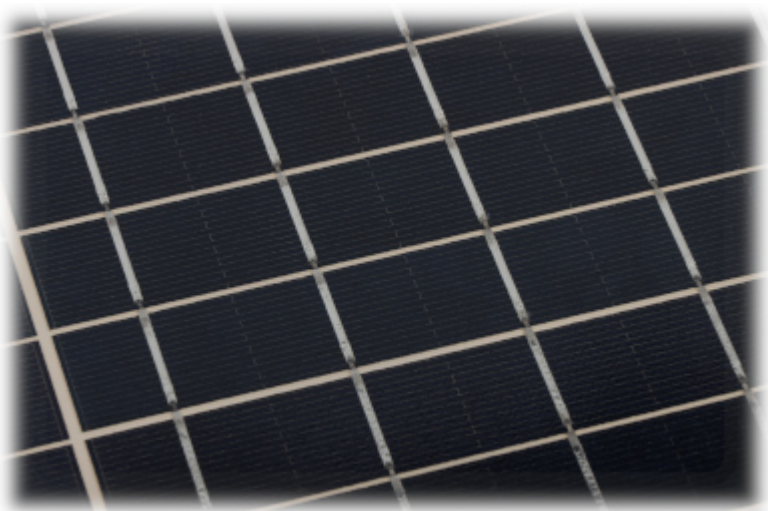
Thanks to the light, rigid aluminum frame and the glass front, the panels are more resistant to mechanical damage caused by e.g. hailstones. The rigid structure also allows the panels to be installed using standard frames and holders dedicated to solar panels.

**ATTENTION!** After reaching its own temperature of 80°C, the panel is irreparably damaged, therefore it is extremely important to provide it with adequate cooling during operation. When mounting on a frame or rack, remember to keep a few centimeters (recommended 5 ... 10 cm) of gap between the panel plane and the surface to which it is mounted in order to ensure natural ventilation.



Maximum power:	20 W
Maximum Power Current ( $I_{mp}$ ):	1.15 A
Maximum Power Voltage ( $V_{mp}$ ):	17.5 V
Short-circuit Current ( $I_{sc}$ ):	1.21 A
Open-circuit Voltage ( $V_{oc}$ ):	21.5 V
Length of the cables:	2 x 0.35 m
Cell Type:	Monocrystalline
Panel Structure:	Rigid in an aluminum frame
Weight:	1.84 kg
Dimensions:	430 x 350 x 25 mm
Manufacturer / Brand:	JustSolar
Guarantee:	2 years

Rear view:



Connectors:



## PACKAGE

Dimensions (L x W x H): 0x0x0 mm	Gross Weight: 0 kg
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