NEXT LEVEL SYSTEMS
GERMANY

# Installation Manual

# DUAL AIR solar system

**General information**

You have chosen a solar set from “Next Level Systems”. We would like to thank you for your trust. We have optimally coordinated the individual components of our solar sets. They are all products that we have developed specifically for use in touring vehicles. We have made sure that our systems are easy and simple to install. Where possible, we have pre-assembled the components or made them ready to plug in. This saves considerable effort and installation time.
Expanding our systems at a later date is also no problem. The solar controller can handle loads of up to 400Wp and all solar modules in our DUAL AIR series can be interconnected, regardless of their power output.

**Please note!**
Follow the instructions in this operating manual. Only use the components included in this solar kit. Only use the solar bonding kit approved by us to bond the system. The use of third-party products can lead to the exclusion of guarantee, warranty and product liability claims. These installation instructions are based on our experience and are non-binding. The use of the individual components must be adapted to the technical and local conditions. As it is not possible to cover all installation situations in these installation instructions, please contact your specialist dealer if you have any questions.

**Safety instructions!**
Only use professional tools suitable for the electrical installation to install the solar system. Do not install the system in rooms where gas mixtures or other highly flammable substances may be stored or may arise.

**Check that your solar set is complete:**
# DUAL AIR solar module/s
# Frame cable clips
# MC4 roof bushing set
# 2 x WAGO connectors
# Indoor cable set 6m
# Solar charge controller SR 400 MPP
# Temperature sensor for solar charge controller
# Spare fuse
# EBL plug

**Please note!**
To bond the solar system to the vehicle roof, you also need an NL solar bonding set. This is not part of this solar kit, as the service life of the components it contains is very limited.

**Preparations in the roof area**
- Check the bonding surfaces intended for installation. To achieve full adhesive strength, the contact surfaces of the spoiler profiles must be completely flat.
- Make sure that systems that have already been installed (SAT system, roof windows that can be opened, etc.) do not interfere with each other.
- Check the exact position of the roof duct. This should be selected so that the hole required for cable routing into the interior is optimally positioned. It is also possible to position the roof duct under the solar module.

**Preparing the solar modules**

- Remove the solar modules from the packaging and place them on the back of a cardboard base.
- The connection cables (3m) are already firmly attached to the solar module and fitted with a plus and minus plug. It is possible to shorten the cables if required. The required connectors are included. However, we would recommend retaining the cable length, as this may be required if the system is expanded at a later date.
- Cable clips are included in the set. These can be inserted into the solar module frame to securely fix the connection cables. As a result, the connection cables do not rest on the vehicle roof.
- In conjunction with the cable socket holder, the connection cables can then be led out to the side and routed in several positions towards the roof duct or to the second solar module.
- An NL solar adhesive is required for further work and to ensure secure bonding. This contains bonding instructions. To complete your documentation, we are printing these below.

**Installing the MC4 roof bushing**

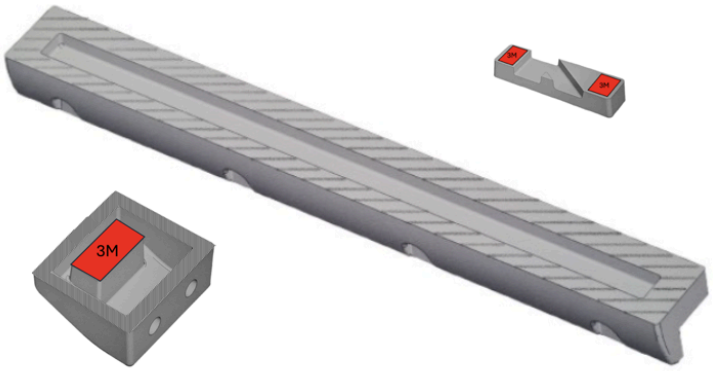
We recommend positioning and fastening the roof bushing before gluing on the solar modules. A hole must be drilled at a suitable point for this purpose. Pre-drilling from the inside with a small drill has proven to be a good idea. The final hole is then drilled from the outside.

- Then, as described in the bonding instructions, pre-treat the roof surface and the roof duct and apply Sikaflex 554 to the circumferential adhesive edge of the roof duct.
- Remove the protective film from the adhesive tape and feed the two cables through the hole.
- Press the roof bushing onto the roof surface.

**Please note!**

Do not yet insert the connecting cables coming from the solar modules into the roof bushing. This work will be carried out at a later date.

**Installation manual for gluing the NL spoiler profiles**
These bonding instructions are designed for products from Next Level Systems




- NL spoiler profile set 450mm
- NL spoiler profile set 530mm
- NL spoiler profile set 660mm
- NL solar-MC4 roof duct set

**Mounting the cable base holder**
The base holder is used for cable routing and also s
be glued to the center of the long side of the m
through the base holder, this must be done befor
the base holder. The underside of the base holder is pre-treated in the same way as the solar spoiler (see below) and glued to the roof with the adhesive.
**Please note!** If the solar module is removed at a later date, the adhesive tape can easily be cut with a cutter knife.

**Preparation of the roof surface**

1. For new vehicles with factory-painted roof surfaces or fiberglass (GFK) roofs, clean the designated adhesive are with Sika Aktivator-205 using a lint-free cloth.
2. Older roof surfaces must be treated with the included abrasive pad before cleaning. Afterward, remove dust and also pre-treat the respective roof surface with Sika Activator-205.
3. The evaporation time is approx. 10 minutes (max. 2h).

**Please note! The roof surface is not treated with Sika Primer-210.**

**Preparation of the spoiler profiles, the cable base bracket and the roof bushing**

1. Treat the designated adhesive area with the abrasive pad.
2. Apply Sika Aktivator-205 thinly with a lint-free cloth.
3. The evaporation time is approx. 10 minutes (max. 2h).
4. Apply Sika Primer-210 thinly using the included wool felt applicator.
5. The evaporation time is approx. 15 minutes (max. 24h). Below, 15°C, approx. 30 minutes (max. 24h).

**Please note! The processing temperature should be between 5°C und 40°C.**

**Execution of the bonding**

1. Insert the supplied Sikaflex 554 into a standard cartridge gun. Pierce the cartridge and screw on the nozzle tip. Cut this to size so that a thick bead can be squeezed out.
2. Apply the adhesive over the entire surface of the base bracket and in thick beads to the solar spoiler.
3. Place the complete set on the pre-treated roof surface and press down. Please note, however, that an adhesive thickness of at least 2 mm must be maintained after pressing on.

**Please note! The curing time is approx. 24 hours. In the winter months, this is slightly longer (36 hours) if the humidity is low.** During this time, the solar module must not be loaded with weights, as the adhesive thickness of at least 2 mm between the roof and the spoiler profile must be maintained.

**IMPORTANT!** The information contained in these bonding instructions has been compiled to the best of our knowledge and based on our experience. They are not binding, as local and technical conditions must be taken into account. Bonding tests were only carried out on standard painted roof surfaces and fiberglass surfaces of touring vehicles. It is not known how bonding will behave on repainted and other surfaces. In this case, please contact the respective manufacturer and clarify the possibilities of bonding.

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**Cable routing in the interior**
The two WAGO clamp connectors are used to connect the indoor cables (enclosed 6m) with the through cables attached to the roof bushing.
RED = SOLAR-Plus (+)
BLACK = SOLAR-MINUS (-)
Laying the indoor cable to the SR 400 MPP solar charge controller

**Please note!**
Install the solar controller as close as possible to the on-board battery or close to the EBL electric block if it is used for the power supply.

**Connecting the SR 400 MPP solar controller**

Follow the installation instructions in the installation manual supplied with the solar controller.

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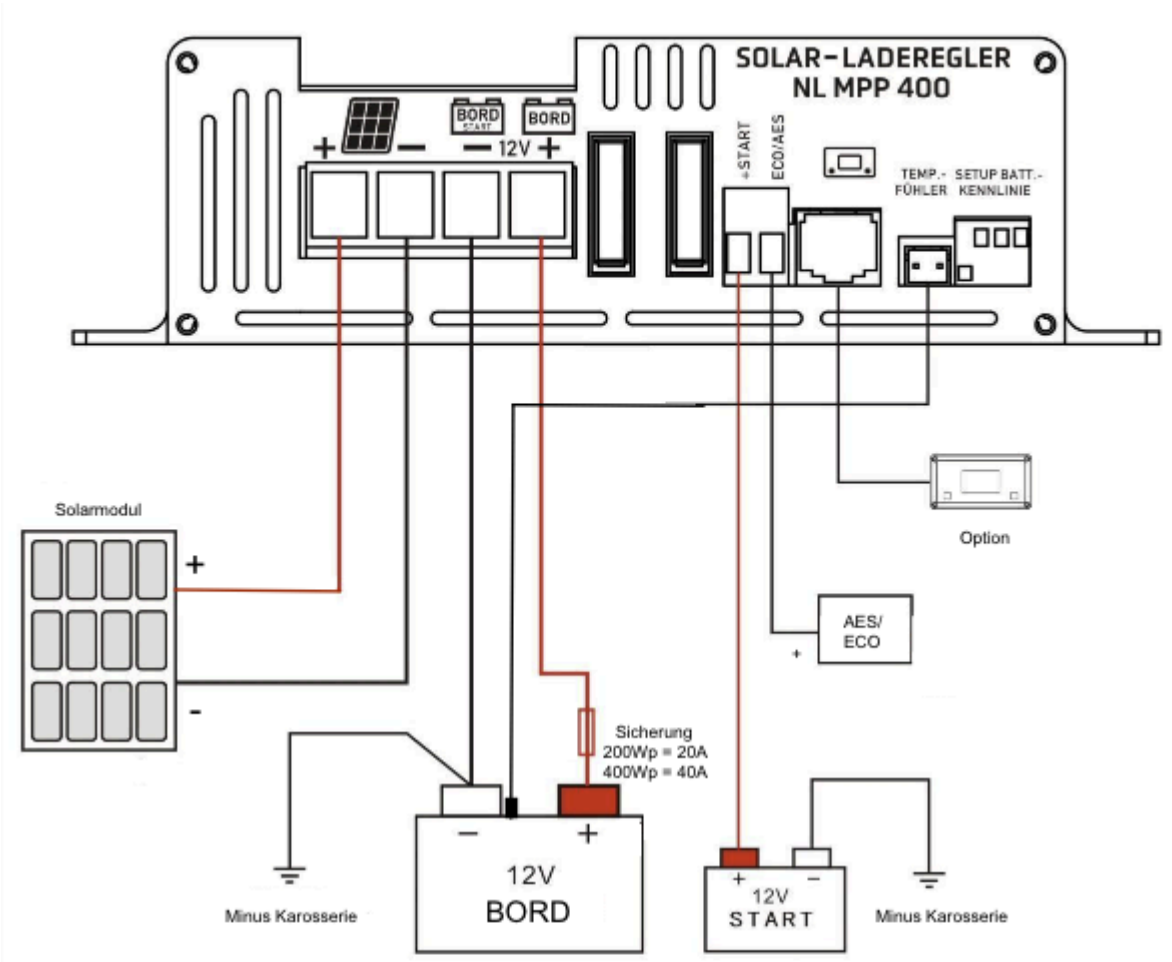


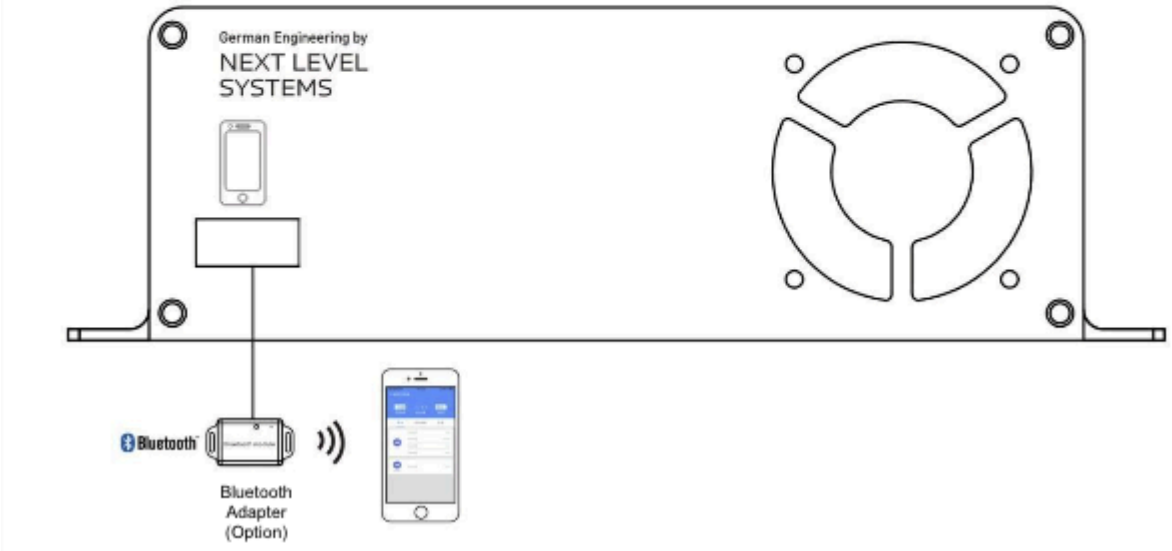

**Putting the solar system into operation**
After successful installation and setting of the battery type used on the SR 400 MPP solar controller, the system can be put into operation.

**Solar system with 1 solar module**
Plug the two charging cables (plus and minus) laid on the roof into the matching mating connectors of the roof bushing.

**Solar system with 2 solar modules**
The two solar modules should be connected in parallel. Use the enclosed Y-connectors for this.

- First insert the respective individual cables (input) of the two Y connectors into the roof bushing.
- There are two identical outputs on each Y-piece. The appropriate plug from solar module 1 and solar module 2 is plugged into these.

**Please note!**
For better understanding - there is a plus and a minus plug on each solar module. To connect the solar modules in parallel, the plus of module 1 and the plus of module 2 must be connected to each other. The two plus plugs are therefore in one Y-connector and the two minus plugs in the other Y-connector.

**NOTE!**
Once the charging cables are plugged into the roof bushing and the system is fully wired in the interior, the system starts. As some function tests are first carried out within the solar controller during initial installation, it may take a few minutes before the system is switched to the battery system and the LED displays indicate the operating status.