

Installation Tips to Prevent Inverter Soaking



Background

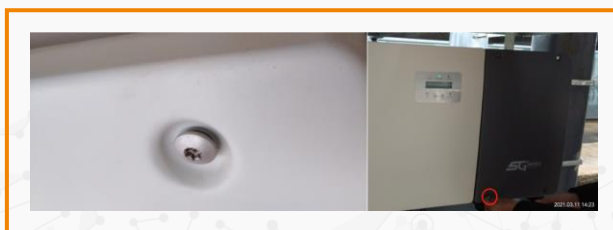
During the process of on-site investigation, you can encounter the problem of inverter failure caused by water ingress. Sometimes there is still water ingress after replacing the new machine and this requires investigation to understand the cause of water ingress from the installation.

Troubleshooting Guidance

The protection level of the inverter is IP65 or IP66, and it is tested for airtightness when they leave the factory, so it can be used outdoors and can be exposed to rain. The overall water resistance is extremely high, however, during the installation process, irregular construction may still cause water to enter the machine. This Solis seminar will cover the precautions to look out for during the inverter installation process.

1. Inverter door screws are not tightened, causing water to enter

Some inverters require the casing to be opened when installing the AC cables. If the screws are not tightened sufficiently during the installation process, the air tightness of the equipment will be compromised and moisture will likely enter.



Suggestion: Check all the screws of the door panel of the maintenance compartment to see if they are fully tightened. If not, rainwater may enter the inverter through the gap. Ensure you fully tighten all screws.

2. Poorly plugged RS485/AC inlet holes, etc., resulting in water ingress

When installing communication and AC cables on the inverter, if there is a problem with the plugging of the cable inlet hole, it will also cause water to enter the inverter.





Suggestion: Check whether the cable entry hole is well plugged and whether there is a missing PG head. In low level installations, rainwater may splash into the inverter when it rains, or the inverter may be soaked in water. There may also be condensation problems in humid environments. Ensure the cable entry hold is well plugged and will not let water in.

3. Water enters through the outer sleeve of the cable

During the installation and construction of the PV plant, the communication lines, AC cables, ground cables, etc. will use bushings. One end of the bushing extends into the wiring compartment, and the other end is located on the roof. It is located higher and has openings (like the U-shaped connector principle). When it rains or there is water around, the water will flow into the inverter through the bushing.



Suggestion: Remove part of the external bushing at the wire entry hole of the wiring compartment and prohibit the bushing from directly entering the inside of the inverter. This will prevent rainwater from flowing into the inside of the inverter.

4. Poor site location for inverter installation, causing the machine to soak in water

Some PV plant installation locations are in low-lying terrain, and it is easy to accumulate water during the rainy season, causing the inverter to be flooded. Equally, during the early stage of construction, prior to inverter installation, do not store the inverter outdoors without any protective measures.



Suggestion: Install the inverter on high ground or carry out drainage work in the installation area of the inverter to prevent water accumulation. In addition, it is recommended to store inverters indoors before installation and construction.