



Photovoltaic (Solar Electric) System Installation Manual

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Sol Power Contacts

Customer contact - General inquiries, quotes on Sol Power's other products and services, questions on your billing, referrals

Abel Collins

Phone: (401) 207 4484

Email: abel@solpowersolar.com

Service contact - Panels not producing, alerts on the inverter, monitoring isn't reporting

Tyler Mason

Phone: (401) 787 0519

Email: tyler@solpowersolar.com

Company contact info - In case you can't reach someone listed above

Phone: (401) 680 0765

Email: info@solpowersolar.com

We are a fully licensed electrical contractor. Sol Power provides residential and commercial solar installations, generator installations, and a full range of electrical services.

System Info

System size: 19.2 kW DC

Net Metering utility interconnection program

48 Panels, Model Hanwha All Black 400 Watt

Your system's Hardware

Panels model: Hanwha Q.peak Duo Blk-G6+ 340W

25 Year Power Warranty: After 25 years your panels are guaranteed to be producing at least 86% of their original peak power output

Limited Hardware Warranty: 25 years

Inverter model: SolarEdge SE11400H-USS2 and SE6000H-USS2

Inverter hardware warranty: 20 year extended warranty

Optimizer model: P400

Optimizer hardware warranty: 25 years

FAQ

Q: What do I do if I have questions or my system needs service?

A: Call your Sol Power customer or service contact

Q: Why did my monitoring stop working?

A: The most likely scenario is that your inverter lost connection to the internet. Check to see if all the connections in your monitoring setup are secure and try to reset the connection as instructed during your wrap up meeting. Your inverter could be connected via an ethernet bridge, a wireless connection, or a direct ethernet cable run. An ethernet bridge consists of two identical boxes plugged into a wall outlet, one near the router and the other near the inverter. Check to make sure that both ends of the Ethernet bridge are plugged directly into a wall outlet and not a surge protector. If you are unable to reset the connection please call your Sol Power service or customer contact and we will walk you through the process.

Q: What is the maintenance for my system?

A: We recommend checking your system monitoring at least once a month. Make sure that all the panels are producing power and look for system alerts. If a panel isn't producing or if your system has an alert then call your Sol Power service or customer contact. Keep your eyes and ears open for squirrels and other invaders. Try to look underneath the array at least once a year to see if there are any critters building a nest.

Q: How do I tell Sol Power how much I appreciate their awesome services?

A: Tell your friends about us. We'll throw in a referral bonus for you if they get an installation. You can also leave reviews for us on popular websites like google places, facebook, and yelp.

Referral Program

Don't forget to take advantage of our referral program. Share your customer contact's info with friends or direct them to our website at solpowersolar.com. We greatly appreciate the referral! Make sure they mention your name when they contact us. If they purchase an installation then we'll send you a referral bonus after their system is installed and paid for. With your help we'll reduce carbon emissions by generating clean solar energy and more people can enjoy savings on their electric bills.

Federal tax credit

You can claim a federal tax credit, a direct reduction of your federal taxes owed, equal to 30% of the amount you paid for your solar installation. In order to claim the credit, file IRS form 5695 with your federal taxes for the year the system is installed. The form has been included with this manual for your convenience. We recommend going over the form with your tax preparer, especially if you have undertaken any other large energy related projects in the past year or will be taking the credit over multiple years.

Total System Cost: \$78,790.00

Federal Tax Credit: \$23,637.00

Safety

Electrical - Your solar installation generates electricity at high voltages. Do not open up any solar hardware. Doing so will create a serious safety risk and void the warranty on your equipment. Treat the system as if it is carrying live electricity at all times, even if the sun isn't shining. Your system should only be serviced by a licensed professional.

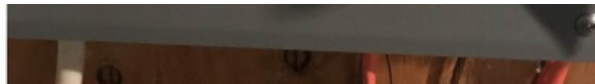
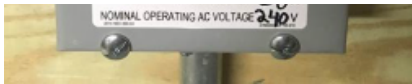
Snowslides – Snow will collect on your roof and can slide off in large sheets. The sun will heat the panels and melt the bottom of any snow buildup. Then the entire mass of snow can slide off the roof at one time. Please be cautious of falling snow drifts during the winter months and don't leave anything breakable or valuable in the path of potential snow falls. We can install snow guards to retain the snow as an additional precautionary measure.

System shut down procedure – You will not need to shut down the system as the owner unless otherwise instructed by a Sol Power representative. Whenever the grid loses power, the system will shut off automatically and it will restart on its own five minutes after grid power is restored. A licensed professional might need to shut down your system when performing maintenance or electrical work.

Your system has at least one AC disconnect. AC disconnects are typically located within or next to your main electrical circuit panel (where the circuit breakers are located), next to your system's inverter, and/or next to the utility meter. If the AC disconnect is located within your electrical panel it will be a double pole (tied) breaker and it is typically the lower rightmost breaker but it can be positioned elsewhere. The AC disconnect will be labeled with a sticker or plaque that says "AC DISCONNECT", most commonly red with white letters. Turning off the AC disconnect will shut down your entire solar installation. Pictures of example AC disconnects are shown below



Exterior and some interior disconnect breakers are protected by a switch cover



Maintenance

We recommend a reactionary approach to maintaining your installation. Keep an eye on the output of your system and if it is underperforming give us a call to diagnose the issue and to take action. Your system is fully monitored and we recommend checking the monitoring at least once a month to ensure that all panels are producing energy.

Look out for squirrels and others critters. Try to look underneath the array at least once a year to see if there are any nests. Your solar installation doesn't require any preventative or regular maintenance and the panels will be cleaned by the snow and rain. Snow will eventually melt off your panels. We do not recommend trying to clear snow off the panels. If you do want to remove the snow use a soft foam head brush, taking care not to damage the panels or scratch the glass. We recommend that you let the snow melt naturally.

Monitoring

You can view your system's performance on SolarEdge's monitoring website. Login at <http://monitoring.solaredge.com/solaredge-web/p/login>

We recommend checking your system monitoring at least once a month to make sure everything is working. On the layout view of your system check to see that all the panels are producing and look out for any alerts in the site status. When the panels are covered by snow the production might be oddly affected and that can trigger an alert for low system production. If you notice unusual production during times of snow coverage please wait for the snow to melt and check back in your system. If the problem persists after the snow is melted call your Sol Power service or customer contact to address the issue. The monitoring connection is dependent on the internet and production reporting can lag several days behind the actual performance while data uploads.

Squirrels and other critters

Squirrels like to build nests underneath solar arrays and chew on system wiring. Look out for increased squirrel activity in the vicinity of your roof and listen for squirrels scurrying on your roof. Try to look underneath your array at least once a year to see if there are any nests. If squirrels have taken an interest in your solar array try to eliminate their access points to your roof, especially tree branches close to the house. If the problem persists we can install critter guard around the perimeter of your array to help keep them out.

Cleaning

Rain and snow should do a sufficient job of cleaning your solar panels. In the case of heavy soiling, such as bird droppings or thick pollen, modules may be cleaned with plenty of water without any cleaning agents. If necessary, a soft cleaning device (e.g. sponge or soft brush with split bristles) may be used. Never scrape or rub off dirt, as this may result in micro-scratches and can damage the anti-reflective coating on the module glass.

If you notice a significant reduction in year over year production (on the order of 25% or more) that could indicate that your system needs to be cleaned. Note that system production will often have large annual variations due to weather conditions and the panels degrade over time resulting in decreased production.

Do not use a pressure washer or walk on the solar modules. Pressure washing or walking on the solar modules can damage the glass and/or cause micro-cracks in the solar cells. The modules can be thermally damaged from cold water contacting hot module glass. Try to clean the modules at times of low sun exposure and try to match the temperature of the water to the temperature of the panels.

Inspections

You can evaluate your system's up to date performance by checking the online monitoring. If you would like additional peace of mind beyond monitoring the system output, we can perform inspections of the PV system to ensure that:

All fixtures are securely tightened and corrosion-free;

Wiring is securely connected, properly arranged and free of corrosion;

Cables are free of damage

All the major components of your system are warranted for 25 years, and should run at least that long without any alterations or adjustments. If there is an issue with your system, we recommend that you call your company contact at Sol Power to help resolve it.

Understanding your bill

With net metering National Grid can only see your net energy usage (electrical usage - solar generation). They don't have access to your usage or your generation. The kWh reading on your bill is your net energy usage. In order to determine how much energy you used in a month, you need to add the net meter reading from your electric bill to your solar production from the same time period (net meter reading + solar generation = electrical usage). The solar production can be found on your monitoring portal. If you want to see how much energy you are using each month we can install a consumption meter for you. The meter will show your energy usage on the same monitoring portal as your solar generation and you will be able to see how much electricity you're using and at what time of day.

If you need to change or update your solar account setup we can help facilitate that process with National Grid. For issues on your utility billing, email CustomerService@us.ngrid.com and Distributed.Generation@nationalgrid.com, or call (800) 322 –3223 or (781) 907 – 3424.