

TESLA

# SOLAR ROOF

OWNER'S MANUAL



# IMPORTANT SAFETY INSTRUCTIONS

## SAVE THESE IMPORTANT SAFETY INSTRUCTIONS

This manual provides important safety information. Tesla assumes no liability for injury or property damage due to repairs attempted by unqualified individuals or a failure to properly follow these instructions. These safety instructions must be followed when handling Tesla Solar Roof.

## SYMBOLS IN DOCUMENT

This manual uses the following symbols to highlight important information.



### **DANGER:**

Indicates the presence of a hazard that **WILL** cause severe personal injury, death, or substantial property damage if ignored.



### **WARNING:**

Indicates the presence of a hazard that **COULD** cause severe personal injury, death or substantial property damage if ignored.



### **CAUTION:**

Indicates a hazardous situation which, if not avoided could result in minor injury or damage to the equipment.



### **NOTE:**

Indicates an important step or tip that leads to best results, but is not a safety or damage related.



### **DANGER:** **Your Solar Roof system generates electrical current.**

Do not try to service Solar Roof, disconnect wires, open electrical panels, or modify any portion of your equipment in any way. Failure to follow this instruction can lead to electrical shock, serious injury or death.



### **DANGER:** **Solar Roof is slippery and presents a fall hazard.**

Never walk or stand on Solar Roof for any reason. Doing so can lead to falls, serious personal injury and death. Only allow trained Tesla professionals to access your Solar Roof using appropriate safety equipment and personal fall protection.



### **CAUTION:** Opening or altering electrical equipment by anyone other than a certified technician will void your warranty.



### **NOTE:** Do not walk or stand on gutters, rakes, hips, or ridges. Doing so can damage your Solar Roof.

## **NOTE TO TRAINED PROFESSIONALS**



### **DANGER:** **Tesla Solar Roof is slippery and is a fall hazard.**

As a Tesla trained professional, only access Tesla Solar Roof with appropriate safety equipment and while wearing personal fall protection. An approved and safe walking platform should be used when accessing the roof to prevent falls, and damage to the roof. Tesla Solar Roof is designed to support the weight of an installer. Avoid walking on metal flashings and trims as it may cause aesthetic damage to the roof. In addition, skylights, roof openings and light transfer panels must be covered with approved covering to prevent falls.



# YOUR SOLAR ROOF

---

Congratulations on your new Solar Roof. Welcome to the Tesla family and the energy revolution. Your beautiful and durable Solar Roof will produce clean, renewable energy for years to come.

This manual walks you through each step of activating, monitoring, and maintaining Tesla Solar Roof. If you have any questions about this manual or other functions of your Solar Roof tiles, please contact Energy Customer Support.

# SOLAR ROOF ACTIVATION

Energy Customer Support notifies you when your utility company approves your Solar Roof. If your system is approved and not yet turned on, you can activate Tesla Solar Roof with guidance from Energy Customer Support.

## Glossary

**Breakers** Switches inside electrical panels that protect your home from harmful power surges.

**Disconnect** A switch, operated by a large handle, that disconnects or interrupts the electrical circuit.

**Inverter** A central component that converts solar-generated power from Direct Current (DC) voltage to Alternating Current (AC) voltage for your home's use.

## System Activation

1. Turn on the breakers in your main electrical panel.

Go to your main electrical panel. Most electric panels are mounted on an outside wall, or mounted in a garage, basement, or closet.

Find the breakers labeled Solar System, PV, Photovoltaic Backfeed, Powerwall, or Tesla. Switch them **On**.

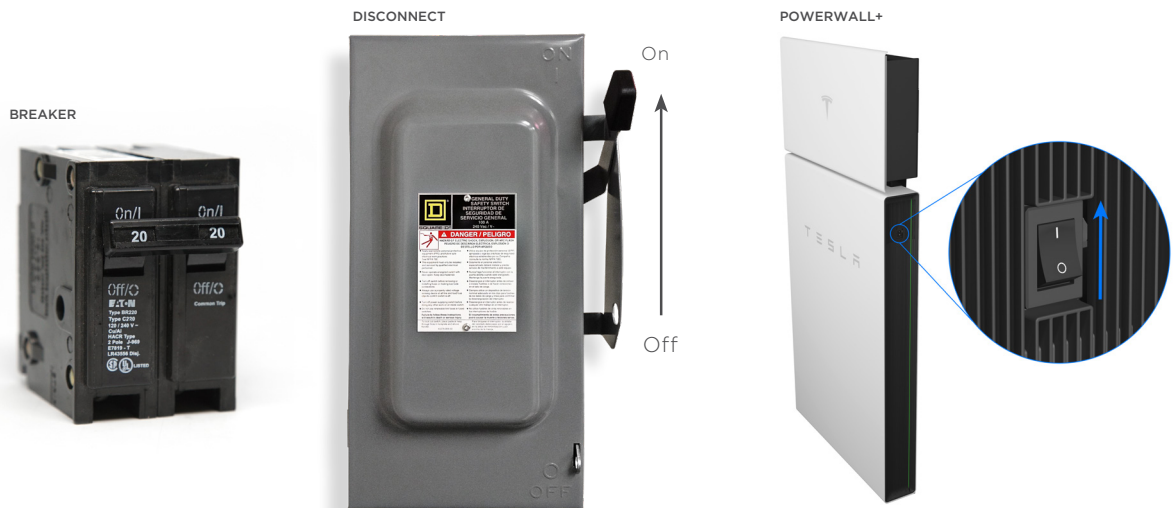
You may have an additional sub-panel. If you do, check to see if there are additional solar breakers in the sub-panel and switch them On.

2. Switch on the external AC and DC disconnects.

If your Solar Roof system has one or both of these, switch them On.

3. Switch on the Powerwall and Powerwall+ units.

The toggle switch can be found on the right side of the unit. For Tesla solar systems with at least one Powerwall+: After your system is installed, it is intelligently configured to Self-Consumption Only mode, producing only enough energy required to power your home and charge your Powerwall. In this mode, no energy flows to the grid until your utility grants your system Permission to Operate (PTO). After receiving PTO, your system is automatically configured to begin full production and allows energy to flow to the grid.



# HOME ENERGY MONITORING

## Connecting to Your System

Now that your system is live, the last step is to connect to its wifi network to view product details, monitor power flow and charge level. Visit the Tesla Energy Support Page for guidance on setup:

<https://www.tesla.com/support/energy/powerwall/own/monitoring-from-home-network>.

## Tesla Mobile App

The Tesla Mobile App gives you visibility into your Solar Roof power generation and home energy use. The app also sends alerts from Energy Customer Support if Tesla detects issues with your Solar Roof system.

Most issues can be resolved remotely by Energy Customer Support. If not, Tesla sends a technician directly to your home.



## Self-Consumption Only Mode

The Powerwall+ system understands real time energy production and consumption. Sites with at least one Powerwall+ are configured to operate with Self-Consumption Only Mode after inspection is passed. During Self-Consumption Only Mode, no energy is sold back to the grid, and solar generation is automatically reduced to the quantity necessary to charge Powerwall or power your home usage.

If you have any questions about your Powerwall, please contact Energy Customer Support.



## PERFORMANCE & MAINTENANCE

### System Performance

The performance of Solar Roof tiles is measured by how much energy is generated over time. Energy production can vary from month to month based on seasonal weather conditions. Other factors that can hinder production include:

- Unexpected shading due to new tree growth
- Debris or dirt on the tiles
- Snow coverage
- Long periods of inclement weather

You can find expected performance information on your Solar Roof system layout document. You can also use the Tesla mobile app to follow your energy production in real time.

## System Maintenance

Solar Roof requires routine maintenance. Minor care on your part can ensure better system performance.

- Shading on your roof can hinder electricity production. Keep trees or other tall plants trimmed to prevent shade on your Solar Roof tiles.
- Debris or dirt on the tiles can hinder energy production. Tesla recommends that a professional perform any cleaning service required. Please contact **Energy Customer Support** for guidance.

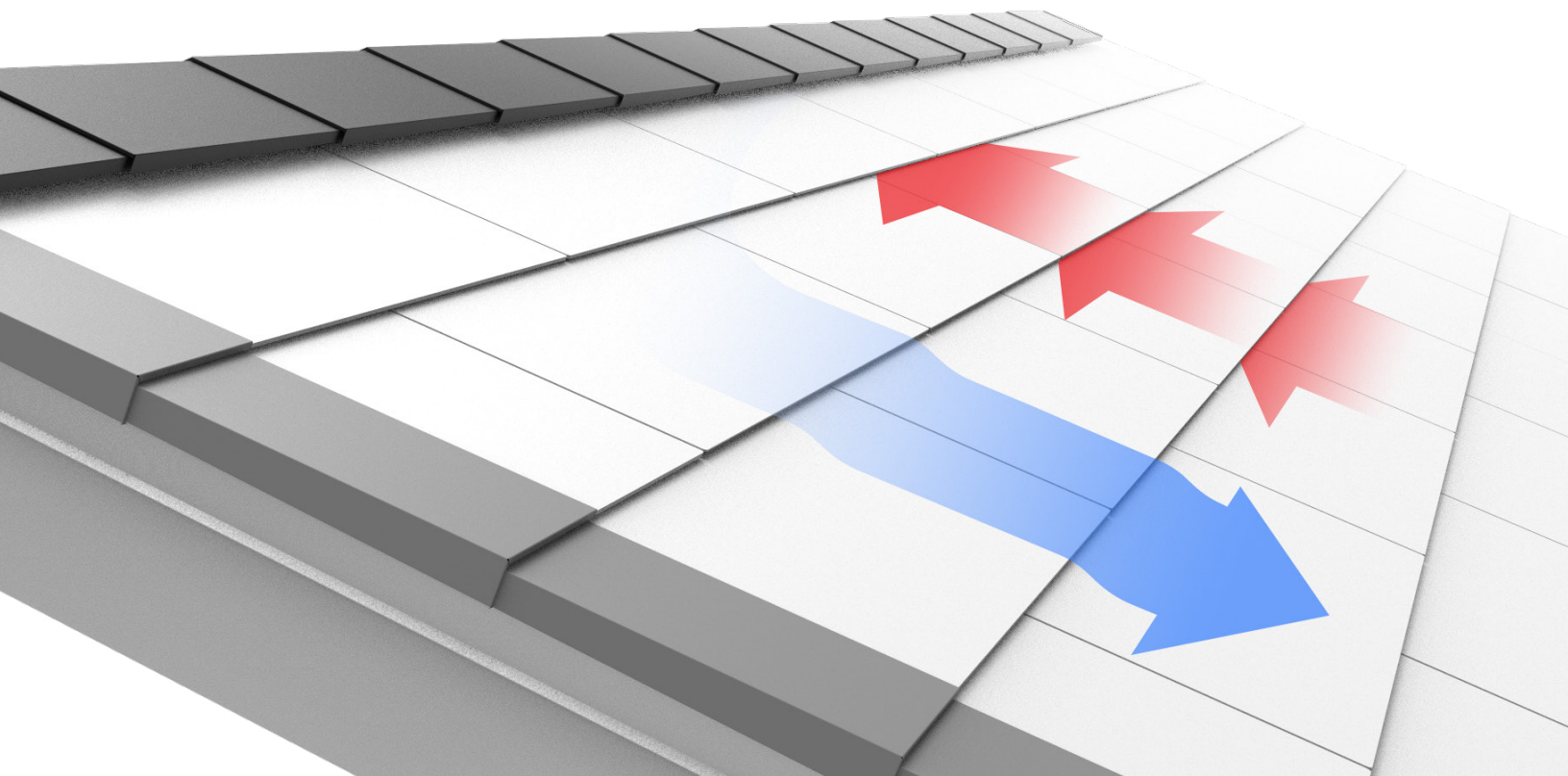
**DANGER:**

Do not walk or stand on the roof!

Do not use detergents, abrasives, solvents, or other types of cleaning products. If you decide to clean your Solar Roof, you can hose down your roof with water at standard garden hose pressures. Direct the spray or flow of water in the same direction that water typically flows on your roof (down) and avoid directly spraying the front edge of tiles, or between tiles. Where dust or debris has built up, or for problematic areas, use a telescoping soft brush (similar to soft brushes you use to wash your car) to gently wipe the roof surface.

**DANGER:**

- Snow or ice may accumulate on your Solar Roof during snow storms. Accumulated snow or ice may slide or fall, resulting in property damage or bodily harm. Please contact **Energy Customer Support** for guidance.



# WARRANTY AND SERVICE

## **Solar Roof Warranty**

Tesla provides a 25-year warranty on installation and weatherization of your Solar Roof.

## **Solar Roof Module Warranty**

Your Solar Roof tiles will produce power according to the Module Warranty listed in your Solar Roof Warranty. This describes the amount of power your solar cells are capable of generating in optimal conditions. However, actual energy output may be affected by environmental factors such as shade, dust, debris, snow, and weather.

## **Equipment Warranty**

Your equipment comes with a warranty from its manufacturer. If you experience any issues with your equipment during its warranty period, for example an inverter, please contact **Energy Customer Support** so we can help you file a warranty claim with the manufacturer. When you need to replace your equipment after its warranted life, please contact Tesla Customer Service and we will help you obtain and install a replacement, at your cost.

## **Mid-Circuit Interrupter Warranty**

If you experience any issues with your Mid-Circuit Interrupter (MCI) during its 10-year warranty period, please contact **Energy Customer Support** so we can help you file a warranty claim with the manufacturer. When you need to replace your Mid-Circuit Interrupter (MCI) after its warranted life, please contact Tesla Customer Service and we will help you obtain and install a replacement Mid-Circuit Interrupter, at your cost.

## **Powerwall Warranty**

Powerwall is a maintenance-free product with a 10-year warranty. Please visit Tesla's support page for the Powerwall Owner's Manual at [www.tesla.com/support/energy/own/powerwall/owner-documents](http://www.tesla.com/support/energy/own/powerwall/owner-documents).

## **How to Get Warranty Service**

In the rare case that your Solar Roof is not running properly, please contact **Energy Customer Support**. If Tesla determines that a problem cannot be diagnosed or resolved remotely, **Energy Customer Support** will troubleshoot the issue and arrange for service. If the issue is covered by warranty, your Solar Roof will be repaired at no cost to you. If the issue is not covered by your warranty, **Energy Customer Support** will assist you in resolving the issue and service charges may apply.





## RELATED PRODUCTS: POWERWALL AND POWERWALL+

If you have a Powerwall system, you are successfully storing your excess solar energy from Solar Roof tiles and powering your home even when the sun isn't out. You also have the advantage of automatically backing up your home during a utility power outage.

Powerwall is a maintenance-free product with a 10-year warranty. Please visit Tesla's support page for the Powerwall Owner's Manual at [www.tesla.com/support/energy/own/powerwall/owner-documents](http://www.tesla.com/support/energy/own/powerwall/owner-documents).

### **Powerwall Operations**

After your Solar Roof is commissioned and the inverter is active, Powerwall automatically begins operation. You do not need to do anything to begin operation. If you do not see Powerwall in the Tesla Mobile App, check that the home Internet connection is working and that the Powerwall switch is turned on.

If a brownout or blackout is experienced when Powerwall is in backup mode, reduce the loads. As you turn off appliances or switch off circuit breakers in your electrical panel, Powerwall automatically attempts to restart.

If you have any questions about your Powerwall, please contact Energy Customer Support.

## FREQUENTLY ASKED QUESTIONS

### **When can I turn on my Solar Roof?**

Once you receive permission-to-operate (PTO) from your electric utility, Tesla will notify you that you can safely turn on your system. PTO after installation can take from one to six weeks depending on your local utility processing times. After PTO has been received, follow the steps in the video link below to begin generating clean energy. Real-time monitoring will be available in your Tesla app within 1 hour of turning on your system. <https://www.tesla.com/support/energy/solar-panels/after-installation/turning-on-your-system>

### **How much energy does my Solar Roof produce?**

The amount of energy your Solar Roof produces depends on your system size, as well as environmental factors such as shade, dust, debris, snow, and weather. Refer to your Solar Roof layout document for more information.

### **Can I see how much solar energy my home is generating and using?**

The Tesla app gives you real-time and historical visibility into your solar production and home energy usage. Use the Tesla mobile app to follow your energy production in real time.

### **How long can I expect my Solar Roof to last?**

The solar array electrical components of your Solar Roof have a 25-year operating life. Your inverter and Mid-Circuit Interrupter (MCI) have a 10-year warranty from manufacturer and may need to be replaced after that period. If you have a Powerwall, it has a 10-year warranty and may need to be replaced after that period. Please see your contract for additional information about the other components of your Solar Roof system.

### **Will I still be subject to electric rate increases if I buy Tesla Solar Roof?**

Even with solar, you will most likely have a residual utility bill and those rates may fluctuate. The bill depends on the size of your Solar Roof system relative to your energy demand, as well as your peak hour energy use. You can minimize utility rate changes by using less energy during peak hours.

### **What happens when the sun goes down?**

You automatically draw power from the utility grid. Since you are always connected to the grid, your home is fully powered at all times. You never have to worry about “running out” of energy. If you also have a Powerwall installed, some or all of your energy needs are supported by it.

### **What happens to my solar production on a cloudy day?**

Your Solar Roof can still generate electricity on cloudy days, since even diffuse sunlight can activate solar power production. Solar Roof output on a cloudy day may be less than on a cloudless day, but still often produces a meaningful amount of electricity.

### **Will Tesla Solar Roof impact heat transfer to the attic?**

Tesla Solar Roof is designed to encourage airflow underneath the solar tiles and ventilate hot air through a ventilated ridge cap.

**Will I still have solar power if there is a utility power outage?**

If you don't have a battery like Powerwall, your Solar Roof will not work during a utility outage due to grid safety requirements. However, if you have both Tesla Solar Roof and Powerwall during an outage, your home's power supply operates as an independent system from the utility grid, running on solar energy during the day and storing excess energy for later use.

**If I have Powerwall, how quickly does Powerwall restore power to my home?**

Powerwall can detect an outage, disconnect from the grid, and bring power back to your home in a fraction of a second. Powerwall can keep your appliances running without interruption. Your Tesla Solar Roof can continue to recharge your Powerwall, providing extended hours of coverage.

**DANGER:****Can I walk on my Solar Roof?**

While Tesla Solar Roof is engineered to safely withstand being walked on, walking on Tesla Solar Roof can result in serious injury or death. Please call **Energy Customer Support** for guidance should you need access to your roof.

**Are Solar Roof tiles replaceable?**

Yes. The tiles are easy to replace if necessary. Please contact **Energy Customer Support** if you believe any part of your Solar Roof requires repair.

**DANGER:****What if my Tesla Solar Roof needs repairs?**

Never attempt to fix or repair your solar power system. Your Solar Roof system contains high voltage electric current and contact can result in burns, sparks, and lethal shock.

Do not disconnect wires, open electrical panels, or modify/damage the equipment in any way.

Do not attempt any Solar Roof replacements or repairs yourself. Any opening or altering of electrical equipment by anyone other than a certified technician may void your warranty.

Please contact **Energy Customer Support** if you believe any part of your Solar Roof requires repair.

## ADDITIONAL RESOURCES

For resources visit the Tesla Solar Roof Support Pages <https://www.tesla.com/support/energy/solar-roof/after-installation>.

You can use the Tesla mobile app or visit [www.tesla.com/teslaaccount](http://www.tesla.com/teslaaccount) to follow your energy production in real time.

