

TESLA



POWERWALL INSTALLATION MANUAL
FOR POWERWALL 1067000-00-E AND 1067000-01-E
WITH SMA AND SOLAREEDGE INVERTERS

For the latest Powerwall installation documents in all supported languages, go to:
www.teslamotors.com/support/powerwall-installer

To secure the full 10-year product warranty for the owner, be sure to register Powerwall online.

Warning: Read this entire document before installing or using Powerwall. Failure to do so or to follow any of the instructions or warnings in this document can result in electrical shock, serious injury, or death, or can damage Powerwall, potentially rendering it inoperable.

PRODUCT SPECIFICATIONS

All specifications and descriptions contained in this document are verified to be accurate at the time of printing. However, because continuous improvement is a goal at Tesla, we reserve the right to make product modifications at any time.

The images provided in this document are for demonstration purposes only. Depending on product version and market region, details may appear slightly different.

ERRORS OR OMISSIONS

To communicate any inaccuracies or omissions in this manual, please send an email to: energymanualfeedback@teslamotors.com.

ELECTRONIC DEVICE: DO NOT THROW AWAY



Proper disposal of batteries is required. Refer to your local codes for disposal requirements.



MADE IN THE USA



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Important Safety Instructions














SAVE THESE IMPORTANT SAFETY INSTRUCTIONS. Powerwall installation and repair instructions assume knowledge of high voltage electricity and should only be performed by Tesla Certified Installers. Tesla Motors assumes no liability for injury or property damage due to repairs attempted by unqualified individuals or a failure to properly follow these instructions. These warnings and cautions must be followed when using Powerwall.










SYMBOLS IN THIS DOCUMENT

This manual uses the following symbols to highlight important information:






| | |
|--|--|
|  Warning: | WARNING indicates a hazardous situation which, if not avoided, could result in injury or death. |
|  Caution: | CAUTION indicates a hazardous situation which, if not avoided, could result in damage to the equipment. |
| Note: | NOTE indicates an important step or tip that leads to best results, but is not safety or damage related. |

GENERAL INFORMATION

-  Warning: Read this entire document before installing or using Powerwall. Failure to do so or to follow any of the instructions or warnings in this document can result in electrical shock, serious injury, or death, or can damage Powerwall, potentially rendering it inoperable.
-  Warning: A battery can present a risk of electrical shock, fire, or explosion from vented gases. Observe proper precautions.
-  Warning: Powerwall installation must be carried out only by Tesla Certified Installers who have been trained in dealing with high voltage electricity.
-  Warning: Powerwall is heavy and challenging to lift.
-  Warning: Use Powerwall only with a Tesla-approved inverter. For a list of compatible inverters, go to:
www.teslamotors.com/support/powerwall
-  Warning: Use Powerwall only as directed.
-  Warning: Do not use Powerwall if it is defective, appears cracked, broken, or otherwise damaged, or fails to operate.
-  Warning: Before beginning the wiring portion of the installation, first power off the inverter and then open the AC and DC disconnect switches (if applicable for the installation).
-  Warning: Do not attempt to open, disassemble, repair, tamper with, or modify Powerwall. Powerwall is not user serviceable. Batteries in Powerwall are not replaceable. Contact the Tesla Authorized Reseller who sold the Powerwall for any repairs.
-  Warning: Do not connect Powerwall to alternating current carrying conductors. Powerwall must be wired to either an inverter or a DC combiner panel that is then wired to an inverter. No other wiring configuration may be used.
-  Warning: To protect Powerwall and its components from damage when transporting, handle with care. Do not impact, pull, drag, or step on Powerwall. Do not subject Powerwall to any strong force. To help prevent damage, leave Powerwall in its shipping packaging until it is ready to be installed.
-  Warning: Do not insert foreign objects into any part of Powerwall.
-  Warning: Do not expose Powerwall or its components to direct flame.

-  Warning: Do not install Powerwall near heating equipment.
-  Warning: Do not immerse Powerwall or its components in water or other fluids.
-  Caution: Do not use cleaning solvents to clean Powerwall, or expose Powerwall to flammable or harsh chemicals or vapors.
-  Caution: Do not use fluids, parts, or accessories other than those specified in this manual, including use of non-genuine Tesla parts or accessories, or parts or accessories not purchased directly from Tesla or a Tesla-certified party.
-  Caution: Do not place Powerwall in a storage condition for more than one (1) month, or permit the electrical feed on the Powerwall to be severed for more than one (1) month, without placing Powerwall into a storage condition in accordance with Tesla's storage specifications.
-  Caution: Do not paint any part of Powerwall, including any internal or external components such as the exterior shell or casing.
-  Caution: Do not connect Powerwall directly to photovoltaic (PV) solar wiring.
-  Caution: When installing Powerwall in a garage or near vehicles, keep it out of the driving path. If possible, install the Powerwall on a side wall and/or above the height of vehicle bumpers.
-  Caution: Powerwall has a pre-installed aesthetic front cover. To prevent damage, keep Powerwall flat on its back until just before lifting Powerwall onto the wall mount bracket.

ENVIRONMENTAL CONDITIONS

-  Warning: Install Powerwall at a height that prevents damage from flooding.
-  Warning: Operating or storing Powerwall in temperatures outside its specified range might cause damage to Powerwall.
-  Warning: Do not expose the Powerwall to ambient temperatures above 60°C (140°F) or below -30°C (-22°F).
-  Caution: Ensure that no water sources are above or near Powerwall, including downspouts, sprinklers, or faucets.
-  Caution: Ensure that snow does not accumulate on top of or around Powerwall.

ELECTRICAL SPECIFICATIONS

| | |
|---|----------------|
| Charge and Discharge Power, Peak and Continuous | 3.3 kW |
| Energy ¹ | 6.4 kWh |
| DC Voltage | 350 V to 450 V |
| DC Current, Maximum and Continuous | 9.5 A |
| Round Trip DC Efficiency (Beginning of Life) ¹ | 92.5% |

ENVIRONMENTAL SPECIFICATIONS

| | |
|--|---|
| Operating Temperature ² | -20 °C to 50 °C (-4 °F to 122 °F) |
| Humidity | <95% non-condensing |
| Storage <=12 months | State of Energy (SoE): 25% initial |
| Noise (at Full Thermal System Performance) | <49 dBA front, and <55 dBA top, at a distance of 1m |
| Maximum Altitude | 3000 m (9843 ft) |
| Ingress Rating | IP35 and NEMA 3R (Powerwall) IP67 (battery Pod only) |
| Impact Rating | IK09 |
| Seismic Rating | AC156 and IEEE 693-2005 |

MECHANICAL SPECIFICATIONS

| | |
|--------|-------------------|
| Length | 1302 mm (51.3 in) |
| Width | 862 mm (34 in) |
| Depth | 183 mm (7.2 in) |
| Weight | 97 kg (214 lbs) |

¹ Values provided for 25 °C, 2 kW charge/discharge power, 400 V to 450 V DC bus.

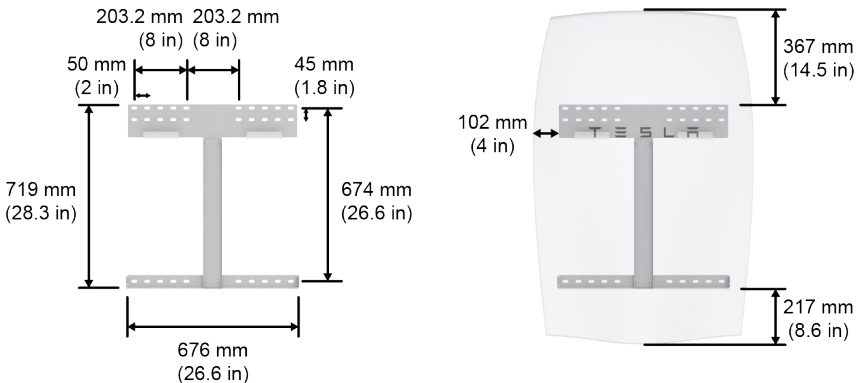
² Performance might be de-rated in extreme ambient temperatures.

PHYSICAL REQUIREMENTS

Powerwall must be installed on an upright wall that can support 115 kg (254 lbs), the maximum weight of Powerwall and its installation packaging. The wall must be flush and extend to all edges of the system, allowing no access to the back of the unit once it is mounted. Do not mount Powerwall horizontally or upside down. Do not mount Powerwall on a wall that is tilted backward or forward more than 5 degrees.

Powerwall requires adequate clearance for installation, cabling, and airflow. Do not mount any other objects within the clearance space illustrated below, except those explicitly required by the installation (for example, conduit or DC disconnect depending on local installation codes). Do not install anything between Powerwall and the ceiling.

Note: Powerwall has a pump and fan that produce a gentle hum during operation, comparable to a typical refrigerator or dishwasher. This intermittent noise is normal and enables Powerwall to maintain ideal battery temperature. The noise level depends on the ambient temperature and the power level of operation. Choose the installation location of the Powerwall with due consideration for the owner's sensitivity to noise level.



TEMPERATURE REQUIREMENTS

Powerwall is capable of charging and discharging within the full ambient temperature range listed in the Specifications section. At the high and low ends of the temperature range, Powerwall may limit charge or discharge power based on battery cell temperature to improve battery lifespan.

Installation in full sun raises the temperature inside the enclosure above ambient temperature. This temperature rise is not a safety risk, but can impact the performance of the batteries. Installation in full sun is not recommended to optimize the use of Powerwall.

Do not install Powerwall in a room with sustained elevated temperatures, such as a boiler room. Also do not install Powerwall in a location with sustained low temperatures. The average ambient temperature over the system's life should be between 0°C-30°C (32°F-86 °F).

INSTALLATION REQUIREMENTS

Powerwall must be installed with a compatible inverter. Wiring and conduit (where necessary) must be provided by the installer. For a list of compatible inverters, go to:

www.teslamotors.com/support/powerwall

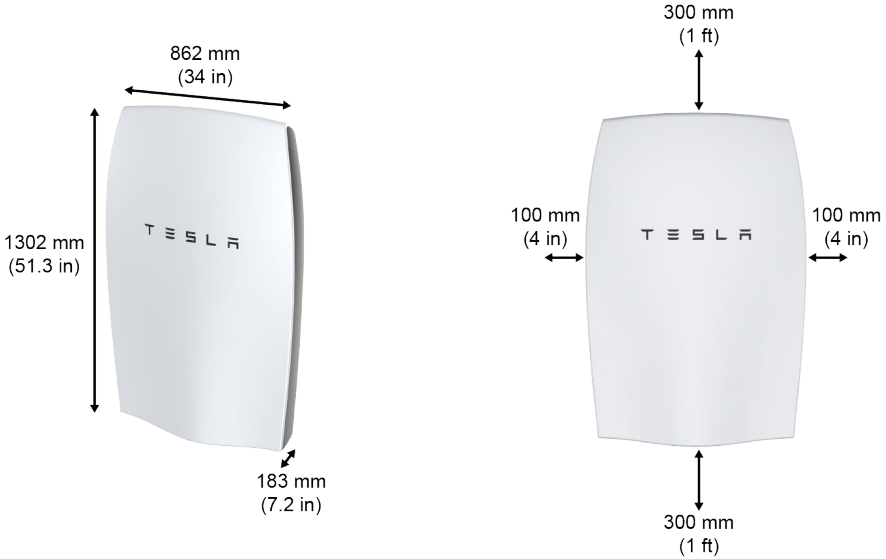
Site Requirements

DC disconnect requirements between Powerwall and the inverter are subject to local codes. Ensure that the installation meets local DC disconnect requirements. Check the inverter installation manual to understand site connections and overcurrent protection.

All U.S. and Canada electrical installations must be done in accordance with local codes and the National Electric Code (NEC) ANSI/NFPA 70 or the Canadian Electrical Code CSA C22.1.

All installations must conform to the laws, regulations, codes, and standards applicable in the jurisdiction of installation.

MINIMUM SPACE REQUIREMENTS



| | |
|---------------------------------|-------------------|
| Total ceiling height | 2000 mm (6.5 ft) |
| Clearance above | 300 mm (1 ft) |
| Clearance below | 300 mm (1 ft) |
| Lateral wall space | 1070 mm (42 in) |
| Clearance from each side | 100 mm (4 in) |
| Depth of workspace ³ | 762 mm (30 in) |

³ Depth requirement is typically determined by working clearances required in the local installation code.

Step-by-Step Installation Instructions

Powerwall 1067000-00-E or 1067000-01-E ("Powerwall E") contains several product and packaging upgrades intended to improve the installer (and therefore customer) experience. These updates are described in more detail throughout this chapter:

- Simpler packaging that only uses 8 screws in the lid and pallet
- Simpler installation process
- New splash cover with a larger wiring opening for ease of wire routing
- Splash cover windows that allow the installer to set switches with the cover in place
- Ten feet of unified cable that contains ground, 400 VDC power, and all communications wires, already wired to the Powerwall circuit board

 **Caution:** Powerwall must be installed by a Tesla Certified Installer.

[STEP 1 - PLAN THE INSTALLATION SITE](#)

[STEP 2 - REMOVE THE PALLET](#)

[STEP 3 - INSTALL THE WALL MOUNT BRACKET](#)

[STEP 4 - MOUNT POWERWALL ON THE WALL](#)

[STEP 5 - REMOVE THE PACKAGING](#)

[STEP 6 - SET THE COMMUNICATION SWITCHES](#)

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[STEP 8 - CONNECT DUAL POWERWALLS TOGETHER](#)

[STEP 9 - FEED WIRES THROUGH THE CONDUIT PLATE OR CABLE GLAND](#)

[STEP 10 - CONNECT POWERWALL TO THE INVERTER](#)

[STEP 11 - ATTACH THE SIDE COVERS](#)

[STEP 12 - ATTACH THE BOTTOM COVER](#)

[STEP 13 - REPACK THE SHIPPING BOX](#)

[WIRING REFERENCE](#)

REQUIRED TOOLS

- Wall mount bracket fasteners (as described in [Step 3](#))
- Drill and a drill bit suitable for drilling pilot holes in the desired mounting surface
- Socket wrench
- 10 mm socket adapter (for covers and wall mount bracket side tabs)
- Large flathead screwdriver (for ground lug)
- Optional: small flathead screwdriver (for wiring terminal tabs)
- T20 Torx (for splash cover, pallet screws, and screws fastening box sides to box frame)
- T30 Torx (for packaging L-bracket and conduit/gland plate)
- Torque wrench
- Stud finder (for wood installations)
- Level tool
- Painter's tape and/or pencil
- Flashlight
- Wire stripper and wiring (as described in the [Wiring Reference](#))
- Conduit fitting or cable gland (as appropriate)
- Lift tool or adequate personnel trained and capable of lifting 115 kg (254 lb) from ground level to approximately chest height

 **Warning:** Powerwall is heavy and challenging to lift. Lift equipment is recommended.

To prevent injury, wear work boots (preferably steel-toed), long pants, safety glasses, and gloves.

STEP 1 - PLAN THE INSTALLATION SITE

Powerwall E is now shipped with 10 feet of unified, pre-wired cable for all power, ground, and communication wires. While this significantly simplifies installation, it also requires advance planning of component placement. As a general rule, plan for about 8.5 feet (2.6 meters) of usable cable length between Powerwall and the inverter, to allow enough ease for wiring connections. If the distance to the inverter exceeds 8.5 feet, plan to use a combiner box to extend the wiring.

Note: Installers are expected to use the pre-wired cable at all times unless approved by Tesla in advance.

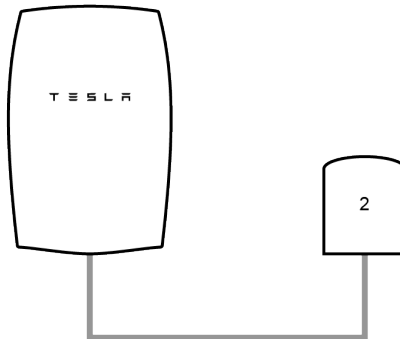
1. Make sure the proposed Powerwall location allows clearance on all sides as shown in [Site Requirements](#).
2. Measure the distance from the inverter to each proposed Powerwall location.
3. Decide whether a combiner box is needed, either for long distances to the inverter or for a dual-Powerwall installation.
4. Decide whether you are using conduit for this installation. The pre-wired cable has a nominal outer diameter of 15mm. Calculate conduit size based on conduit fill needs and local code requirements.

Note: If using conduit for a dual Powerwall installation, an adapter may be required between the 3/4-in hole in the Powerwall conduit plate and the desired conduit size.

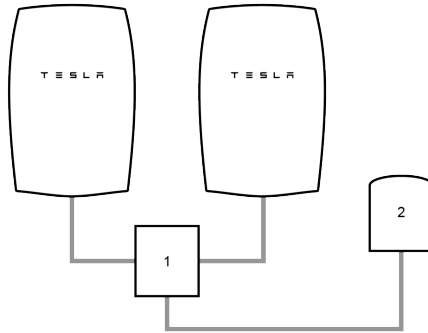
Sample layouts for single or dual Powerwall installations are shown below.

| | |
|---|--------------|
| 1 | Combiner box |
| 2 | Inverter |

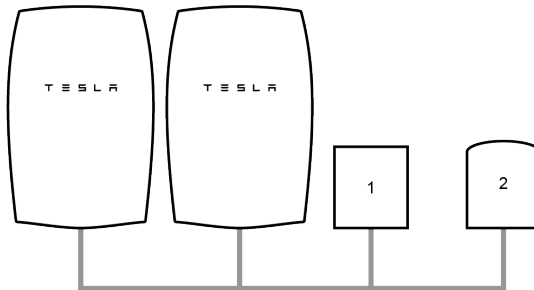
Single Powerwall:



Dual Powerwall, symmetrical connection:



Dual Powerwall, sequential connection:



STEP 2 - REMOVE THE PALLET

Note: Two people are needed for this procedure.

Note: Powerwall E packaging has fewer screws, in different locations, than Powerwall B and C packaging. Powerwall E also no longer requires removal and replacement of the lid before mounting Powerwall on the wall. Read through this section to note the new steps.

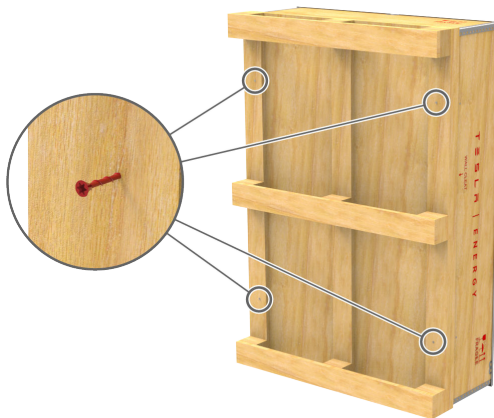
1. Lay the box flat on the ground with the pallet side down. Use the Powerwall image printed on the lid to note which end of the box is the top. The Powerwall inside is in the same orientation.



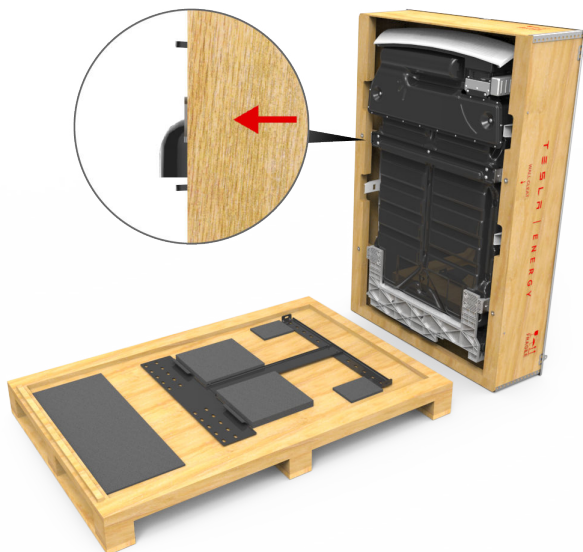
2. With one hand on the front cover and one hand under the pallet towards the top corner, both installers carefully tilt the box up onto its bottom end so that the Powerwall is standing with the correct end upright. Ensure the box is in a stable location, such as against a wall, where it will not be bumped or tip over.

 Caution: Never leave Powerwall unattended while it is in a standing position.

3. Use a Torx T20 to remove 4 screws from the bottom of the pallet while it is standing up.



4. Lay the pallet on the floor. The mounting cleat on the back of Powerwall should now be visible, and extend past the edge of the box for easy installation.



5. Verify that the box contains the following items:
 - Powerwall
 - Powerwall Owner's Manual (in the shipping pouch on the outside of the box, to be given to the owner)
 - Wall mount bracket (wall mounting fasteners are not included)

All other parts are contained inside the box lid and are checked in a later step. If any of the parts listed in this step are damaged or missing, contact Tesla Service. If any damage is detected, address high voltage and other safety risks immediately. Do not continue the installation procedure.

6. Remove the wall mount bracket from the inside face of the pallet.

STEP 3 - INSTALL THE WALL MOUNT BRACKET

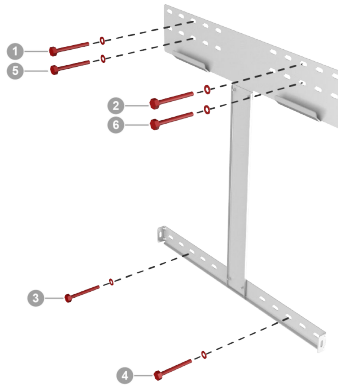
1. Determine the appropriate wall mount bracket fasteners for the site.

Note: The details below are only guidance and are not guaranteed to be applicable. Consult local building codes and/or a structural engineer to ensure the use of appropriate fasteners.

- Minimum of 6 fasteners, stainless steel, diameter 10 mm (3/8 in)
 - Fastener head clearance for all positions but two bottom outer holes: 18 mm (11/16 in)
 - Fastener head clearance for bottom two holes at 600 mm (24 in) spacing: 8 mm (5/16 in)
 - Washers between fastener heads and wall mount bracket are recommended
2. Using the wall mount bracket as a guide, measure the proposed location for Powerwall. The bracket must be bolted into studs or a suitable load-bearing wall.
 3. If mounting into wood, use a stud finder to locate and mark the center of the wooden studs. It is important to install each fastener as close to the middle of each stud as possible.
 4. Position the thicker part of the bracket at the top, so that the flat side is flush with the wall. Use the bracket as a guide to mark the location of the holes on the wall. Space the holes 200, 300, 400, 500, or 600 mm (8, 12, 16, 20, or 24 in) apart.

Note: Use a level tool to ensure that the bracket is level.

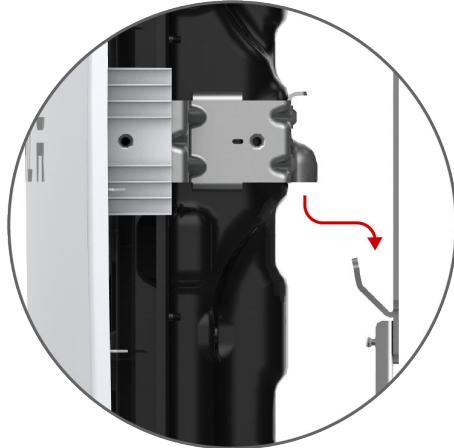
5. Drill the pilot holes to attach the wall mount bracket to the wall.
6. Install at least four washers and fasteners into the top part of the bracket and two washers and fasteners into the bottom of the bracket. There must be at least one fastener in each of the six mounting hole rows. Install the fasteners in the order shown in the numbered image.



7. Verify that the bracket is firmly attached to the wall.
8. Mark the centerline and the outside edges of the mounting cleat with tape or pencil.
9. Refer to the marks printed on the box to identify the centerline of the box and the height of the mounting cleat, for easier alignment with the lip on the wall bracket.

STEP 4 - MOUNT POWERWALL ON THE WALL

1. With Powerwall still in its box and as level as possible, use an appropriate lifting tool to raise the box so that the mounting cleat is just above the lip on the wall mount bracket. Use the tape or pencil marks on the wall as visual guides.
2. Lower Powerwall so that the cleat on the back of Powerwall fits securely over the lip on the bracket.



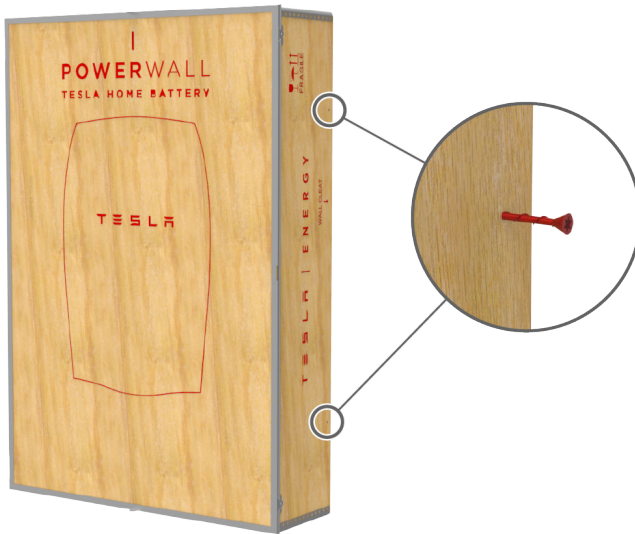
3. Ensure that Powerwall is centered on the bracket. When properly centered, Powerwall sits between the two protruding tabs on the bottom part of the bracket.



STEP 5 - REMOVE THE PACKAGING

Note: This step removes the rest of the packaging from the wall-mounted Powerwall without damaging its cover. To perform this step safely, it requires either two people, or one person with a lift tool carefully supporting the box lid.

1. First person: Hold the box in place from the bottom edge, to prevent the box from slipping and damaging Powerwall's front cover.
2. Second person: Use a T20 Torx to remove the 4 screws (two each side) holding the box sides to the the internal wood frame.



3. Being careful not to bump the box into the sides or edges of Powerwall's front cover, remove the box and carefully set it aside.

Note: Leave the protective sticker on the Powerwall front cover until installation is complete.

4. Remove the bag of hardware from the bottom corner of the internal U-shaped wood frame.
5. Verify that the box lid and hardware bag contain the following items:
 - Pre-wired cable, attached to Powerwall and secured to the U-shaped frame
 - Two side covers and one bottom cover (attached to the underside of the lid)
 - Five M6, 10 mm external hex bolts (for the wall mount bracket side tabs, bottom cover, and spare)
 - Spare M4, T20 bolt (if needed for splash cover)
 - M25 cable gland (optional)

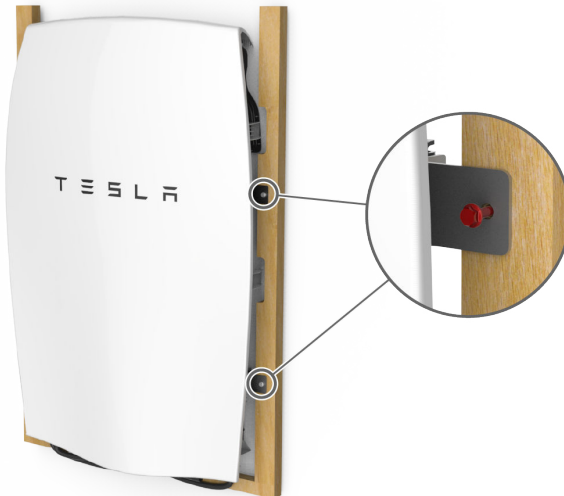
If any parts are damaged or missing, contact Tesla Service. If any damage is detected, address high voltage and other safety risks immediately. Do not continue the installation procedure.

Step-by-Step Installation Instructions

6. Unfasten the straps (strap locations circled in the image below) that hold the pre-wired cable to the bottom edge of the U-shaped frame.

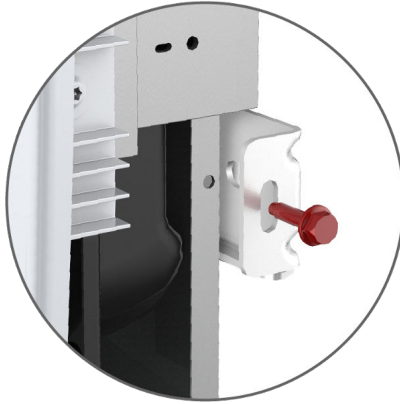


7. Use a 10 mm socket to remove the 4 bolts that hold the wood frame to Powerwall's side L-brackets. Carefully remove the wood frame.



8. Use a T30 Torx driver to remove the screws that hold the 4 metal L-brackets to Powerwall.

9. Use a 10 mm socket and the 2 provided M6 external hex bolts to secure Powerwall to the lower tabs of the wall mount bracket. Torque to 7 Nm (62 in-lbs).

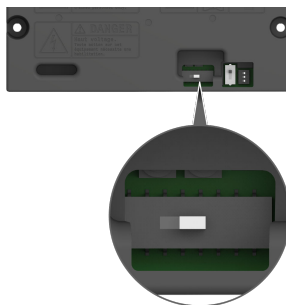


STEP 6 - SET THE COMMUNICATION SWITCHES

Communication switches are located on the right side of Powerwall's bottom edge. It may be necessary to use a small tool to set the switches. (As of Powerwall E, the splash cover no longer has to be removed to set the communication and address switches.)

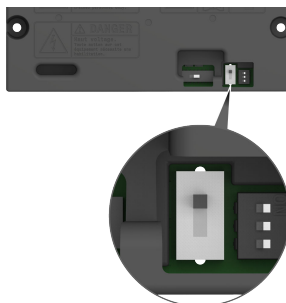
Note: The bottom edge of Powerwall is shadowed once it is mounted on the wall. A flashlight is useful for seeing detail inside the splash cover openings.

1. Set the CAN-Modbus switch according to the table below:



| Inverter | Protocol | Switch Position |
|-----------|----------------|-----------------|
| SMA | CAN | Left |
| SolarEdge | Modbus (RS485) | Right |

2. Set the termination switch based on whether the installation is single-unit or dual-unit, per the table below.



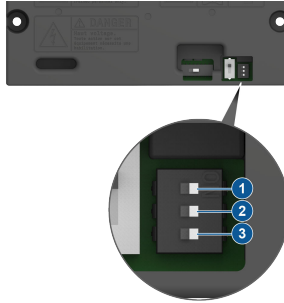
| Inverter and Unit Position | Termination | Switch Position |
|---|------------------------------|-----------------|
| SMA | Termination, NO Modbus bias | Top |
| SolarEdge, multi-unit other than the last | No termination | Middle |
| SolarEdge, single or last unit | Termination WITH Modbus bias | Bottom |

STEP 7 - SET THE ADDRESS SWITCHES

The DIP switch block has three white pins numbered “1”, “2”, and “3” from top to bottom with a value of ‘1’ to the left and ‘0’ to the right. Use these switches to set the Powerwall address through the opening in the splash cover.

Set the switches according to each Powerwall’s position, per the table below. Set a single Powerwall using Powerwall 0 settings.

Note: Always check with the inverter partner for inverter abilities and instructions before connecting dual Powerwalls.



| Address Switches | 1st Powerwall | 2nd Powerwall |
|------------------|---------------|---------------|
| Switch 1 | Right | Left |
| Switch 2 | Right | Right |
| Switch 3 | Right | Right |

These switch settings create the addresses below for each unit. SolarEdge inverters display this address on the screen.

| Inverter | 1st Powerwall Address (Offset 0) | 2nd Powerwall Address (Offset 1) |
|--------------------|----------------------------------|----------------------------------|
| SolarEdge (Modbus) | 24 | 25 |
| SMA (CAN) | 80 | 81 |

STEP 8 - CONNECT DUAL POWERWALLS TOGETHER

If the site will have dual Powerwalls, mount both Powerwalls and then follow these instructions for wiring. If the site has only one Powerwall, skip to [Step 9](#).

Note: Ensure that the dual Powerwall installation meets local requirements for DC disconnects and correctly rated overcurrent protection.

Note: Always check with the inverter partner for inverter abilities and instructions before connecting dual Powerwalls.

⚠ Warning: Before beginning the wiring portion of the installation, verify that the inverter is powered off.

Note: When the splash cover is removed, an Enable circuit disables the internal electronics of Powerwall. Refer to the illustration in the Wiring Reference for the location of the Enable buttons.

⚠ Warning: Ensure the Enable buttons are not pressed by any wiring.

⚠ Warning: The Enable buttons only disable power from Powerwall. They do not disable power from the inverter.

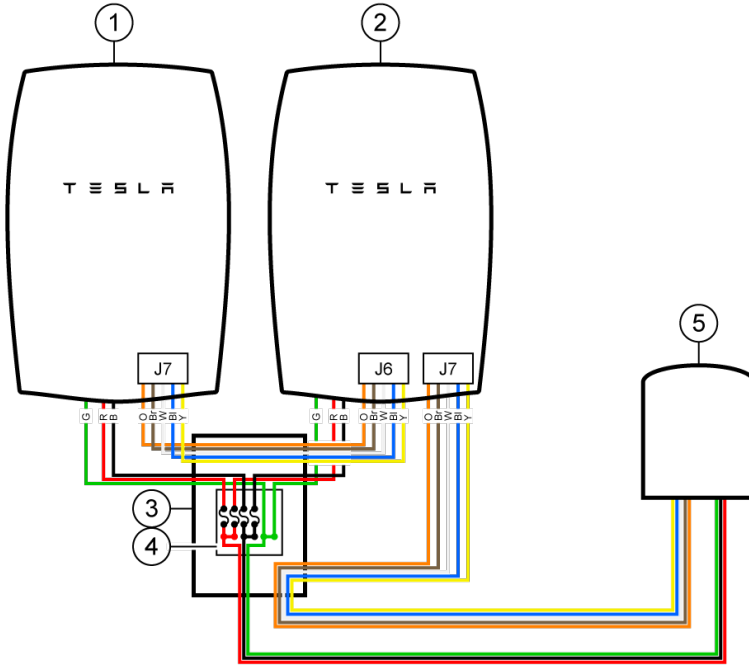
1. Turn off power to the relevant area at the circuit breaker panel.
2. Turn off the inverter. No wires should be connecting either Powerwall to the inverter yet.
3. Open the DC disconnect switch (if applicable for the installation).
4. Use a T20 Torx driver to remove the two splash cover screws.
5. Carefully remove the splash cover on each Powerwall. Ensure that nothing is caught or bent. Set the screws and cover aside for reassembly after the wiring is complete.



⚠ Warning: Use a multimeter to ensure no voltage is present on the terminals of the Powerwall circuit board.

6. Before fitting any wires, practice removing and re-fitting the splash cover to notice the click of the Enable buttons engaging. Push in both sides of the cover evenly while aligning the cover with the mounting holes.
7. Verify that the communication and address switch settings for each Powerwall are accurate as described in [Step 6](#) and [Step 7](#). Set the address of the first Powerwall (closest to the inverter) to Offset 0 and the address of the second Powerwall (farthest from the inverter) to Offset 1.

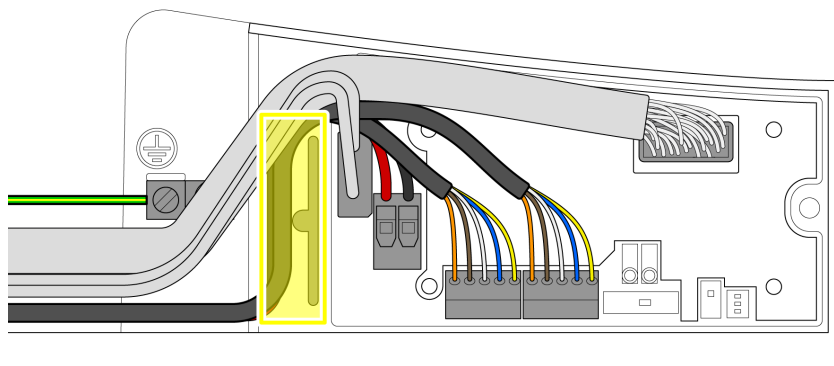
Step-by-Step Installation Instructions



| Image Symbol | Meaning | Value |
|--------------|----------------|-----------------------|
| 1 | 2nd Powerwall | n/a |
| 2 | 1st Powerwall | n/a |
| 3 | Combiner Box | n/a |
| 4 | Fuse holders | Four 12-15A fuses |
| 5 | Inverter | n/a |
| G | Ground/earth | Green or Green/Yellow |
| R | 400 VDC + | Red |
| B | 400 VDC - | Black |
| O | Enable | Orange |
| Br | Logic Power + | Brown |
| W | Logic Return - | White |
| Bl | Comm Hi + | Blue |
| Y | Comm Lo - | Yellow |

Step-by-Step Installation Instructions

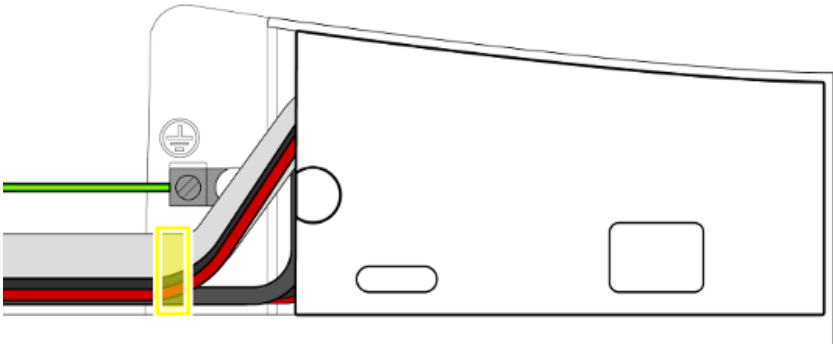
8. Install a combiner box below or near the Powerwalls that contains four 12-15A fuses (15A recommended for high ambient temperatures).
 - ⚠ Warning: Dual Powerwall installations require fuses to be installed on all four DC power wires between the inverter and the Powerwalls.
9. Connect communications wiring:
 - a. Connect the 1st Powerwall communications, enable, and 12V logic wiring from its pre-wired cable (the 5 wires coming from the J7 connector) to the inverter.
 - b. Connect the 2nd Powerwall communications, enable, and 12V logic wiring from its pre-wired cable to the J6 connector in the 1st Powerwall (see the circuit board image in the [Wiring Reference](#)). Powerwall allows daisy chaining of low voltage and communication cables. These can be run through the combiner box for cleaner wire handling, but it is not required.
 - ⚠ Caution: Do not splice wiring inside Powerwall.
10. Connect power wiring:
 - a. Connect the positive and negative DC power wires from each Powerwall's pre-wired cable to their own fuses in the combiner box. Fuse each DC wire coming from a Powerwall before power wiring is combined into the single pair of DC wires to the inverter.
 - b. Connect the ground wire from each Powerwall's pre-wired cable to the ground bar in the combiner box. Ensure that all components in the system are sufficiently grounded to earth.
 - c. Run positive and negative DC power wires from the inverter into the combiner box. Connect them to the terminal blocks where the Powerwall DC wires have been fused.
 - d. Run the ground wire from the inverter to the ground bar in the combiner box.
11. Route all wiring to allow splash covers and bottom covers to fit correctly:
 - a. In each Powerwall, route all wires toward the top left of the circuit board to keep them away from the Enable buttons. When the splash cover is removed, the Enable buttons disable power to the unit for service.
 - ⚠ Warning: Misrouted wiring that keeps the buttons pressed in when the cover is off can create a risk of electric shock. Ensure that the Enable buttons are not pressed by any wiring.
 - b. Route all wires into the channel to the left of the splash cover mounting hole.



- c. Align the splash cover with the circuit board.
- d. Ensure that all wires route out of the splash cover through its side opening, and that wires are not pinched or kinked.

Step-by-Step Installation Instructions

- e. Ensure that the Enable buttons are pressed when the cover is attached. Listen for the click of the buttons being pressed.
 - f. Use a T20 Torx driver to attach the splash cover with two M4 screws. Torque to 3 Nm (27 in-lbs).
 - g. All pre-installed wiring is secured with an arrowhead zip tie to the metal bracket. Use a second zip tie to secure the dual-Powerwall field wiring to the existing wiring in the same location.
- ⚠ Caution:** To ensure that wires do not interfere with fitting the splash cover or bottom cover, both factory wires and field wires must follow the route shown in images and be fastened in place with zip ties. Improper cover installation can nullify the ingress rating for Powerwall.



STEP 9 - FEED WIRES THROUGH THE CONDUIT PLATE OR CABLE GLAND

Depending on regional requirements, Powerwall can be installed either through conduit or through a cable gland. Follow local codes to determine which is appropriate.

The conduit plate hole is centered on the bottom edge of Powerwall and has a 28.2 mm (1.11 in) diameter. It supports 3/4" trade fittings, and PG-21 and M25 glands. The conduit plate has passed water ingress testing with the single pre-installed cable, or with multiple individual cables squeezed together into a single gland. All fittings other than the conduit plate and cable gland are provided by the installer.

If using conduit for a dual Powerwall installation, an adapter might be required between the 3/4" Powerwall conduit plate and the desired conduit size. If not using a snap-in style cable gland, follow the following steps.

1. Use a T30 Torx driver to remove the conduit plate.



2. For conduit configurations, feed the wires through the conduit lock nut, the conduit plate, and the conduit connector, then into the conduit. Make sure that wires are not frayed.
3. For cable gland configurations, feed the wires through the gland. Make sure that wires are not frayed.
4. Tighten the gland or conduit connector to the conduit plate.
5. Reattach the conduit plate to Powerwall and torque to 7 Nm (62 in-lbs).

STEP 10 - CONNECT POWERWALL TO THE INVERTER

⚠ Warning: Before beginning the wiring portion of the installation, verify that the inverter is powered off.

Run the wires between Powerwall and the inverter as described in the inverter manual. Follow local electrical installation codes for wire installation.

All wires in the unified wiring harness are outdoor rated. However, if the inverter's terminals are too far apart from one another to easily connect the wires inside the inverter enclosure, and water ingress is a concern, the installer can use a breakout boot or a junction box for additional protection.

Note: Ensure that the installation meets local requirements for DC disconnects and correctly rated overcurrent protection.

The table below shows the names of Tesla wiring terminals and the corresponding terminal names on the supported inverters, along with wire colors for the connections.

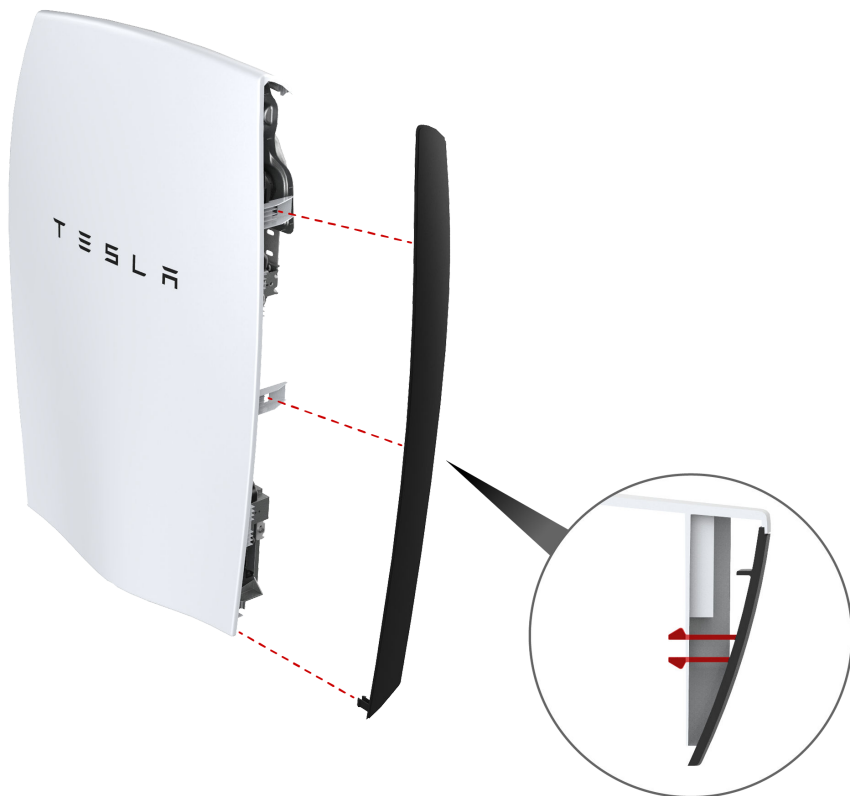
| Tesla Terminal Name | Wire Color | SMA Terminal Name | SolarEdge Terminal Name |
|---------------------|-----------------------|-------------------------------|--|
| Ground | Green or Green/Yellow | (Connect to local ground) | (Connect to local ground or inverter ground) |
| DC Power + | Red | (Battery + SUNCLIX connector) | BAT IN DC + (or MC4 + connector) |
| DC Power - | Black | (Battery - SUNCLIX connector) | BAT IN DC - (or MC4 - connector) |
| Enable | Orange | B: Enable | En: Enable |
| Logic Power (+) | Brown | F: +12V | V+: +12V |
| Logic Return (-) | White | C: GND and shielding | Battery Thermal - |
| Comm Hi (+) | Blue | E: CAN H | A+ (RS485) |
| Comm Lo (-) | Yellow | D: CAN L | B- (RS485) |

For detailed wiring diagrams and switch setting illustrations, see the Tesla Powerwall Quick Reference Guide.

STEP 11 - ATTACH THE SIDE COVERS

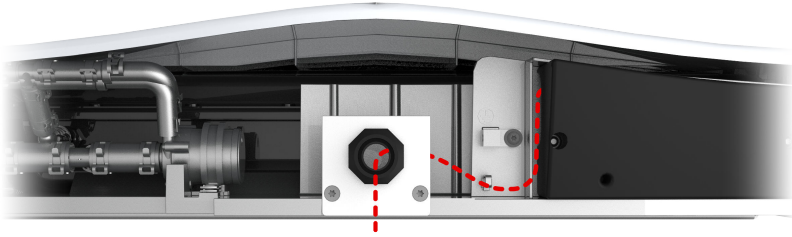
⚠ Caution: Failure to install the side covers using the proper steps might result in permanent damage to the covers.

1. Remove the side covers from the shipping box.
2. Position the first side cover to the side of Powerwall that matches its curve.
3. Angle the back edge (side closest to the wall) in toward Powerwall.
4. Insert the top edge of the cover, then push in to fasten the top spring clip.
5. Fasten the bottom spring clip second, for easiest fit.
6. Fasten the middle spring clip. Verify that the entire length of the side cover is tucked completely under the edge of the front cover.
7. Repeat the installation steps on the opposite side for the other side cover.



STEP 12 - ATTACH THE BOTTOM COVER

1. Line up the bottom cover with the bottom of Powerwall, between the side covers.
2. Tuck the back edge of the bottom cover (closest to the wall) under the metal edge of the Powerwall body.
3. Route the wires from the conduit plate or gland back (toward the wall) below the ground/earth lug, then forward again to match the internal wiring harness path under the splash cover into the circuit board. Verify that the wires are not pinched or kinked by the internal edge of the bottom cover.



4. Close the bottom cover carefully over the wiring. Verify that the edge of the bottom cover is tucked completely under the lip of the front cover.
5. Use a 10 mm hex socket to attach the bottom cover with an M6 screw on each side. Torque to 3 Nm (27 in-lbs).

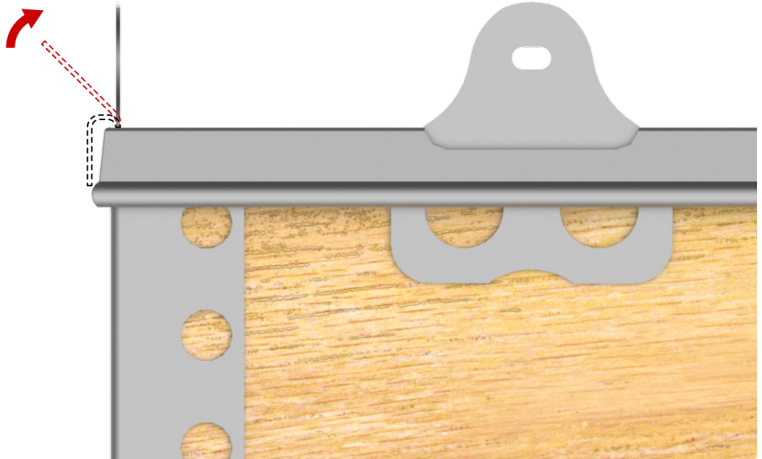


6. Once installation is complete, gently peel the protective sticker from Powerwall's front cover.

STEP 13 - REPACK THE SHIPPING BOX

All Powerwall packing material is recyclable.

1. Use a screwdriver to bend the tabs on the lid up.



2. Remove the top of the lid. Collapse the sides of the box.
3. Return the shipping box to the Tesla Authorized Reseller, or recycle onsite as appropriate.


WIRING REFERENCE

Powerwall is pre-wired in the factory with a combined cable that allows 8.5 feet of length between the Powerwall conduit plate and the cable end. This cable connects to the Powerwall circuit board under the splash cover as described below. This table and diagram are for reference only, in case of damaged wiring or other maintenance.

Note: Installers are expected to use the pre-wired cable at all times unless approved by Tesla in advance.

Refer to local building and electrical codes when selecting appropriate wire gauge and length. Cut the ends of the wires to have clean, even ends. Strip the ends of the wires enough to make solid contact in the connector, while ensuring that no bare wire extends beyond the connector edge.

To ensure that installation is as simple as possible, select flexible wires with the smallest overall approved diameter. The wiring compartment is relatively small and the use of small diameter wires significantly speeds and simplifies the installation process.

 **Caution:** Do not add extra wiring to the left of the conduit or gland entry. Additional wiring may interfere with water ingress and high voltage shielding to the pump.

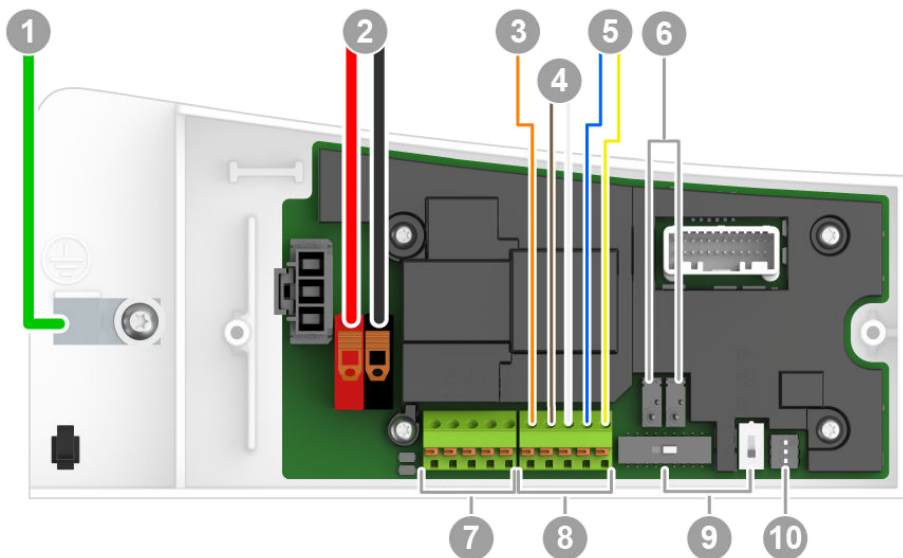
Note: Use shielded twisted pair communication wire and ground the shielding at one end. This reduces the possibility of noise on the communication cable. Do not ground the shield at both ends, which would create a ground loop.


Note: The 450 VDC cable is run in close proximity to the low voltage and communication cabling. Therefore, ensure that all cables to Powerwall are:

- Wet or oil rated
- At least 600 V insulation class

If low voltage and communication wires do not already meet these requirements, 600V insulation class heat shrink can be added around the bundle during installation.

Step-by-Step Installation Instructions







| | Wire Type | Port Label | Wire Gauge | Strip Length |
|----|---|---|---|--------------|
| 1 | Ground/earth (green or green/ yellow) |  | 2.5-6 mm ² (14-10 AWG), 60 °C | 8 to 12 mm |
| 2 | DC power + (red) DC power - (black) | + tab - tab | 2.5-6 mm ² (14-10 AWG), 60 °C | 12 to 16 mm |
| 3 | Enable line (orange) | ENABLE | 0.2-1 mm ² (24-18 AWG), 60 °C | 7 to 9 mm |
| 4 | Logic power (brown) Logic return (white) | LOGIC+ LOGIC- | 0.2-1 mm ² (24-18 AWG), 60 °C | 7 to 9 mm |
| 5 | Positive communication (blue) Negative communication (yellow) | COM HI COM LO | 0.2-1 mm ² (24-18 AWG), 60 °C | 7 to 9 mm |
| 6 | Enable buttons (disable power when splash cover is off) | | | |
| 7 | Output connector for multiple units (J6) | | | |
| 8 | Primary connector (J7) | | | |
| 9 | Communication switches | | | |
| 10 | Address switches | | | |

Note: Powerwall C and Powerwall E do not require separate wiring for thermal power.

NORMAL OPERATION

During normal operation, Powerwall is completely controlled by the inverter. If Powerwall and the inverter are installed correctly, the inverter can turn on Powerwall, begin communications, then begin to process power commands. See the inverter manual for further configuration instructions.

-  Warning: Do not operate Powerwall unless all covers are in place.
-  Warning: Do not disconnect anything from or add anything to Powerwall.
-  Caution: Do not try to communicate with Powerwall using third party tools or diagnostics between Powerwall and the inverter.
-  Caution: Do not lean on, stack anything on top of, or hang anything from Powerwall or the conduit.

POWERWALL CARE

Keep the top edge of Powerwall clear of leaves and other debris if installed outside, to maintain optimal airflow.

To clean Powerwall, use a soft, lint-free cloth. The cloth can be dampened with only water if needed.

-  Caution: Do not use cleaning solvents to clean Powerwall.

TROUBLESHOOTING

If Powerwall is not working correctly, perform the following steps. Powerwall is not user serviceable and must be repaired by a Tesla Certified Installer who has been trained by Tesla.

- Check the screen or portal of the inverter to look for fault codes and descriptions.
- If Powerwall refuses to operate: check the temperature in the room and increase ventilation if needed.
- If the inverter and Powerwall are both unresponsive:
 1. Switch off the inverter (if it has a switch).
 2. Switch off the AC and DC breaker(s) (if applicable) for the inverter.
 3. Wait for at least one minute.
 4. Turn AC and DC breakers back on (if applicable).
 5. Turn the inverter back on.
- If a brownout or blackout is experienced during backup: reduce the loads and check that the breakers have not opened.
- If it is not possible to communicate with the inverter through its portal: ensure that the home Internet connection is working.
- Follow the troubleshooting steps outlined in the inverter manual for both Powerwall and the overall system.

If the issue persists, contact the Tesla Authorized Reseller who originally sold the Powerwall.

What to Do in Case of an Emergency

In the event of any threat to health or safety, always begin with these two steps before addressing the other suggestions below:

1. Immediately contact the fire department or other relevant emergency response team.
2. Notify all people who might be affected and ensure that they are able to evacuate the area.

⚠ Warning: Only perform the suggested actions below if it is safe to do so.

- In case of a fire:
 - Switch off the inverter (if it has a switch), then the AC breaker to the inverter.
 - If a disconnect exists, switch off the DC disconnect on the inverter.
 - Acceptable fire extinguisher types are water, CO₂, and ABC. Avoid type D (flammable metal) extinguishers.
- In case of flooding:
 - Stay out of the water if any part of the battery, inverter, or wiring is submerged.
 - Switch off the inverter (if it has a switch), then the AC breaker to the inverter.
 - If a disconnect exists, switch off the DC disconnect on the inverter.
 - If possible, protect the system by finding and stopping the source of the water, and pumping water away.
 - Let the area dry completely before use.
- If there is an unusual smell or smoke:
 - Switch off the inverter (if it has a switch), then the AC breaker to the inverter.
 - If a disconnect exists, switch off the DC disconnect on the inverter.
 - Ensure nothing is in contact with Powerwall.
 - Ventilate the room.
- If Powerwall is leaking coolant:
 - ⚠ Warning:** According to the U.S. Environmental Protection Agency, coolant can be absorbed through the skin and cause damage to internal organs. Ensure that it does not touch or enter any part of the body including, but not limited to, skin, eyes, and mouth.
 - Switch off the inverter (if it has a switch), then the AC breaker to the inverter.
 - If a disconnect exists, switch off the DC disconnect on the inverter.
 - Ventilate the area.

When cleaning up spilled coolant:

- Wear safety goggles, rubber gloves, pants, a long sleeved shirt, and fully closed shoes.
 - Avoid further coolant spill by putting a bucket under the leak. Powerwall holds up to 1.6 L (1.69 qt) of coolant.
 - Pour cat litter, sawdust, or another absorbent material on the spill immediately. Allow the material to absorb as much of the coolant as possible.
 - Use paper towels to collect the material that was used and discard the soiled paper towels in a sealed plastic bag. Place the sealed plastic bag into the garbage.
 - Clean up anything that remains using soap and warm water.
- If Powerwall is making unusual noises:
 - Switch off the inverter (if it has a switch), then the AC breaker to the inverter.
 - If a disconnect exists, switch off the DC disconnect on the inverter.
 - Ensure that nothing is in the vent on top of Powerwall or in the fan.

In all cases, once the situation is stable, contact the Tesla Authorized Reseller who sold the Powerwall.

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