



Gen 3 Wall Connector Manual

48A Single Phase


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IMPORTANT SAFETY INFORMATION

Read all instructions before using this product. Save these instructions. Wall Connector features built-in Type B RCD.

This manual contains important instructions for the Tesla Gen 3 Wall Connector that shall be followed during installation, operation, and maintenance. Please review all warnings and cautions before installing and using the Wall Connector.


 **WARNING:** When using electric products, basic precautions should always be followed, including the following.


INSTRUCTIONS RELATING TO RISK OF FIRE OR ELECTRIC SHOCK


 **WARNING:** Do not install or use the Wall Connector near flammable, explosive, harsh, or combustible materials, chemicals, or vapors.

 **WARNING:** Turn off power at the circuit breaker before installing or cleaning the Wall Connector.


WARNINGS


 **WARNING:** This product can expose you to one or more chemicals that are known to the state of California to cause cancer.


 **WARNING:** This device should be supervised when used around children.

 **WARNING:** The Wall Connector must be grounded through a permanent wiring system or an equipment-grounded conductor.


 **WARNING:** Use the Wall Connector only within the specified operating parameters.

 **WARNING:** Never spray water or any other liquid directly at the wall mounted control box. Never spray any liquid onto the charge handle or submerge the charge handle in liquid. Store the charge handle in the dock to prevent unnecessary exposure to contamination or moisture.

 **WARNING:** Do not use the Wall Connector if it is defective, appears cracked, frayed, broken, or otherwise damaged, or fails to operate.





 **WARNING:** Do not use the Wall Connector if the flexible power cord or cable is frayed, broken, or otherwise damaged, or fails to operate.

 **WARNING:** Do not attempt to disassemble, repair, tamper with, or modify the Wall Connector. The Wall Connector is not user serviceable. Contact Tesla for any repairs or modification.

 **WARNING:** When transporting the Wall Connector, handle with care. Do not subject it to strong force or impact or pull, twist, tangle, drag, or step on the Wall Connector, to prevent damage to it or any components.



IMPORTANT SAFETY INFORMATION

-  **WARNING:** Do not touch the Wall Connector's end terminals with fingers or sharp metallic objects, such as wire, tools, or needles.
-  **WARNING:** Do not insert fingers or foreign objects into any part of the Wall Connector.
-  **WARNING:** Do not forcefully fold or apply pressure to any part of the Wall Connector or damage it with sharp objects.
-  **WARNING:** Use of the Wall Connector may affect or impair the operation of any medical or implantable electronic devices, such as an implantable cardiac pacemaker or an implantable cardioverter defibrillator. Check with your electronic device manufacturer concerning the effects that charging may have on such electronic devices before using the Wall Connector.

FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful Interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

15.21 - Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

15.105 (b) - This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different room that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

RF Exposure Information (MPE)

This device has been tested and meets applicable limits for Radio Frequency (RF) exposure. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body.

ISED Canada Compliance Statement

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.



IMPORTANT SAFETY INFORMATION

CAUTIONS



CAUTION: Do not use private power generators as a power source for charging.



CAUTION: Incorrect installation and testing of the Wall Connector could potentially damage the vehicle's battery, components, and/or the Wall Connector itself. Any resulting damage is excluded from the New Vehicle Limited Warranty and the Charging Equipment Limited Warranty.



CAUTION: Do not operate the Wall Connector in temperatures outside its operating range of -22° F to 122° F (-30° C to 50° C).



CAUTION: Wall Connector should only be installed by personnel who are trained and qualified to work on electrical systems.



CAUTION: Ensure that Wall Connector is within storage temperature when moving, transporting, or storing.



PRODUCT OVERVIEW

This manual applies to Wall Connectors identified by part number 1457768-**-**.

Product Specifications

Voltage and Wiring	Nominal 200-240 V AC single-phase
Current Output Range	12 - 48 amps
Terminal Blocks	12-4 AWG (3.5 - 25 mm ²), copper only
Supported Conduit Sizing	¾ in (21 mm) default, 1 in (27 mm) optional
Grounding Scheme	TN/TT
Frequency	50/60 Hz
Cable Length	7.3 m
Wall Connector Dimensions	Height: 13.6 in (345 mm) Width: 6.1 in (155 mm) Depth: 4.3 in (110 mm)
Wire Box Bracket Dimensions	Height: 9.8 in (250 mm) Width: 4.7 in (120 mm) Depth: 2.0 in (50 mm)
Weight (including wirebox)	10 lb. (4.5 kg)
Operating Temperature	-22°F to 122°F (-30°C to 50°C)
Storage Temperature	-40°F to 185°F (-40°C to 85°C)
Enclosure Rating	Type 3R
Ventilation	Not required
Means of Disconnect	External branch circuit breaker
Wi-Fi	2.4 GHz, 802.11b/g/n
Agency Approvals	cULus - E351001
	



PRODUCT OVERVIEW

Transportation and storage: Ensure that Wall Connector is within storage temperature when moving, transporting, or storing,



Circuit Breaker Rating / Maximum Output

Power Output

For maximum power output, install a standard double pole 60 amp circuit breaker. Wall Connector includes integrated GFCI protection -

Wall Connector incorporates automatic load management, which allows the max output to be customized to an existing power supply. If the electrical supply is unable to support the 60 amp configuration, select a lower amperage configuration.

Circuit breaker (amps)	Max output (amps)	Power output at 240 volts (kW)
60	48	11.5
50	40	9.6
40	32	7.6
30	24	5.7
20	16	3.8
15	12	2.8



NOTE: External disconnect switches are neither required nor recommended.



NOTE: Circuit breaker size is programmed during the commissioning process. See [Commissioning Procedure on page 29](#) for details.



NOTE: Some Tesla vehicles may draw less current than the max output. Actual charging rate depends on Wall Connector output and onboard charger in the vehicle.

Branch Circuit Conductors and Ground Wire

- If installing for less than maximum power, refer to local electrical code to select correct conductors and ground wire size that are suitable for the chosen circuit breaker.
- For maximum power, check temperature rating of circuit breaker used:
 - For 60°C rated circuit breaker, use minimum 4AWG, 90°C THWN-2-rated copper wire for conductors.
 - For 75°C rated circuit breaker, use minimum 6AWG, 90°C THWN-2-rated copper wire for conductors.
 - ,



NOTE: Upsize conductors if necessary.

- For sites with multiple Wall Connectors, the power sharing feature can enable the safe utilization of a single branch circuit. See single line examples in [Breaker and Branch Circuit Setup on page 33](#).
- COPPER WIRE TERMINATIONS ONLY for landing in Wall Connector wirebox terminals. Conductors can be stranded or solid.
- Hardwire branch circuits to disconnects or circuit breakers. Do **NOT** install cord-and-plug type connections.



PRODUCT OVERVIEW

- For outdoor installations, use watertight fittings when securing feeder wires to the wirebox.

Grounding Connections

Wall Connector must have a ground path back to the main equipment earthing point on site. Without a proper ground connection, the Wall Connector will fault during a ground assurance test. Equipment-grounding conductor must be run with the circuit conductors and connected to the equipment-grounding terminal in the wirebox. Install a ground (PE) wire sized according to local electrical code.



Using Wall Connector

1. Open the vehicle charge port by pressing the button on the charge handle, pressing on the charge port door, using the mobile app, using the vehicle touchscreen, or by pressing and holding the trunk button on the keyfob.
2. Insert the charge handle into the vehicle charge port.
3. Check the vehicle controls to verify charging.
4. To remove the charge handle from the vehicle, press and hold the button on the handle to unlock the charge port.



NOTE: The vehicle must be unlocked for the charge handle to be removable.



5. Remove the charge handle from the vehicle charge port.
6. Wrap the charge cable counter-clockwise around the Wall Connector and insert the charge handle into the holster.



PRODUCT OVERVIEW





PRODUCT OVERVIEW

Features

Connectivity

Wall Connector is equipped with Wi-Fi to communicate with local site routers, vehicles, mobile devices, other Wall Connectors, and other Tesla products.



Hosted Access Point

Wall Connector hosts a WPA2 password-secured, 2.4 GHz, 802.11 Wi-Fi access point network to facilitate commissioning and connecting to other devices.


A unique SSID Wi-Fi network name and WPA2 password for connecting to the Wall Connector are printed on a label at the rear of the main unit, as well as on the front cover of the Quickstart Guide included in the box.




Local Network

Connecting Wall Connector to a local Wi-Fi network enables it to receive over-the-air firmware updates, remote diagnostics access, and usage data tracking capability. A Wi-Fi connection is required for sites that utilize authentication, billing, and other property management features.

Wall Connector only supports WPA2/3-secured, 2.4 GHz, 802.11 infrastructure mode networks.

 **NOTE: Networks that are not password protected are not supported. The Wall Connector will not display non-password protected networks in the options list.** Open networks without a password are not supported and will not be recognized by the Wall Connector.

 **NOTE:** WPA enterprise will be supported in a future firmware update.



PRODUCT OVERVIEW



NOTE: Property management features will be enabled via future firmware updates.



Ground Fault Circuit Interruption

Integrated ground fault circuit interruption (GFCI) protection automatically detects a current mismatch between power delivery conductors that would indicate that current is flowing through the ground (PE) conductor.

If a ground fault occurs after 10 seconds of charging, Wall Connector will wait 15 minutes before automatically re-attempting to charge. Up to four attempts to charge will be made before user interaction is required.

If a residual current fault occurs within 10 seconds of charging, Wall Connector will lock out and user interaction is required to restore charging functionality.

Recommended interaction includes pressing the button on the charging handle, or removing the charging handle from the vehicle and reinserting it. If this does not resolve the issue, look for a ground fault issue such as water ingress.

Ground Assurance

Wall Connector continuously checks for the presence of a safe ground connection and automatically recovers from faults. Grounded assurance operates by injecting a small amount of current into the ground conductor in order to measure the impedance between line and ground. If high impedance is detected, the Wall Connector will lock out charging and display a fault code of two (2) red blinks. See [Fault Codes on page 39](#) for a full list of fault codes.

For ground assurance to operate on TN grids, one leg of the distribution transformer must be ground-bonded (Neutral). Ground bond should only occur at one location in a site's electrical system.

Wall Connector ground assurance may be adjusted in countries with TT or IT grid configurations and can be disabled in the commissioning procedure.

The Ground Monitor Interrupter feature monitors the Wall Connector ground connection. Select the correct option based on the installation's earthing system and earth impedance.

Depending on country, three options are available:

- **Enable:** Ground connection will be monitored and a high detected ground resistance will disable the Wall Connector. This is the preferred setting to provide protection, and should be selected where ground connection is expected to be strong (as in the case on TN networks and most TT networks), and where required by regulation.
- **Monitor:** Ground connection will be monitored but a high detected ground resistance will not disable the Wall Connector. This should be selected if the ground monitoring check yields false positives and ground impedance cannot be improved (as is the case in some TT networks).
- **Disabled:** Ground connection will not be monitored. This should be selected where the ground connection is not made (as is the case for IT networks), or where the current induced by this check would be problematic (as is the case on some TT networks with sensitive residual-current devices).



NOTE: Ground Monitoring is always enabled for installations in North America.

Temporary problems such as ground faults or utility power surges are resolved automatically.



Thermal Monitoring

Wall Connector actively monitors temperatures in multiple locations while charging to ensure stability of the charge session. Temperature sensors are located at the relays, microcontroller, charge handle, and rear of the main unit to monitor the temperature of the terminals in the wirebox.

In warmer conditions, Wall Connector may reduce current and charge speed to protect itself. When this happens, the light bar on the faceplate will continue to display the “streaming green” and a blink code of three red flashes to indicate that charging has been reduced due to high temperatures. If heat continues to rise, Wall Connector will stop charging and display a blink code of three red flashes.



NOTE: See [Fault Codes on page 39](#) for full list of error codes.

For optimal performance, install Wall Connectors in areas where ambient temperature will remain below 50°C (122°F). In rare circumstances, Wall Connector may begin reducing amperage at 35°C (95°F) ambient temperatures. Adjustments to amperage are automatic and do not require user input; Wall Connector will return to starting current when temperatures are reduced.

Power Outages

If there is a power outage while Wall Connector is charging a vehicle, charging will automatically resume within 1 to 3 minutes after power restoration. The Wall Connector will display a solid blue light on the faceplate to indicate that it is communicating with the vehicle and waiting to resume charging. Alternatively, pressing the button on the charge handle after power restoration will cause Wall Connector to resume charging immediately.

Firmware Updates

Firmware updates will be automatically applied to the Wall Connector to improve the user experience and introduce new features. Connect Wall Connector to Wi-Fi for access to the most recent firmware update. See [Commissioning Procedure on page 29](#).

Tesla vehicles can provide firmware updates to Wall Connectors.



Wall Connector External Components

"Wall Connector" refers to the product as a whole.



1. Faceplate
2. Light bar (vertical)
3. Main unit
4. Charge handle button
5. Charge handle



Wall Connector Internal Components



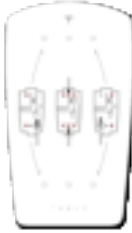








1. RS-485 port
2. Contact blades
3. Temperature sensor
4. Conductor terminals
5. Zip tie anchor
6. Sliding contacts
7. Wirebox drainage opening (enables Type 3R protection)




INSTALLATION

In the Box

 Main Unit	 Wirebox	 Wirebox Mounting Template	 Hex Bit (4 mm)
 Zip tie (x1)	 Wall Connector-to-Wirebox Fastener (x4)	 Wirebox-to-Wall Fastener (x2)	 Quickstart Guide (contains sticker with SSID network name and unique password) SAVE THIS DOCUMENT

 **NOTE:** The hex bit, zip tie, and fasteners are located in a plastic bag inside the wirebox, which comes attached to the main unit of the Wall Connector.

 **NOTE:** Wall plugs are not included. If installing in concrete or other like materials, use 6 mm wall plugs.














Tools

Required Tools



NOTE: Drill bit sizes assume wood mounting surfaces. If installing on concrete or other masonry, consult with an electrician for optimal pilot hole sizes.

 Torque Driver (50 lbf . in, 5.6 Nm)	 Multimeter	 Stud Finder	 Tape Measure
 Wire Stripper	 Drill Bit, 1/4 in (6.5 mm)	 Drill Bit, 5/32 in (4 mm)	 Bit Driver
 Level	 Smartphone (with Wi-Fi)	 Power Drill	

Optional Tools

 Step Bit, 1-1/8 in (29 mm)	 Step Bit, 1-3/8 in (35 mm)	 Computer (with Wi-Fi)
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Installation Considerations

Wall Connector may be installed on any flat, vertical surface capable of supporting its weight (e.g. wall, pedestal, etc.). Wall Connector weighs .

Choosing Location

Install Wall Connector in a location that allows the charge cable to reach the vehicle charge port without putting strain on the cable. Recommended installation area for Wall Connectors with 24 ft (7.3 m) cable:



Install Wall Connector in a location with ample clearance on all sides to allow the charge cable to loop around the unit and the charge handle to comfortably land in the side dock.



NOTE: If constrained by space, a cable organizer can be installed near the Wall Connector (sold separately).




Choosing Height



- Maximum height (indoor and outdoor): 60 in (1.52 m)
- Recommended height: ~45 in (~1.15 m)
- Minimum outdoor height: 24 in (0.6 m)
- Minimum indoor height: 18 in (0.45 m)

Maximizing Wi-Fi Signal Reception

Wall Connectors should be connected to a local Wi-Fi network for optimal functionality. For maximum signal reception, avoid installing Wall Connector on opposite sides of concrete, masonry, metal studs, and other physical obstructions that could impede Wi-Fi signal reception.

 **NOTE:** If a mobile device is able to connect to local Wi-Fi at a given location, it is a good indication that Wall Connector will also be able to connect.





Wire Entry Options



Wall Connector's wirebox has multiple wire entry options. Choose one entry path and follow installation instructions based on chosen entry path.

1. Top entry location
2. Rear entry locations (left or right)
3. Bottom entry location

For additional installation considerations on sites that will have multiple Wall Connectors, see [Considerations for Power Sharing on page 34](#).