JETCHARGE

# Home Charging

## What is a standard installation?

## Installing a dedicated charger at your home

Installing a charger at your home involves changes to your electrical wiring. It is the equivalent of installing 3 x 2.5kW air conditioning units! Because every home is different, and every customer has their own set up, every charger installation is unique.

Prior to installation day we assess the nature and complexity of each installation via the photos you provide us, or a site visit if required. We split all installations into two categories: 'standard' and 'non-standard'. Most installations are 'standard'. This document will cover what is and is not included in a standard installation.

## What do we consider when assessing your EV charger installation?

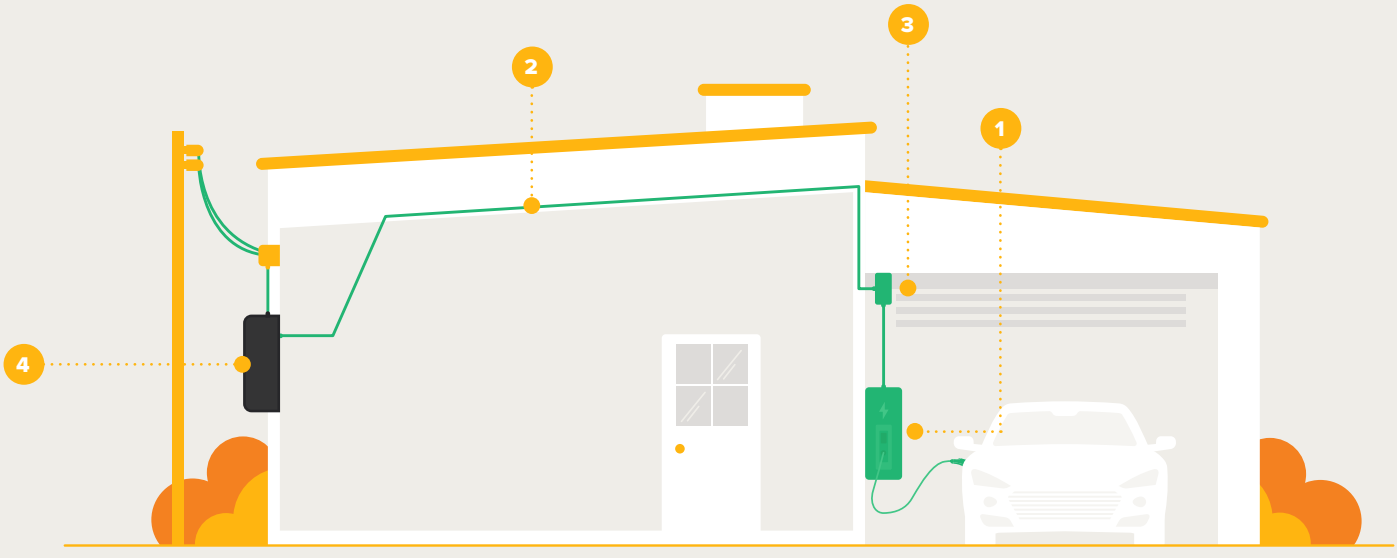
**To determine the nature and complexity of your installation, we consider factors such as:**

- The distance from the charger to the switch board – how far away from your main switchboard is the desired charger location? Is it over 20 metres when cable is run flush to the walls?
- Whether or not the cable is going above or below ground.
- The type of home you live in (house, townhouse, apartment) and the number of storeys, single or double.
- The age of your home and corresponding electrical infrastructure.

## What is a standard installation?

A standard installation is generally a domestic, single-story property, with off street parking and minor electrical works required.

A standard installation generally includes:



### 1 A single-phase EV charging station

We will install a new electric vehicle (EV) charging station that can provide up to 7.2 kW of power. The charging station will be connected to a single-phase electrical circuit, and the maximum current it will draw will be determined by local distribution provider electrical requirements and the properties available electrical site capacity. This will ensure that the charging station is able to provide a reliable and efficient way to charge your EV.

### 2 A dedicated electrical circuit which consists of ~20 meters of copper cable

We will install a new electrical circuit in your building that will be used exclusively for your EV charger. This dedicated circuit will provide a reliable and safe way to supply electricity to the designated area or equipment.

The circuit will be made up of ~20 meters of copper cables that are mounted on the wall or ceiling. Where cable is installed on a surface that has no cavity, like a single skin brick wall, PVC Conduit will be installed to protect the cables. The conduit will be visible in a few locations, and flexible conduit will be no longer than 400mm. The cost of PVC conduit is included in the standard installation.

If the distance between your switchboard and charger uses over 20 meters of copper cable, more cable will be required at an additional cost.

### 3 Installation of an isolation switch near the EV charging station

We will install an isolation switch, for safety purposes, near the electric vehicle (EV) charging station. This switch can be easily accessed and will allow an electrician to safely turn off the EV charger when maintenance work is needed, without disrupting the power supply to the rest of the house.

### 4 Installation of electrical circuit protection

We will include special protection for the dedicated electrical circuit that powers the EV charging station. This protection will be installed in the main switchboard of your building and will include devices called an RCBO (Residual Current Circuit Breaker with Overload Protection) or an RCD (Residual Current Device – type A). These devices are designed to quickly shut off the power in the event of an electrical fault, such as a short circuit or an overload. This will help to ensure the safety of the EV charging station, your home and protect against electrical hazards. It is also a required of the AS/NZS 3000:2018 Electrical Installation Wiring Rules.

## What if I don't qualify for a standard installation?

**If you don't meet the criteria for a standard installation, don't worry you can still install a dedicated charger in your home!**

In this case, your installation will be treated as nonstandard, and our team will check your property (either digitally or physically, during a site visit) to understand what additional work is needed. They will then price this up for you and provide you with a quote.

## Non-standard installations

Specialist installation types, specialist works and additional, or more involved electrical works fall outside of our standard installations. We have complied a list of typical items in these categories below. There are additional costs associated with each of these which our team will work through with you.

### Specialist installation type

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| **Apartment installation** | Apartment installations follow a slightly different process because we have to assess the impact of the EV charging station on the whole building and we need Body Corporate approvals. Each building has unique requirements so we have to assess each one individually and provide you with a proposal. |
| **Three phase installation** | If your property has a three phase connection and your EV is capable of charging across three phases, you can consider a three phase installation. Upgrading to a three phase installation is considered non-standard and the cost will be assessed and quoted to you. You may also want to do this to future proof your home for different types of EVs in the future that have three phase on board chargers. |

### Additional electrical works required

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| **Switchboard modifications and rearrangement of the existing circuit breakers or switchboard replacement/upgrade** | This is required if the switchboard is full and there is no space to install the EV charging station circuit protection.<br>Replacements or upgrades would occur if the switchboard is older e.g. all fuses are ceramic. This has to be done in accordance with Aus/NZ wiring standards. |
| **Replacement of Main Switch with a Current Limiting device - Circuit Breaker** | A lot of older style homes have a Main Switch that protects the electrical installation of the home. A main switch relies on the electricity distributor's fuses for electrical fault protection.<br>Due to the increased load of EV Charging equipment at your home, it may be necessary to update this Main switch at your home to a Circuit breaker to meet the requirements of AS/NZS 3000:2018 for maximum demand.<br>Maximum demand is the expected peak load in an electrical system. A main switch will not disconnect the supply to the house in an event of an electrical fault, but a circuit breaker will and hence it is an additional means of protection against faults such as overload and short circuit protection. |
| **Additional Enclosure for Circuit Protection if Switchboard is full** | If your main electrical panel is full and there is no space to install a new circuit breaker, we will need to add an additional enclosure. This is a metal or plastic box that is used to enclose and protect electrical components, such as circuit breakers and wiring. It is typically mounted on the wall or ceiling of a building and is used to provide a safe and secure space for electrical components. This provides protection for the new electrical circuit and will help to ensure the proper functioning and safety of your electrical system. |

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| **Major electrical upgrade works** | This would include any electrical remediation works to meet the current Australian wiring regulations. |
| **Consumer / Sub Main Upgrade** | This would occur if the electrical cable to the property is not big enough to add additional load. A new cable from the mains power to the home is required for installation. |

## Specialist works required

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| **Trenching, groundworks or other civil works or asbestos removal** | Trenching, groundworks and asbestos removal require specialists. If this work is identified as required, we will let you know. |
| **Work over multi stories, underfloor work (other than easy under house access) or any hidden or structural location not in the ordinary course of installation** | Although some residential homes appear similar, they may not have the same construction. Your home may have a specific architectural design elements that makes it difficult to install a dedicated circuit for your EV Charger. As a result, structural alterations may be required to install cabling such as removing small sections of plaster to access points. This may require patching or make good at an additional cost.<br>In addition, some houses, over multi stories, may need specialized working at height equipment for the installation of cable. |

## Some important electricity rules

**Safety is really important to us, especially when it comes to putting in a new piece of equipment in your home.**

All installations include 12 month warranty and will be compliant with AS/NZS 3000 wiring rules. In addition, there are also state-based rules known as Service and Installation Rules (SIRs). These determine the maximum charging rate of your charger, and the maximum power safely available at your property.

If your installation is in Queensland, the SIRs mean that regardless of what your charger is capable of, it will be capped at 20A single phase.

JETCHARGE
AN ELECTRIC FUTURE, TOGETHER

**We're always here to help**

If you have any questions, you can contact you can contact us on 1300 856 328 or info@jetcharge.com.au

# Glossary

### AC Current

AC current, or alternating current, is a type of electrical current that alternates in direction. It is the most used type of electrical current in homes and businesses, as it can be easily generated and transmitted over long distances. AC current is typically generated by power plants and is then distributed to homes and businesses through the electrical grid. It is also used in some electric vehicles and other applications where a variable flow of current is needed. In contrast to DC current, which flows in one direction only, AC current changes direction many times per second.

### DC Current

When installing an EV charger at home, an experienced electrician will need to run a dedicated cable in your garage that is rated to handle the charger. They will also ensure that additional safety measures are completed in your switchboard. Installing a dedicated charger is the equivalent of installing 3 x 2.5kW aircon units, it requires specialist work to be done to your electrical infrastructure.

### DNSP

DNSP, or Distributor Network Service Provider, is a term used in the Australian electricity industry to refer to the companies that own and operate the distribution networks (poles and wires) that deliver electricity to homes and businesses. In Australia, each state and territory has its own DNSP, which is responsible for maintaining and upgrading the distribution infrastructure in its area. The DNSP also sets the technical and safety standards for the distribution of electricity in its area.

### Main Switch

A main switch is a large, heavy-duty switch that is typically located in the main switchboard of a building. It is used to turn off the power to the entire building, or to individual circuits within the building. A main switch is typically operated manually, and is used as a last resort to shut off the power in case of an emergency or other situation where the power needs to be quickly disconnected. It is a crucial component of any electrical system, and is often used in combination with other safety devices, such as circuit breakers, to provide additional protection and reliability.

### Main Switch

A PHEV, or plug-in hybrid electric vehicle, is a type of vehicle that combines a traditional combustion engine with an electric motor and a battery. PHEVs can be plugged into an external power source to recharge the battery, and can operate in either electric-only mode or hybrid mode, where the combustion engine and electric motor work together to power the vehicle. PHEVs offer the benefits of both EVs and traditional combustion engine vehicles, such as reduced emissions and increased fuel efficiency.

### EV

An EV, or electric vehicle, is a type of vehicle that is powered by an electric motor instead of a combustion engine. EVs use electricity stored in a battery to power the motor, which drives the wheels and propels the vehicle. EVs are becoming increasingly popular due to their potential for reduced emissions and lower operating costs compared to traditional combustion engine vehicles.

### kW

kW, or kilowatt, is a unit of power used to measure the rate at which energy is generated or consumed. It is commonly used to express the power output of engines, generators, and other electrical devices. One kW is equal to 1,000 watts. The power output of an EV charging station is typically expressed in kW. For example, a charging station with a power output of 7.2 kW can provide 7.2 kilowatts of power to an EV.

### kWh

kWh, or kilowatt-hour, is a unit of energy used to measure the amount of electrical energy consumed or produced. It is commonly used to express the electrical energy usage or storage capacity of devices such as batteries, solar panels, and electric vehicles. One kWh is equal to the amount of energy consumed or produced by a 1 kW device in one hour. The energy usage or storage capacity of an EV battery is typically expressed in kWh. For example, an EV battery with a capacity of 60 kWh can store enough energy to power a 1 kW device for 60 hours.

### Main Switch

The speed of charging of an EV charger installed in your home can vary depending on the power available in your home, the state you're in and the service and installation rules of the state. Some states have a limit on maximum charging rate while others don't. QLD and SA have limitations, but WA, NSW, VIC, TAS and ACT don't.

### PVC

PVC, or polyvinyl chloride, is a type of plastic that is commonly used in construction and other industries. It is known for its durability, versatility, and resistance to moisture and chemicals. PVC is often used to make pipes, conduits, and other products for the electrical and plumbing industries. It is also used in the manufacturing of clothing, furniture, and other consumer goods.

### RCBO

An RCBO, or residual current circuit breaker with overload protection, is a type of circuit breaker that combines the functions of a residual current device (RCD) and an overload protection device. It is used to protect against electrical faults and overloads in a circuit. An RCBO is a safety device that is designed to quickly shut off the power in a circuit if it detects an electrical fault, such as a short circuit or an overload. It also provides protection against electrical overloads, which can cause damage to electrical devices and pose a fire hazard. RCBOs are commonly used in electrical installations to provide additional protection and safety.

### RCD

An RCD, or residual current device, is a safety device that is used in electrical installations to protect against electrical shocks and other hazards. It is designed to quickly shut off the power in a circuit if it detects an imbalance in the current flowing through the circuit. This can help to prevent electrical shocks, fires, and other hazards. RCDs are commonly used in residential and commercial buildings to provide additional protection for electrical circuits.