



Level 1 and 2 charging

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Whether you just got a new electric car or you plan to purchase one soon, there are two main options to charge your car at home. Level 1 chargers are the cheapest and easiest way to charge your EV, but they can take days to fill up your batteries. Level 2 chargers are fast enough to fill your batteries overnight, but they usually need to be installed by a professional electrician. Here's everything you need to know about the difference between level 1 vs level 2 EV charging in terms of power, speed, cost, and more.

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Level 1 chargers carry 120V (volts) at 10-20A (amps), which means they can deliver between 1.2-2.4kW (kilowatts) of power. On the other hand, level 2 chargers are capable of delivering 240V at 12-80A, or 2.9-19.2kW. That means level 2 chargers are a lot faster, but they also require more power, and you might need an electrician to install them.

To find out how much power an outlet can deliver, all you have to do is multiply its voltage by its amperage.

A unit of electrical power. This number will tell you how much electricity your charger can deliver and how fast it will be able to fill up your batteries. The power output of EV chargers is measured in kilowatts (kW or 1,000 watts), and your electric car battery capacity will be measured in kilowatt-hours (kWh).

The electricity pressure in a wire. In the US, power is delivered to homes at two different voltages, 120V and 240V. Regular household appliances, like TVs, computers, lamps, and microwaves, only need 120V, while large appliances like stoves, clothes dryers, and air conditioners need 240V.

A unit of electrical current. You can think of amps like the load carried by a dump truck, and volts are like the speed of the truck. When charging your electric vehicle, you want the power source to have as many volts and amps as possible, so it can deliver power as quickly as possible.

Level 2 chargers are faster, safer, and more convenient than level 1 chargers. If you install a wall connector in your home, you can fully charge your EV overnight. Level 2 wall chargers also come with smartphone apps that let you see how much energy you're using and set charging schedules to help save money and energy.

Before you install a level 2 charger in your home, make sure to check your EV's onboard charger. All electric cars have a built-in onboard charger, which converts the alternating current (AC) found in your home into direct current (DC) to charge your batteries.

There are three main options for installing a level 2 charger in your home. You can use an existing 240V outlet, as long as it can deliver enough power. You can also install a wall connector for a cleaner and safer



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charging station. Wall connectors can either be hardwired directly to your circuit breaker or plugged into a 240V outlet.

Hardwiring your EV charger means connecting it directly to a 240V circuit in your circuit breaker. While this requires an electrician to install the charger for you, it will be cleaner, safer, and more convenient in the long run. Without the extra wires hanging down, you have fewer issues due to faulty wiring.

Whether you install a hardwired EV charger or a new 240V plug, you'll need to follow the National Electrical Code "80% rule." This means your charger can't use more than 80% of the capacity of the circuit it is connected to. So, if you want to charge your electric car at 48 amps, you'll need a 60-amp breaker.

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