

## **40 Amp Level 2 Charging**

There are many words and phrases used in the EV industry. EV chargers are described as portable EV chargers, mobile EV chargers, EVSE chargers and trickle chargers. Over time, the industry tried to categorize the charge speeds of both portable EV chargers and fixed wall charging station (both residential and commercial)

### **What is 40 amp level 2 charging?**

40 amp level 2 charging is basically the fastest residential charge. 40 amp level 2 charging is faster than level 1 charging but often slower than commercial charging stations which can be 60 amp plus.

There are some companies selling 48 amp level 2 chargers but these will trip the breaker which poses an electrical hazard over time. The current should “pull” approximately 80% of the breaker’s rating and most 40 amp plugs are on a 50 amp circuit.

### **How much faster will a 40 amp level 2 charger “fill” my battery for full range/charge?**

Assuming your car has a high battery acceptance (kilowatts per hour of charge), a 40 amp level 2 EV charger will charge your battery 3 to 4x faster.

### **What is the power difference of 40 amp level 2 charging compared to level 1 charging?**

40 amp level 2 charging provides 3.5x power compared to a level 1 EV charger used in a regular domestic 3 pin residential socket

### **What is the power difference of 40 amp level 2 charging compared to 32 amp level 2 charging?**

40 amp level 2 charging provides 1.2x more charging than its 32 amp counterpart

### **What plug receptacles can be used for 40 amp level 2 charging?**

The most common is 14-50 and then 6-50. 10-50 is not recommended as the plug receptacle is not grounded. Unfortunately, NEMA 10-50 level 2 chargers are still sold on 3<sup>rd</sup> party websites.

### **Why has 40 amp level 2 charging become more popular?**

Tesla adopted it as a fast residential charger type. The other reason is that batteries that power your EV are getting bigger. As this happens, more power is needed to charge the batteries in acceptable time and reduce range anxiety from half charged batteries.

The other reason is that the EV industry realized many homes have the existing ability or capability to upgrade to 40 amp charging. If you look at your electrical panel, you will often see 50 amp breakers indicating there may be an existing 40 plug receptacle, which may have been installed for electric cooking ranges but can be used for home charging of electric vehicles.

### **Why not have a 50 amp level 2 charger if I have a 50 amp 240 volt outlet?**

This is because electrical codes require that any electrical device is equal to 125% of an electrical device’s load.

### **Why do I see 48 amp, 50 amp and 60 amp charging?**

This is generally for higher performance pure electric vehicles that now have 11-KW on board chargers (this is the amount of power the charger can accept each hour but there are very few). A 48 amp level 2 charge is possible but needs an electrician to hardwire the device directly into the circuit.

Some homes will have a 60 amp (instead of a 50 amp) rated plug and/or circuit breaker slots on which you may run a 50 amp EV charger. Some hot tubs run on 60 amp breaker circuits to suit higher amperage. Again unless you have a high end electric vehicle with a higher battery acceptance of 11 kwh (this is how fast you can charge the battery), generally a 40 amp level 2 EV charger is giving you the fastest charge.

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