



Level 2 charger vs 3

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Level 2 chargers are suitable for daily use at home or work, offering a balance of speed and cost-effectiveness. In contrast, Level 3 chargers are ideal for long-distance travel and commercial fleets due to their rapid charging capabilities¹²³⁴.

Today, we would like to explore the crucial differences between Level 2 and Level 3 electric vehicle charging as we dive into their unique specifications, applications, and advantages.

This comprehensive guide from Electrly is prepared to help you understand which charging solution is best suited for your specific electric vehicle and lifestyle, ensuring you make informed decisions and optimize your EV ownership experience with the right charging infrastructure.

Let's start by learning the fundamental differences between Level 2 and Level 3 chargers, including their current types, power delivery, and voltage, to better understand their distinct characteristics.

Level 2 chargers, widely used in homes, workplaces, and public spaces, employ alternating current (AC) with a 208-240V, delivering 7 kW to 22 kW of power. This charging method provides a moderate charging speed suitable for various EV models.

Level 3 chargers, also known as Direct Current Fast Charging (DCFC) stations, provide rapid charging in public areas and along highways. These chargers utilize direct current (DC) with a 400V to 920V voltage range and power delivery between 50 kW and 350 kW, offering significantly faster charging capabilities for compatible EVs.

Charging an electric vehicle depends on the charging level and the vehicle's battery capacity. Let's examine charging speeds using a Tesla Model 3 with a 60 kWh battery pack as an example.

Level 2 charging stations provide power outputs between 7 kW and 22 kW. If charging the Tesla Model 3 at a station with a 7 kW output, it would take approximately 8 and a half hours to fully charge (60 kWh / 7 kW).

Charging at a station with a 22 kW output would take around 2 hours (60 kWh / 22 kW). The actual charging speed depends on the power delivery of the charging facility, battery size, and other external conditions.

Level 3 charging stations, also known as DC fast chargers, can charge a Tesla Model 3 up to 80% in about 20 minutes using a 150 kW Tesla Supercharger. However, charging times may vary depending on the battery level as well as the charger's power output.

Keep in mind that with Level 3 charging, the high power load used to charge the battery can cause it to heat

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up. To prevent damage from excessive heat, the charging speed slows down as the battery approaches full capacity.

As a result, it's more time-efficient to use Level 3 charging until the battery reaches around 80% and then continue the journey, rather than waiting for a full charge at the fast-charging station.

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