



ROBOTIC PARKING SYSTEMS

AUTOMATED ELECTRIC VEHICLE CHARGING

TECHNICAL SPECIFICATIONS

Robotic Parking Systems Inc. optionally provides fully software-controlled Level 2 charging stations for electric vehicles inside our garages. Our intelligent software automatically controls the routing of charging vehicles inside the facility to optimize demand in the event there are more charging vehicles than charging stations available.

To activate charging, patrons must select “Charging Required” and “Hours” at the entry kiosk while parking the vehicle.

Level 1 vs Level 2 vs Level 3 EV Charging Stations

There are three types of chargers.

Level 1

These charging stations use a normal 120-volt connection which uses any standard household outlet. The downside is that charging times can be slow, 1 to 3 miles/hour. Many electric vehicle owners will find that they typically don't deplete more of the battery than can be replenished overnight using a basic 120V connection. A Mercedes B Class 250e, for example, can take 20 hours to fully charge (87 miles of range) with a standard 120-volt charging station (Level 1).

Level 2

These EV chargers use a higher output 240-volt power source like the ones used for your oven or clothes dryer. Charging times are much faster, 10 to 25 miles/hour. A 240-volt Level 2 charger can fully charge a Mercedes B Class 250e in 3 hours.

Level 3 / DC Fast Charging

Level 3 charging, also called DC Fast Charging, is the quickest system of charging. Level 3 can bring a given EV's battery back up to 80 percent of its capacity in around 30-60 minutes, depending on the vehicle and the ambient temperature (a cold battery charges slower than a warm one.) However, routinely using a Level 3 charger can ultimately hurt your car's battery. Additionally, these chargers are extremely expensive.

Specifications

| Electric Vehicle Charging Stations | 30 Amp Charging Station | 40 Amp Charging Station | |
|---------------------------------------|---|--|----------------|
| Catalog Number | EVR30-B1C | EVR40-B2C | |
| Electrical Specifications | | | |
| Amperage | 30 A 60 Hz | 40 A 60 Hz | |
| Breaker | 2 Pole, 40 A Breaker on Dedicated Circuit, Non-GFCI Type | 2 Pole, 50 A Breaker on Dedicated Circuit, Non-GFCI Type | |
| Voltage | 240 VAC Single Phase and 208 VAC 3-Phase Y | 240 VAC Single Phase and 208 VAC 3-Phase Y | |
| Charge Connector Cord | SAE J1772 Charge Connector | SAE J1772 Charge Connector | |
| Output Rating | 7.2 kW (30 A @ 240 V) 6.2 kW (30 A @ 208 V) | 9.6 kW (40 A @ 240 V) 8.3 kW (40 A @ 208 V) | |
| Phantom Power | < 7.5 W | < 7.5 W | |
| Number of Phase/Wire | L1, L2 and Ground, Bottom Feed | L1, L2 and Ground, Bottom Feed | |
| Short Circuit Current Rating | 20 mA CCID per UL 2231 | 20 mA CCID per UL 2231 | |
| Station Operating Temperature | -22°F to +122°F / -30°C to +50°C | -22°F to +122°F / -30°C to +50°C | |
| Environmental Specifications | | | |
| Charging Cable Operating Temperature | SAE J1772 Connector Cord : -40°F to +122°F (-40°C to +50°C) | | |
| Operating Humidity | < 95% Relative Humidity, Non-Condensing | | |
| Cooling | Natural Cooling | | |
| Altitude | Up to 6,500 ft. (2,000 m) | | |
| Material Specifications | | | |
| Enclosure Rating | NEMA Type 3R | | |
| Enclosure Cover Material | Plastic (PC+PBT) | | |
| Status Indicators | Power Present, Charging, Fault | | |
| Charge Connector Cord | UL Type EV | | |
| Mechanical Specifications | | | |
| Charging Cable Length | 18 Ft (5.5 m) | 25 Ft (7.62 m) | 25 Ft (7.62 m) |
| Product Features | | | |
| Cover Locking Mechanism | Torx Screw to Prevent Unauthorized Access / No Padlock Option | | |
| Card Reader | — | ISO/IEC 14443 Type A/B RFID For User Authentication | — |
| Standards & Certifications | | | |
| Certificates/Compliance | SAE J1772; UL 991; SAE J2953; NEC Article 625; UL 2594; CSA C22.2; No. 107.1; UL 2231-1; FCC; UL 2231-2; UL, cUL; UL 1998; RoHS | | |
| Warranty | | | |
| Term | 2-Year Limited Warranty | | |
| Pedestal System | | | |
| Component | Material Specifications | | |
| Pole/Base | Powder Coated Steel | | |
| Charge Connector Docking Bracket | Valox® PBT & Powder Coated Steel | | |
| Mounting Hardware | Stainless Steel | | |

The charging time for various vehicles using Level 2 chargers are as follows.



Electric Vehicle Charge Time Comparison

Battery Electric & Plug-In Hybrid Vehicles



BATTERY ELECTRIC VEHICLES

| Type of Vehicle | On-Board Charger (kW) | Battery Capacity (kWh) | Level 1 (12 A) Charge Time (Hours) Auto Manufacturer Supplied | Level 2 (30 A) Charge Time (Hours) Leviton EVR30-B1C | Level 2 (40 A) Charge Time (Hours) Leviton EVR40-B2C |
|---------------------------------|-----------------------|------------------------|---|--|--|
| BMW ActiveE | 7 | 32 | 23 | 4.5 | 4.5 |
| BMW i3 ('14-'16) | 7.4 | 23 | 16.5 | 3 | 3 |
| BMW i3 2017 (60 Ah Battery) | 7.4 | 23 | 16.5 | 3 | 3 |
| BMW i3 2017 (90 Ah Battery) | 7.4 | 32 | 23 | 4.5 | 4.5 |
| Chevrolet Bolt | 7.2 | 60 | 43 | 8.5 | 8.5 |
| Chevrolet Spark | 3.3 | 23 | 16.5 | 7 | 7 |
| Fiat 500E | 6.6 | 24 | 17 | 3.5 | 3.5 |
| Ford Focus EV | 6.6 | 23 | 16.5 | 3.5 | 3.5 |
| 2017 Ford Focus EV | 6.6 | 33.5 | 24 | 5 | 5 |
| Hyundai Ioniq | 6.6 | 28 | 20 | 5 | 5 |
| Kia Soul | 6.6 | 27 | 19.5 | 4 | 4 |
| Mercedes B Class B250e | 9.6 | 28 | 20 | 3.5 | 3 |
| Mitsubishi i-MiEV | 3.3 | 16 | 11.5 | 5 | 5 |
| Nissan Leaf (3.3 kW) | 3.3 | 24 | 17 | 7.5 | 7.5 |
| Nissan Leaf (6.6 kW) | 6.6 | 24 | 17 | 3.5 | 3.5 |
| 2016-2017 Nissan Leaf (SL & SV) | 6.6 | 30 | 21.5 | 4.5 | 4.5 |
| 2017 Nissan Leaf (3.3 kW) | 3.3 | 30 | 21.5 | 9 | 9 |
| 2017 Nissan Leaf (6.6 kW) | 6.6 | 30 | 21.5 | 4.5 | 4.5 |
| Tesla Model S 60 | 9.6 | 60 | 43 | 8 | 6.5 |
| Tesla Model S 70 | 9.6 | 70 | 50 | 9 | 7.5 |
| Tesla Model S 85 | 9.6 | 85 | 60.5 | 11 | 9 |
| Tesla Model S 90 | 9.6 | 90 | 64.5 | 11.5 | 9.5 |
| Tesla Model S 100 | 9.6 | 100 | 71.5 | 13 | 10.5 |
| Tesla Model X | 9.6 | 100 | 71.5 | 13 | 10.5 |
| Toyota RAV4 | 9.6 | 41.8 | 30 | 5.5 | 4.5 |
| VW e-Golf (3.6 kW) | 3.6 | 24 | 17 | 6.5 | 6.5 |
| VW e-Golf (7.2 kW) | 7.2 | 24 | 17 | 3.5 | 3.5 |
| Zenith 350 Van | 9.6 | 62.5 | 44.5 | 8 | 6.5 |

COMPARISONS FOR PLUG-IN HYBRID VEHICLES FEATURED ON THE NEXT PAGE >>

PLUG-IN HYBRID VEHICLES

| Type of Vehicle | On-Board Charger (kW) | Battery Capacity (kWh) | Level 1 (12 A) Charge Time (Hours) Auto Manufacturer Supplied | Level 2 (30 A) Charge Time (Hours) Leviton EVR30-B1C | Level 2 (40 A) Charge Time (Hours) Leviton EVR40-B2C |
|-------------------------------------|-----------------------|------------------------|---|--|--|
| Audi A3 E-Tron | 3.3 | 8.8 | 6.5 | 2.5 | 2.5 |
| Audi Q7 E-Tron | 7.2 | 17.3 | 12.5 | 2.5 | 2.5 |
| BMW 330e | 3.6 | 7.6 | 5.5 | 2 | 2 |
| BMW 530e | 3.6 | 9.2 | 6.5 | 2.5 | 2.5 |
| BMW 740e | 3.6 | 9.2 | 6.5 | 2.5 | 2.5 |
| BMW i8 | 3.6 | 7.1 | 5 | 2 | 2 |
| BMW X5 xDrive-40e | 3.6 | 9 | 6.5 | 2.5 | 2.5 |
| Cadillac CT6 | 3.6 | 18.4 | 13 | 4.5 | 4.5 |
| Cadillac ELR | 3.3 | 16.5 | 12 | 4 | 4 |
| Chevrolet Volt | 3.3 | 16.5 | 12 | 4 | 4 |
| Chevrolet Volt 2016/2017 | 3.6 | 18.4 | 13 | 4.5 | 4.5 |
| Chrysler Pacifica | 6.6 | 16 | 11.5 | 4 | 4 |
| Fisker Karma | 3.3 | 16 | 11.5 | 4 | 4 |
| Ford C-Max Energi | 3.3 | 7.6 | 5.5 | 2 | 2 |
| Ford Fusion Energi | 3.3 | 7.6 | 5.5 | 2 | 2 |
| Honda Accord | 6.6 | 6.7 | 5 | 1 | 1 |
| Kia Optima | 6.6 | 9.8 | 7 | 3 | 3 |
| Hyundai Sonata | 3.3 | 9.8 | 7 | 3 | 3 |
| Mercedes C350 Hybrid | 3.3 | 6.2 | 4.5 | 2 | 2 |
| Mercedes GLE 550e | 3.3 | 8.8 | 6.5 | 2.5 | 2.5 |
| Mercedes S550 Hybrid | 3.3 | 8.7 | 6 | 2.5 | 2.5 |
| Mini Cooper S E Countryman ALL4 | 3.3 | 7.6 | 5.5 | 2.5 | 2.5 |
| Mitsubishi Outlander | 3.3 | 12 | 8.5 | 3.5 | 3.5 |
| Porsche Cayanne S E-Hybrid | 3.6 | 10.8 | 7.5 | 3 | 3 |
| Porsche Cayanne S E-Hybrid Upgrade | 7.2 | 10.8 | 7.5 | 1.5 | 1.5 |
| Porsche Panamera S E-Hybrid | 3.6 | 9.4 | 6.5 | 2.5 | 2.5 |
| Porsche Panamera S E-Hybrid Upgrade | 7.2 | 9.4 | 6.5 | 1.25 | 1.25 |
| Porsche Panamera 4 E-Hybrid | 3.6 | 14.1 | 10 | 4 | 4 |
| Porsche Panamera 4 E-Hybrid Upgrade | 7.2 | 14.1 | 10 | 2 | 2 |
| Porsche 918 Spyder | 3.6 | 6.8 | 5 | 2 | 2 |
| Toyota Prius EV | 3.3 | 4.4 | 3 | 1.5 | 1.5 |
| Toyota Prius Prime EV | 3.3 | 8.8 | 6.5 | 2.5 | 2.5 |
| Volvo V60 | 3.3 | 11.2 | 8 | 3.5 | 3.5 |
| Volvo XC90 T8 | 3.3 | 9.2 | 6.5 | 3 | 3 |

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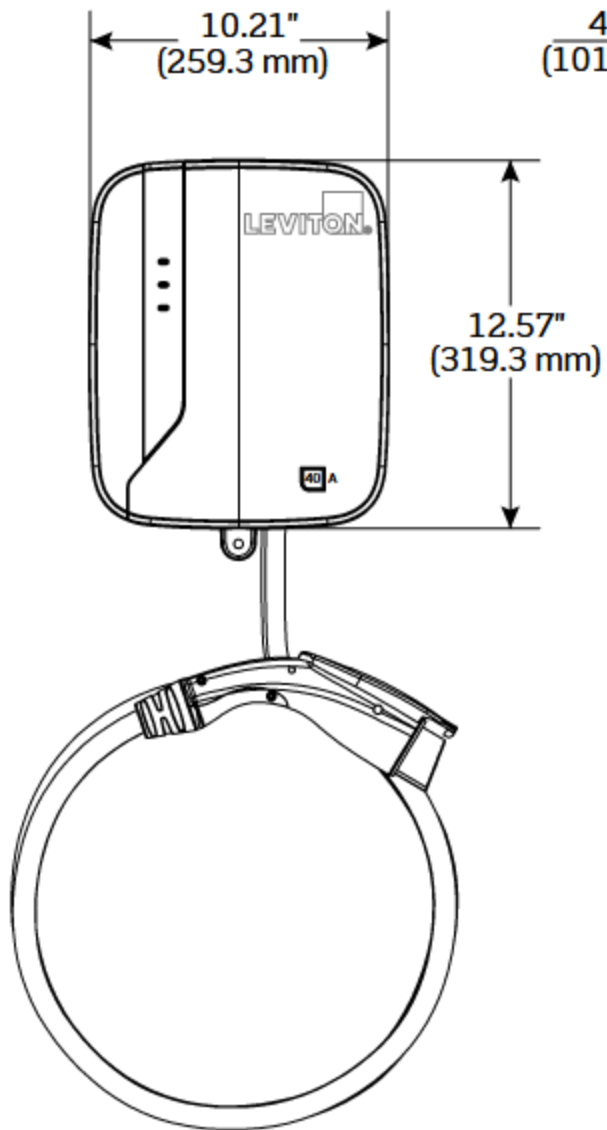
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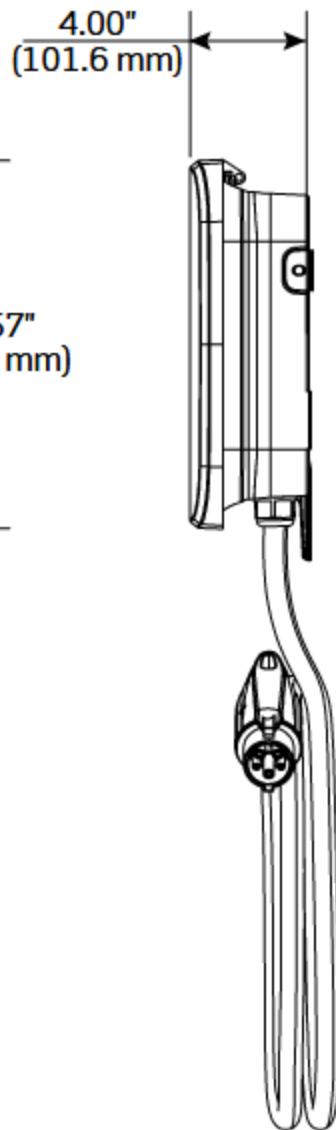
Dimensions

Charging Stations

FRONT VIEW



SIDE VIEW



Charging unit fully assembled (patent pending).



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Direct charging for vehicles with SEA J1772 adaptor.





Tesla requires an adaptor in between for charging as shown below.





Tesla adapter



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Robotic Parking Systems, Inc.

Always Ahead.

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