

## Electric Vehicle Charging Stations



By the end of 2015, experts expect 500,000 to 1,000,000 battery-electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEV) in the United States. Most electric vehicle owners will charge their cars at home, creating a large market for home chargers. In addition, many municipalities and businesses are already planning to install commercial charging stations.

A charging station is a great companion to a grid-tied PV system because it extends the financial and environmental savings of solar power to transportation, directly offsetting oil consumption and vehicle exhaust. Radio Frequency Identification (RFID) options (available on most commercial chargers) enable system owners to control and track use of their chargers by issuing authentication cards.

### There are three categories of EV charging stations:

**Level 1:** This is a simple device that plugs into a 120 VAC 20 amp outlet. It looks like a conventional AC outlet but with one blade turned 90 degrees. Typically delivered with the vehicle from the dealer or manufacturer, Level 1 charging stations are limited to a maximum of 2 kW and take 10 to 20 hours to fully charge an all-electric car.

**Level 2:** These charging stations are typically hardwired into a 240 VAC 40 A circuit and range in output from 6 to 12 kW. Level 2 charging stations can fully charge an electric vehicle in 3 to 8 hours. Installed on a dedicated circuit, they feed power to the vehicle's built-in charger through an SAE J1772 plug that resembles the nozzle of a gas pump. Most residential and commercial charging stations currently available are Level 2.

**Level 3:** This is a high powered charger that delivers 20 kW or more of 300+ VDC power directly to the EV battery. These chargers require three-phase power and a large commercial service panel. Level 3 CHAdeMO connectors are an option on the Nissan Leaf and other electric vehicles, but Level 3 charging stations are best suited for commercial vehicle and fleet applications due to their size and cost.

Federal and state tax credits in California, Hawaii, Illinois, Louisiana, Maryland, Oregon, and Washington lower the cost of equipment and installation of charging stations.



## Schneider Electric

Schneider Electric offers a suite of electric vehicle charging stations for both residential and commercial applications. These Level 2 charging stations can charge most EV batteries in 3 to 8 hours via the standard SAE J1772 compliant output plug, which fits the receptacles of the most popular EVs and Plug-in Hybrid-Electric Vehicles such as the Nissan Leaf, Chevy Volt, and Toyota's new plug-in Prius.

The Schneider EV Link charging stations also feature a user-friendly interface, integrated ground fault protection, and automatic restart following a corrected ground fault or temporary loss of power.

For maximum output, installation will require a 240 VAC source with a 40 A two-pole circuit breaker capable of a 30 A continuous load per charging unit. Dual chargers require twice the current or two separate circuits.

### EV Link Wall-Mounted Level 2 Charging Stations

These charging stations mount on the wall of a garage or outdoors on the side of a building. Installation with a standard 240 VAC socket and plug can be used to keep the unit portable, but be sure to check with your local code inspector as some jurisdictions have additional requirements for these outlets. RFID access is only available on the outdoor version, which also features a NEMA 3R weatherproof enclosure. Listed to UL 2594, 2231, 991, 1998, and 2251.



Schneider Electric EV Link Wall Mounted EV Charging Stations		
Description	Model	Item code
Indoor-only 120/240 VAC	EV2430WS	089-01500
Outdoor 120/208/240 VAC	EV230WSR	089-01501
Outdoor 120/208/240 VAC with RFID access	EV230WSRR	089-01504



## EV Link Pedestal-Mounted Level 2 Charging Stations

These NEMA 3R rated outdoor Level 2 charging stations can be deployed in parking spaces or dedicated EV charging areas. Both the single and dual output versions are available with RFID access to ensure security. Listed to UL 2594, 2231, 991, 1998, and 2251.

Schneider Electric EV Link Pedestal EV Charging Stations		
Description	Model	Item code
Outdoor 120/208/240 VAC Single output	EV230PSR	<b>089-01502</b>
Outdoor 120/208/240 VAC Dual output	EV230PDR	<b>089-01503</b>
Outdoor 120/208/240 VAC Single output with RFID Access	EV230PSRR	<b>089-01505</b>
Outdoor 120/208/240 VAC Dual output with RFID Access	EV230PDRR	<b>089-01506</b>

## EV Link RFID Accessories

RFID-accessible versions are available for all outdoor-rated EV Link charging stations. This enables the user to set up and manage up to 480 users for each charging station by issuing authentication cards. **Authentication cards** and associated pin numbers can be activated or inactivated for each charging station using the handheld programmer.

Schneider Electric EV Link RFID Accessories		
Description	Model	Item code
RFID Handheld Programmer	EVRFIDHP	<b>089-01507</b>
RFID Authentication Cards (10 pack)	EVRFIDKF-10	<b>089-01508</b>

## NEW! EV Link DC Quick Charging Stations

These Level 3 charging stations can output up to 50 kW—enough to recharge an EV to 80% in about 30 minutes. These feature a 20' long cable with a Level 3 CHAdeMO standard output connector, which cannot connect to the SAE JA1172 ports standard on consumer EVs. Nissan and others offer Level 3 connectivity as an option, while most commercial grade EVs are expected to have it standard. Schneider expects to offer adaptors for the SAE Level 3 connector standard once it becomes available.

These commercially-oriented stations also include a touch screen user interface and NEMA 3R weatherized enclosure. An RFID reader is standard for local access security using RFID cards. If the charger is to be made available to the general public, an optional credit card reader allows for the use of major credit cards through a secure cellular network.

The Quick Charging stations require up to 58 kVA of input power though a 208 VAC or 240 VAC three-phase circuit. Listed to UL 2202, 2231, and 2251.



Schneider Electric EV Link DC Quick Charging Stations					
Input voltage	Input current	Output voltage	Authentication	Model	Item #
208 VAC, 3Φ	160 A	500 VDC	RFID	EVF20850DTR	<b>089-01525</b>
			Credit Card	EVF20850DTB	<b>089-01526</b>
240 VAC, 3Φ	140 A		RFID	EVF24050DTR	<b>089-01527</b>
			Credit Card	EVF24050DTB	<b>089-01528</b>



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