

**Electric Vehicle Charging Stations:**  
an Overview for Property Owners



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The strength of the green movement, volatile oil prices and the need to decrease dependence on foreign oil have created the ideal environment for the success of the electric vehicle.

After years of research and speculation, the widespread production of the electric vehicle (EV) is a reality. Most major auto manufacturers, along with dozens of new electric vehicle manufacturers, are producing vehicles that are partially or entirely powered by rechargeable batteries.

As auto manufacturers launch their electric vehicles, drivers share the common concern of running out of power on the road. Range Anxiety is a key barrier to the acceptance of electric vehicles. All EV drivers will be able to charge at home, commercial charging infrastructure is lacking. Installation of Level 2(240V/30A) commercial charging stations at places of work, recreation and leisure alleviates this concern. With an expansive network of commercial charging stations in easily accessible locations, there are no limits to the electric vehicle revolution.

## **BENEFITS FOR PROPERTY OWNERS**

Installing electric vehicle charging stations signifies site sustainability. PEP Stations not only charge vehicles, but act as a symbol for environmentally conscious sites and practices.

Charge Stations are a necessary amenity for progressive commercial facilities. Electric vehicles are becoming more popular among commercial building tenants, their clients and customers. Electric vehicle charging stations are an attractive selling point to potential building occupants.

The International Code Council (ICC) and the American Institute of Architects are working to develop an International Green Construction Code, effective in 2012. The code will cover all spectrums of sustainable design and construction, including a requirement for alternative-fuel vehicle parking, similar to the requirement for handicap parking spaces. The code is expected to require that buildings in excess of 10,000 square feet and an occupant load of 100 provide 5%, but not less than 2 parking spaces, designated for low-emission, hybrid and electric vehicles. These are changes that will affect everyone, and they are just around the corner.

PEP Stations are equipped with a magnetic strip card reader that can be configured to accept access cards, credit cards or provide unrestricted charging. Just like at a gas station, drivers of electric vehicles can simply swipe their card and recharge.

Property owners and managers can choose to provide unrestricted charging initially, but will have the ability to recoup their electric expense or even generate revenue. PEP Stations allow property owners to determine the type of access they want to allow and the fee they want to charge per hour of connectivity.

The 8" touch screen gives property owners the opportunity to advertise their business' or their tenants business', products or services. Relevant site information such as building or store hours and or other courtesy information can also be displayed here.



**WHY PEP STATIONS?**



PEP Stations are the smart, stylish, and user-friendly charging station for the electric vehicle driver of today and tomorrow. As the EV market flourishes, consumers will need a convenient, reliable and easily accessible way to charge their electric vehicle outside of the home. PEP Stations do just that with a safe, easy to use, Level 2(240V/30A) charging station installed at commercial destinations. PEP Stations are beautifully designed and easily identifiable by the stainless steel and green exterior and interactive touch screen.

PEP Stations are commissioned, serviced and monitored by Diebold, Incorporated, a global leader in providing integrated self-service delivery and security systems and services. Diebold employs more than 6,500 service technicians worldwide of approximately 16,000 associates with representation in nearly 90 countries, and is headquartered in Canton, Ohio, USA.



INNOVATION DELIVERED®

**Dual Level 2 Charging**

PEP Stations charge two vehicles simultaneously at 240V/30A using the national standard SAE J1772 connectors. Consequently, each respective site will require half the charge stations and will pay about half the price for installation when compared to competing charging stations.

**Concrete Pedestal Base**

PEP Stations are either pedestal or wall mounted. Pedestal mounted PEP Stations are secured to a reinforced concrete base protecting the high-voltage wiring and eliminating the need for unsightly concrete bollards. The pedestal height, designed to be the same as the vehicle's bumper, is ADA (Americans with Disabilities Act) compliant.

## WHY PEP STATIONS?

### Interactive Touch Screen

PEP Stations have an interactive touch screen user interface, which is weatherproof, sunlight readable and fingerprint resistant. The screen guides the user through a few simple steps to initiate charging, making the process similar to traditional methods of refueling. The screen can be configured to display a variety of graphics, including logos, advertisements or parking lot and building courtesies and safety information.

### Magnetic Card Reader

PEP Stations allow the drivers of electric vehicles to access electricity via an access card or credit card (at a rate determined by the station owner) using its built in magnetic card reader. The ability to configure the station for free access or pay-per-use access means that there are no subscription fees required to use PEP Stations.

### Safety

PEP Stations' stainless steel enclosure, concrete base, and coiled cable management system are designed for safety and security for both the property owners and end-users. They meet all UL, National Electric Code and National Fire Protection Association requirements for electric vehicle charging stations.

### Service

A service agreement with the purchase of each PEP Station enables a low maintenance charging station solution for property owners. This agreement includes remote monitoring and support services. If service is necessary, a certified technician will respond within one business day.

All PEP Station installations require a network connection via an Ethernet cable. This connection allows for the following system management capabilities:

- Diagnostic reporting
- Charging status and charging time
- Software upgrades
- Ability to manage advertisements and other information

The online web portal provides PEP Station owners with unlimited access to the following functions:

- Monitor usage
- Change charging price per hour
- Control and restrict driver access during certain times

## ORDERING AND INSTALLATION PROCESS

Request information through [www.pepstations.com](http://www.pepstations.com) or by calling PEP Stations at: (734) 793-2000 or (888) 760-0140

After receipt of an order, PEP Stations will provide installation specifications and an installation kit, consisting of a disposable concrete form, mounting brackets and bolts. Your preferred contractor will prepare the site to the specifications provided. PEP Stations certified installers will connect and test the PEP Station to place it in service.



## INCENTIVES



Currently there is a \$7,500 tax credit for the purchase of new electric vehicles with a 16kWh battery or larger. There is also a tax credit for 10% of the cost to convert an existing internal combustion engine vehicle to electric, not to exceed \$4,000.

The federal government has implemented a generous tax rebate program for the installation of EV charging stations. The rebate for property owners is 50% of the total cost for the stations and their installation, not to exceed \$50,000. There are various incentives offered by state governments as well. Please visit the website below for a comprehensive list of incentives:

<http://www.afdc.energy.gov/afdc/laws/>



The electric vehicle movement has also been well supported through initiatives and incentives offered by the USGBC (U.S. Green Building Council). Installing electric vehicle charging stations is a key factor in demonstrating a site's dedication to reducing emissions and sustainable design. By reducing CO<sub>2</sub> emissions, in conjunction with other environmentally conscious design elements, a facility can qualify for LEED (Leadership in Energy and Environmental Design) certification. Buildings are awarded certification based on varying levels including, 'Certified', 'Silver', 'Gold', and 'Platinum'. With this certification, property owners become eligible for significant tax incentives or abatements of up to 50%.

## TECHNICAL SPECIFICATIONS



### Power Specifications

AC Power Output (maximum)	Level 2: 7.2kW (208/240V AC min. of 30A continuous per charging circuit)
AC Power Input	Level 2: 7.2kW (208/240V AC @ 30A per charging circuit)
Input Power Connections	Line 1, Line 2 and Earth
Standby Power	5W
Recommended Panel Breaker	Double pole 40A max breaker on dedicated branch
Energy Metering Accuracy	3% @ 2 minute intervals
Output Charging Connector	SAE J1772™ EV connector on 25' max. extended length coiled cord

### Safety and Operational Specifications

Safety Compliance	Complies with UL 2594, UL 2231, UL 1998, NFPA 70, NEC Article 625, ADA
Ground Fault Detection	20mA CCID with auto retry (15 min delay, 3 tries)
Plug-Out Detection	Power terminated per SAE J1772 specification
Surge Protection	6 kV @ 3,000 A
EMI Compliance	FCC Part 15 Class A

### Environmental Specifications

Enclosure Rating	NEMA 3R per NEMA 250-1997
Operating Humidity	Up to 100% over full operating temperature range
Operating Temperature	-22°F to 131°F (-30°C to 55°C) ambient temperature
Terminal Block Temperature Rating	212°F (100°C)

### Functional Interfaces

LCD Screen Resolution	800 x 600 pixels
Screen Characteristics	8.0" diagonal touch screen, sunlight readable and fingerprint resistant
Vertical Viewing Angle	124° viewing angle
Horizontal Viewing Angle	120° viewing angle
Card Reader	ISO 7811 compliant

### Network Specifications

Local Area Network	10/100/100Base-T Ethernet
Network Communication Protocol	TCP/IP, IPv4/IPv6
Network Security	Trusted Platform Module SSH, HTTPS, SSL

### Other Specifications

Approximate Shipping Weights	95 Lbs, includes component housing and concrete form or bracket
Dimensions	9"x9"x24" stainless steel housing, 51" overall height with concrete base
Reinforced Concrete Pedestal	12"x12"x27" above grade with 42" below grade, form provided with purchase
Wall Mounting Bracket	9"x11"x12" steel bracket, secured to approved wall with (4) 9/16-11 Grade 5 bolts



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LEADING THE CHARGE

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