

TopUp™

PHEV Charging System

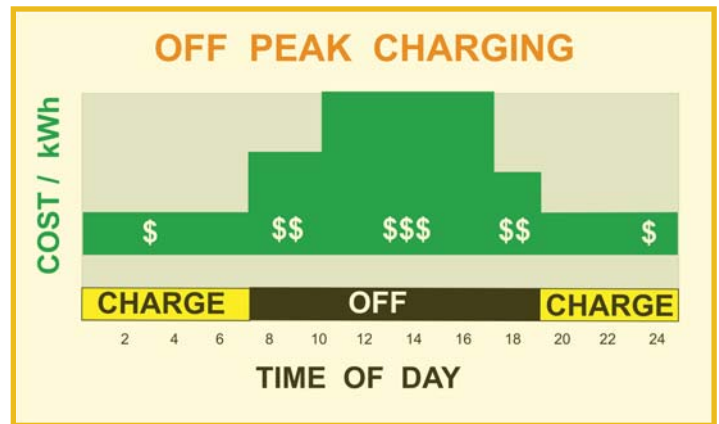


APPLICATIONS

- Residential* select lowest cost electricity
- Fleet* monitoring & analysis
- Condominium* tenant billing
- Business* parking charger control
- Solar kiosk* green energy delivery
- Utility* peak load shedding, V2G, ancillary

BENEFITS

- Time of Use (TOU) electricity control
- 65% cost savings with Powermiser
- Flexible charge preferences
- Manual over ride for quick recharging
- Free TopUp web portal for easy access
- Easy installation with standard outlets



PHEV Solution

Rising gasoline costs, insecure fuel supplies, global warming from GHG and smog from traffic congestion are factors driving demand for PHEVs. Under normal driving patterns, a PHEV40 will displace more than half of gas consumption with electricity. Smart chargers are needed for cost savings through time of use (TOU) charging at off low peak rates. Condominiums/apartments need to bill each tenant separately for their power use at their parking outlet. Fleet owners want detailed operating analysis to determine optimum equipment purchases. With a large installed base of PHEVs, utilities can implement load shedding, V2G control for obtaining surplus power at peak loads and ancillary services to reduce costs. TopUp is a flexible system for achieving these benefits.

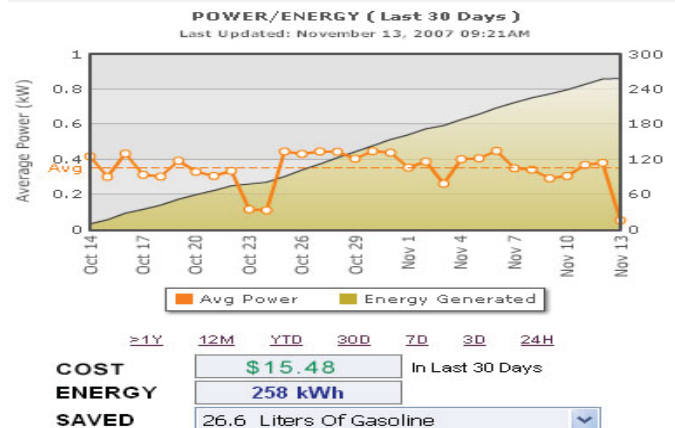
Flexible Control

Wireless communication to a local computer, the internet and the PHEV if installed in the vehicle is available for setting up and monitoring charging control. Preferences can be selected for standalone operation or accessed remotely with a browser using the free TopUp portal. Utilities and sites with multiple parking spots can control groups of outlets from a single private account.

What is TopUp

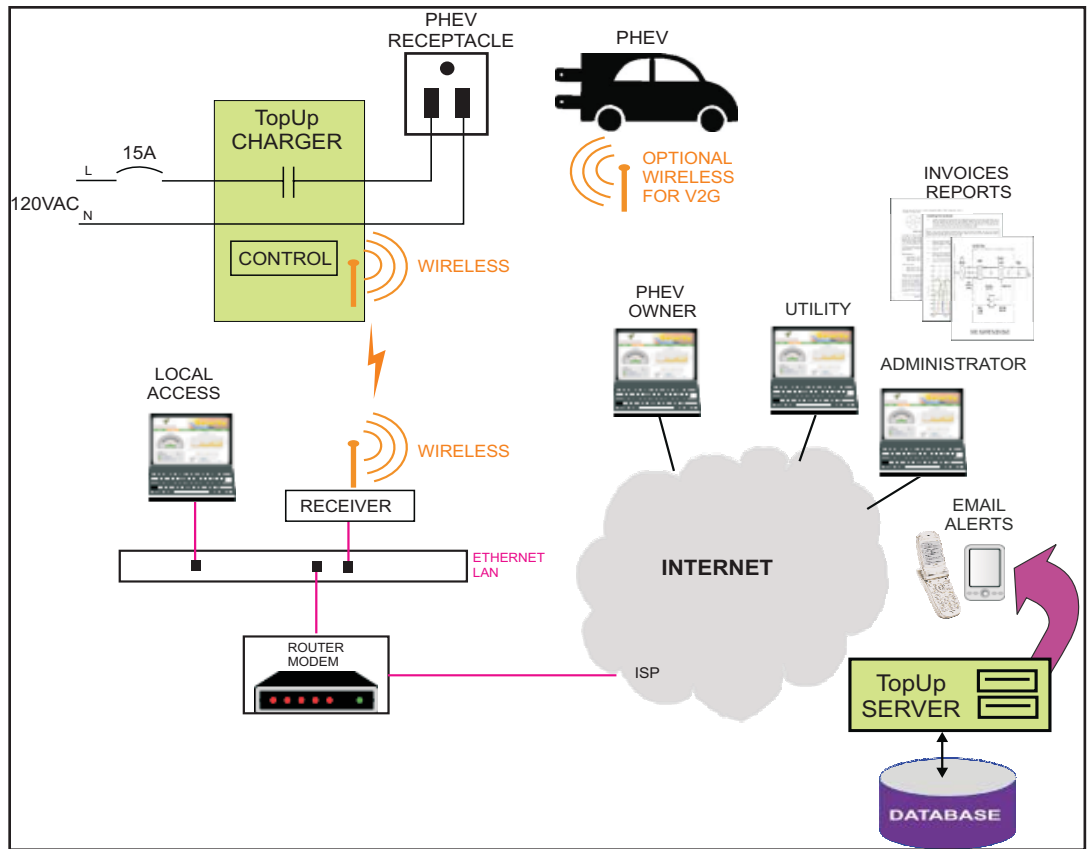
TopUp is a family of PHEV smart chargers that can be controlled locally or over the internet for minimizing electricity costs while providing detailed analysis for maximizing PHEV battery life. Control circuitry is packaged in enclosures suitable for outdoor installation that can be wired to conventional electrical outlets to suit different connection needs and power levels.

Connect to the free TopUp portal to analyze power usage and set up charging preferences.



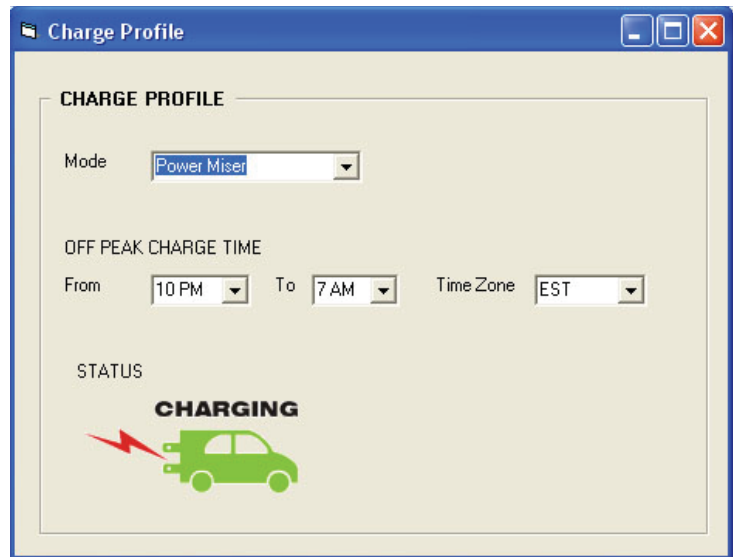
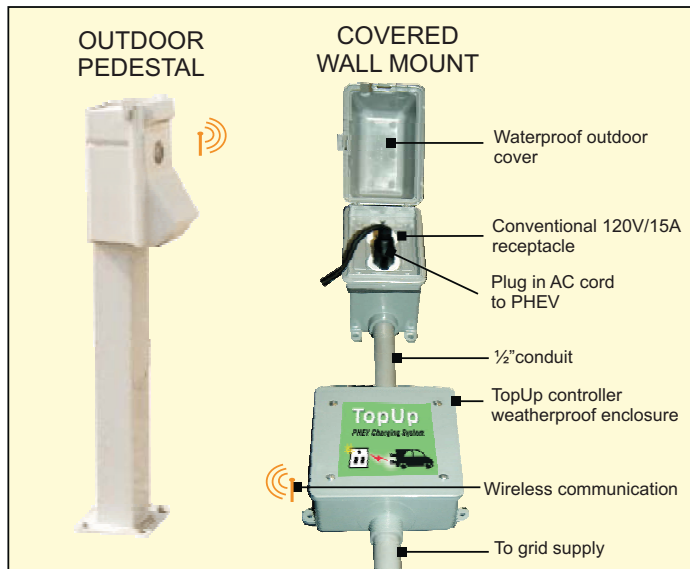
Connections

Standard receptacles are wired to the TopUp charger which is remotely controlled via wireless interface to the internet. If no internet connection is available, the TopUp charger can be configured locally to optimize time of use charging. With an internet connection, monitoring and settings can be accessed from a browser using the free TopUp portal. Future PHEVs suitably equipped can provide V2G power for utility load balancing and remote demand management. Monitor electricity costs and consumption graphs to understand usage patterns. Fleet owners can create reports to assist in cost analysis for managing operations costs.



TopUp controller can be wired to conventional receptacles for flexible configurations. Wireless communications with free TopUp web portal for browser setup and control

Simple screens allow easy setup and monitoring of electricity usage



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