



Smart EV charging

Smappee regulates the impact of EV chargers on energy flows, protecting the breaker panel.

The world is on the verge of a transportation revolution: the mass adoption of electric vehicles, or EVs. Within a decade, more than a third of all automobiles sold globally will incorporate some form of electric drivetrain—some 220 million EVs by 2030—according to market forecasts. Where will these tens of millions of new EVs plug in? While publicly accessible EV charging stations are becoming more widespread, the vast majority of owners will continue to get their cars and trucks juiced at home or at work.

Since building out the network of residential and office charging stations is critical to the success of the EV revolution, a key topic demands attention: how will this new “appliance” be integrated into the overall energy management of the building?

Need for smart energy management

Imagine an office building with a 630 kVA main connection which has 40 22 kW chargers installed. If all of these chargers were pushed to full capacity, that would total 880 kW—far too much for the installed capacity (without even factoring in energy usage in

the rest of the offices). Or what about a house with a monophase 40 A connection charging a car at 32 A, leaving only 8 A to cook, wash, watch TV, recharge mobile devices and power the lights? Not a tenable situation for most homes.

It's clear that the current installed infrastructure cannot cope with all of this consumption at the same time without fuses and circuits blowing in many buildings. Adjusting the existing grid is not the quickest or the cheapest option.

A more realistic approach to maintaining the health of the circuits is to work on the demand side, not the supply side, through the use of smart energy management systems.

Such systems continuously monitor total consumption and recognize when EVs are charging, regulating and balancing that activity in coordination with the other energy users in the building. As soon as the total usage reaches a critical point, it will instruct the car to lower the charging current to keep the circuits from blowing until the total power has enough capacity again. The system can adjust the car charging in real-time in line with the consumption it sees in the building or house, avoiding potential overloads and shutdowns.

“Smappee’s energy traffic control works from inside the breaker panel but original equipment manufacturers can install it inside the EV charger itself, regulating the energy flow to and from the EV.”



Automated control of all the energy flows

The modular Smappee Infinity smart energy management system provides flexible options to regulate the impact of EV chargers on energy flows. On the building side, the system works from inside the breaker panel to monitor, control and harmonize all of the flows, including EV charging. When energy consumption in one area increases, such as when dinner is being prepared or when the company server is running at full capacity, Smappee Infinity automatically sends less power to the EV charger so no fuses are blown, thus enhancing energy efficiency and self-consumption. Smappee’s energy traffic controller can also be installed by original equipment

manufacturers inside the charger itself, regulating the energy flow to and from the EV and offering another solution for fuse protection.

As more renewables and energy storage come online and countries look to incentives to help modernize and balance their grids, the optimization and control of energy guzzlers like EV chargers will become even more important. The future-proof Smappee Infinity is ready for the coming smart grid (r)evolution, but in the meantime, it will also help businesses and homeowners keep their circuits from blowing when chargers are incorporated into electrical system installations.

To discover the vast array of benefits Smappee Infinity delivers to ESCOs and OEMs, and how you can adopt Infinity into your smart energy customer offering, visit our website www.smappee.com.

smappee.com – info@smappee.com

Follow us on   

 **smappee**