Specification sheet

SMART PANEL FOR ELECTRIC VEHICLES

The SMP+ panel is a smart control and metering system designed to charge multiple electric vehicles from the same power source, maximizing each available kilowatt-hour, thanks to its automatic load-shedding algorithm.

In particular, the SMP+ dynamically reduces peak power demands, better distributes the electrical load between charging stations, and contributes to efficient, intelligent energy management throughout the entire building.

Measuring 24 in x 48 in x 8 in (61 cm x 122 cm x 20 cm), excluding accessories (wall mounts and locking bracket), the SMP+ is the most compact smart panel model in its class on the market. It can be connected to any distribution panel and is compatible with all models of electric vehicle charging stations[1].

Made in North America

Certifications in the United States

508A US

CTEP : California Type Evaluation Program Certificate of Approval Weighing and Measuring Devices

HOW IT WORKS

- **Real-time monitoring** of the upstream distribution panel's and connected charging stations' power consumption
- **Intelligent, dynamic energy management** based on actual consumption of each charging station and available electrical capacity
- **Load shedding** to protect upstream electrical infrastructure based on a software-configured maximum available capacity limit
- **Certified measurement in accordance with the requirements of the CTEP (California Type Evaluation Program)** for measuring the energy consumed by each charging station, enabling electricity billing by the kWh

SMP-BOX

The SMP-BOX allows the electrical infrastructure to be prepared for future charging station installations. The SMP-BOX includes three solid core current transformers that can be installed directly on the distribution panel, eliminating the need to disconnect the main power supply when adding a new SMP+. When charging stations are ready to be installed, simply add the SMP-XX-INS-G2 module to complete the installation.

[1] The customer must ensure that the EV chargers used are compatible with load shedding via power interruption.

Contact us for more information:
sales@rve-usa.com | 1 833 717-1355

View the digital spec sheet

MODES OF USE

Individual mode

In Individual mode, the SMP+ provides dynamic energy management by monitoring the consumption of its distribution panel, connected charging stations and an additional upstream three-phase feeder in real time.

Connected mode

In Connected mode, the SMP+ can communicate with other SMP+ and HUBs connected to the same electrical infrastructure. Thus, the SMP+ protects the distribution panel that it is connected to, the additional feeder and the building's electrical infrastructure. Up to 30 SMP+ and/or HUBs can be connected together, enabling intelligent management of the building's entire energy system.

ADVANTAGES

Better sharing

- Connection to the HUB and other SMP+ to provide multi-level energy management
- Several SMP+ panels can be connected to the same electrical distribution panel and/or feeder (transformer)
- Monitoring a single-phase or three-phase feeder, in addition to its distribution panel

Better management

- Access to RVE's Connect platform for improved visibility and optimized management of consumption data[2]
- Access to the power consumption report for the panel and each charging station
- Automated billing of electricity consumption through the RVE Payment service or an integrated third-party system

Greater flexibility

- Ready for the future, compatible with all brands of electrical panels and charging stations[3]
- The most compact smart panel in its class currently on the market
- Unparalleled installation speed, thanks to factory pre-wiring and pre-configuration[4]
- Compatible with charging stations of various amperages, from 20 A to 60 A
- SMP-BOX can be installed to prepare for future charging needs
- Easy installation requiring only two people

Greater profitability

- No recurring or management fees
- Limits peak power demand to reduce electricity costs and avoid the penalties associated with high power demand[5]
- Wired Internet connection is cheaper and more reliable than wireless systems

CONNECT PLATFORM

RVE's Connect platform is a digital solution that provides a complete, real-time overview of the operation of an RVE electric vehicle energy management system. It simplifies equipment supervision (HUB, DCC+, SMP+), optimizes energy consumption monitoring and billing, and enables centralized and efficient charging control.

[2] Internet connection required for each SMP+.
[3] The customer must ensure that the EV chargers used are compatible with load shedding via power interruption.
[4] Distribution panel and circuit breakers not included.
[5] RVE cannot be held responsible for penalties associated with peak power demands.

SYSTEM SAFETY

The SMP+ and its hierarchical system (HUB and SMP+) include a fail-safe mode that automatically opens relays in the event of a software, hardware or communication failure.

This safety mode is designed so that the current associated with the relays is considered to be zero (0 A) when calculating the electrical load of the building or unit.

In the event of an Internet outage, the SMP+ ensures continuous protection of the electrical infrastructure through autonomous control and fully local decision-making.

SMART LOAD SHEDDING

Electricity is distributed dynamically and intelligently between charging stations in real time, according to the needs of each electric vehicle.

To provide an even more equitable distribution of available energy, the SMP+ algorithm's load-shedding logic takes into account the following key factors:

- Charging time for each charging station
- The amount of energy already allocated to each charging session

This approach ensures a fairer distribution among users, even when demand is high.

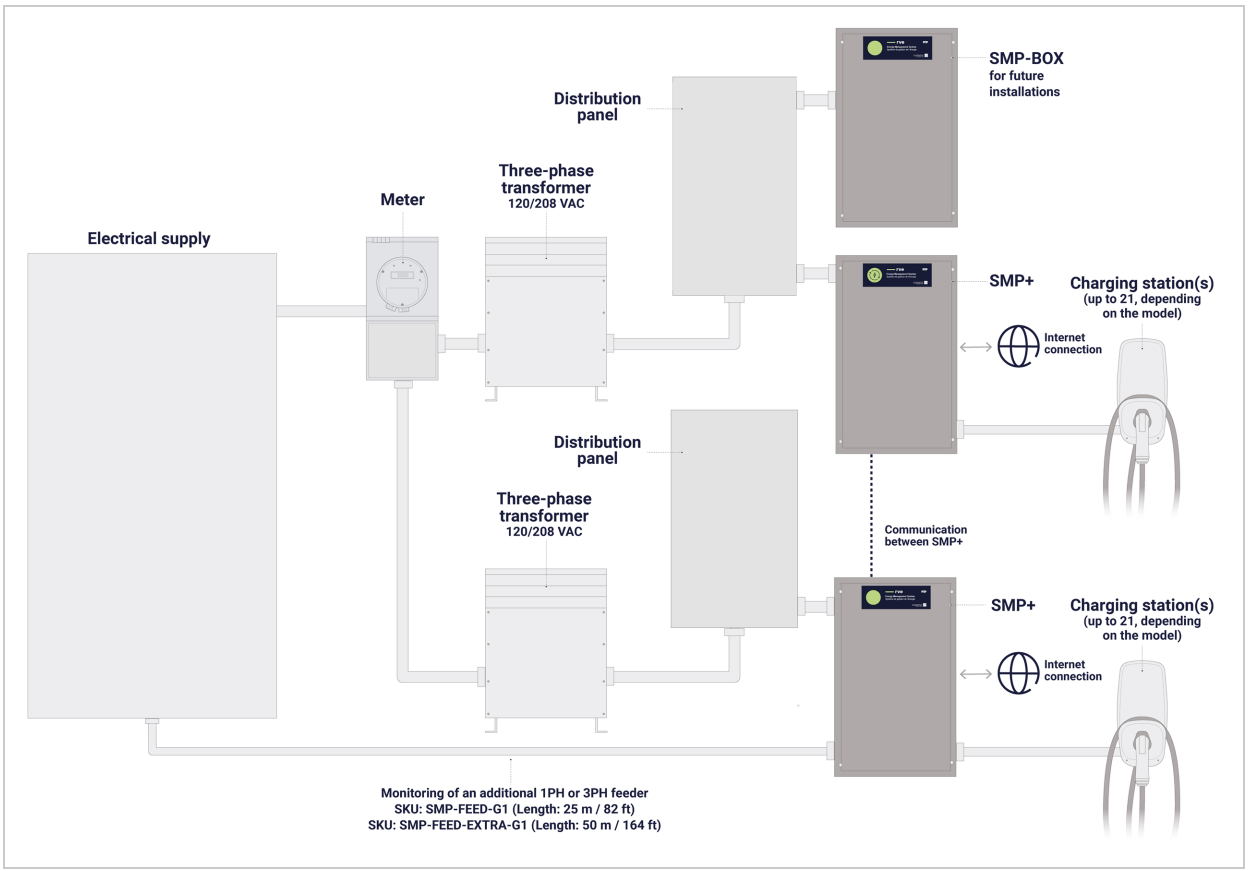
What's more, the SMP+ integrates three-phase balancing in the load-shedding sequence, helping to reduce transformer load during periods of high demand and extend the life of the electrical infrastructure.

TYPICAL INSTALLATION

The following diagram shows an example of an SMP+ installation.

The SMP+ can be installed outside the electrical room if required.

A distribution panel equipped with circuit breakers is required for any SMP+ installation. This panel is not provided by RVE and must be included in the proposal to the customer.



FACTORY-SET CONFIGURATION

The SMP+ is fully pre-configured at the factory based on the information provided by the project manager during the ordering process.

AMPERAGE SETPOINT CALCULATION EXAMPLES

Here are three examples of amperage settings per phase with the number of charging stations that can be supplied at full power. The number of charging stations is calculated for 32 A stations, with a 40 A circuit breaker, which are optimally distributed between the three phases of the upstream electrical infrastructure. The number may vary according to the current of each branch circuit and the distribution of charging stations between the three phases.

Amperage per phase	56 A	111 A	167 A
Number of stations	3 charging stations	6 charging stations	9 charging stations

The reference table for determining the amperage per phase of an SMP+ panel can be found at: **rve-usa.com/smp-calculator/**

BASIS FOR CALCULATION OF SOFTWARE SETPOINT FOR MAXIMUM AMPERAGE PER PHASE

The software setpoint calculation can be based on:

- The predetermined sharing ratio (e.g.: 1 active charging station for every 4 installed stations)
- Energy over a given period (e.g. 12 kWh over 8 h)
- The sizing of a new dedicated electrical infrastructure
- The available capacity of the electrical components already installed

TECHNICAL SPECIFICATIONS

PRODUCT NUMBERS	SMP-12-G2	SMP-15-G2	SMP-18-G2	SMP-21-G2	SMP-BOX-LITE-G2
Number of branch circuits for charging stations	12	15	18	21	—
Minimum electrical capacity required	56 A per phase				—
Current transformer for the distribution panel	400 A: inner diam. 1.69 in. (4.29 cm), outer diam. 3.07 in. (7.8 cm)				
	600 A: inner diameter 3.54 in. (8.99 cm), outer diameter 5.7 in. (14.48 cm)				—
Current transformer for additional feeder monitoring	Refer to the RVE current transformer catalog				—
Branch circuit rated current[6]	Between 20 A and 60 A (default setting: 32 A)				—
Standards and certifications	NEMA 4				NEMA 4
Power terminal blocks	Max AWG 2, Cu				—
Operating voltage	208 V, 60 Hz, 3Ø 4-wire 120/240 V, 60 Hz, 1Ø 3-wire 3-pole 15 A circuit breakers				—
Net dimensions (W x H x D)	24 in x 50.3 in x 9.4 in (61 cm x 127.7 cm x 23.9 cm)				
Shipping dimensions (W x H x D)	33 in x 52 in x 13.5 in (84 cm x 132 cm x 34 cm)				
Net weight	143 lb (65 kg)				83.8 lb (38.2 kg)
Shipping weight	154 lb (70 kg)				108 lb (49.9 kg)
Network connection required	Ethernet (RJ-45), minimum 40 Mbps upstream and downstream				Upon adding the SMP-XX-INS-G2

[6] Branch circuits are preconfigured for 32 A charging stations; for any change in nominal current (between 20 A and 60 A), please contact RVE.