Power Management Solutions for EV Charging Depots

Scalable and standardized power system protection, monitoring, and control solutions

- Maximize charging depot uptime with power system solutions that integrate with all major switchgear and distributed energy resource (DER) manufacturers.
- Scale rapidly across the globe using energy management solutions that are designed to meet your needs and standardized to support fast deployment.
- Work with one partner from concept to completion using comprehensive engineering, procurement, and construction management (EPCM) services.
- Choose a power industry partner who has designed, tested, and manufactured products in the U.S.A. since 1984.

SEL

Our Approach

For 40 years, SEL has specialized in creating digital products and systems that protect, automate, and control electric power systems. When you work with us, you're choosing a partner with a long track record of providing the highest-quality engineering, most reliable solutions, and most outstanding customer support in the industry.

Partner with us to ensure the reliable operation of your EV charging infrastructure, maximize system uptime, and optimize asset utilization. With experienced engineers and customer service professionals throughout the world, we have responsive, local experts ready to meet your needs.

Scalable Designs

Our solutions scale effectively from small installations to large Class 8 truck charging depots. Deploy new sites rapidly with highly configurable, switchgear-agnostic solutions. At the enterprise level, these solutions streamline electrical power management system (EPMS) integration and enable centralization for large-scale deployments.

Simplified Site Control for DERs

SEL DER control solutions provide reliable and cost-effective control between the utility grid and DERs, including photovoltaic panels and battery energy storage systems. Our approach uses pre-engineered solutions that reduce development time and costs, allowing you to deploy DERs faster.

Securely Manufactured in the U.S.A.

All SEL electronic devices are designed, tested, and manufactured in our state-of-the-art facilities in the United States. We believe that a robust foundation in cybersecurity needs to start at the component level. To that end, we've developed a five-part approach to supply chain security:

1. Build trusted supply chain networks by fostering strong supplier partnerships.
2. Ensure component integrity and availability while minimizing the impact of disruptions.
3. Verify the security of firmware and software with rigorous internal testing and digital signatures.
4. Protect operations and control access with a layered approach to security, including exhaustive background checks for all SEL employees.
5. Monitor for quality and security vulnerabilities, releasing service and security bulletins when applicable and supporting customers in their implementation.

Our Solutions

Revenue and Power Quality Metering

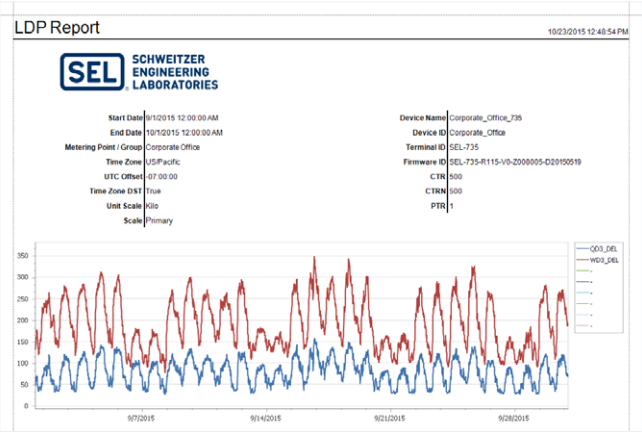
With bidirectional, full four-quadrant, and high-accuracy energy metering, the SEL-735 is the ideal meter at the utility and EV charging depot interconnection. The SEL-735 is a Class A IEC-61000-4-30 meter and exceeds the ANSI C12.20-2015 0.1 accuracy class and the IEC 62053-22 0.1 S accuracy class over a wide current range.

Load Profile Data Collection

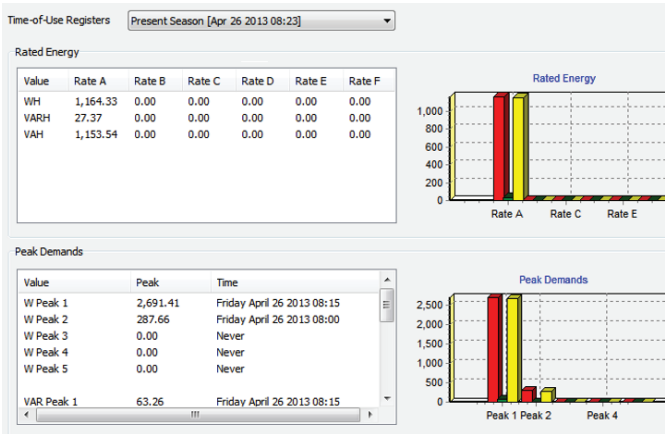
Collect and store billing data with a simple-to-use load profile recorder that captures and stores years of data. Independent load profile recorders allow simultaneous meter and power quality logging of up to 512 data channels. Averages, minimums, maximums, changes, and snapshots can be trended at a rate of once every three seconds. Analyzing the electrical usage for your EV charging depot lets you optimize energy sources and reduce peak demand.

Time-of-Use (TOU) Metering

Capture rate-based demand and energy consumption. TOU metering, configured with a user-defined calendar, allows you to monitor and bill consumption at different rates based on season, day type, and time of day. The SEL-735 program automatically reads and resets demand; there is no need to manually reset meters.



Visualize load profile data.



Capture TOU metering data.

Analytics and Reporting

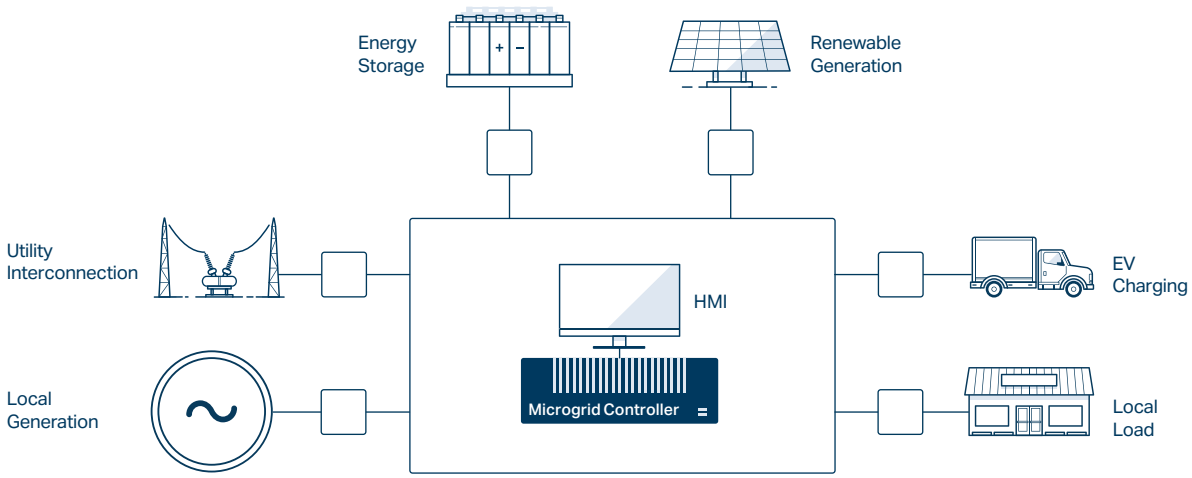
Improve energy efficiency using automated data reporting and analysis. The Data Management and Automation application suite on the SEL Blueframe® application platform collects, stores, and manages device-specific information to simplify the ongoing management of your system.

Continuous Oscillography Streaming and Recording

Our continuous oscillography streaming and recording solution provides gapless 3 kilosample per second (ksps) recording of voltage, current, and energy transfer—so you never miss an event. You can record over a year of streaming data, depending on the memory allocated and the number of recorded channels. Use Synchrowave® software to view real-time or historical data streams and magnitude trends.

Grid Connect DER Control System

DERs may be paired with loads behind the meter to help reduce energy bills or sell energy back to the utility when the load is minimal. Grid Connect, an add-on feature for the SEL Real-Time Automation Controller (RTAC), enables you to securely and economically control the point of common coupling (PCC) and solve common interconnection issues. This control system contains pre-engineered function blocks for controlling the PCC, which helps get renewable projects online sooner than developing custom project-specific controls.

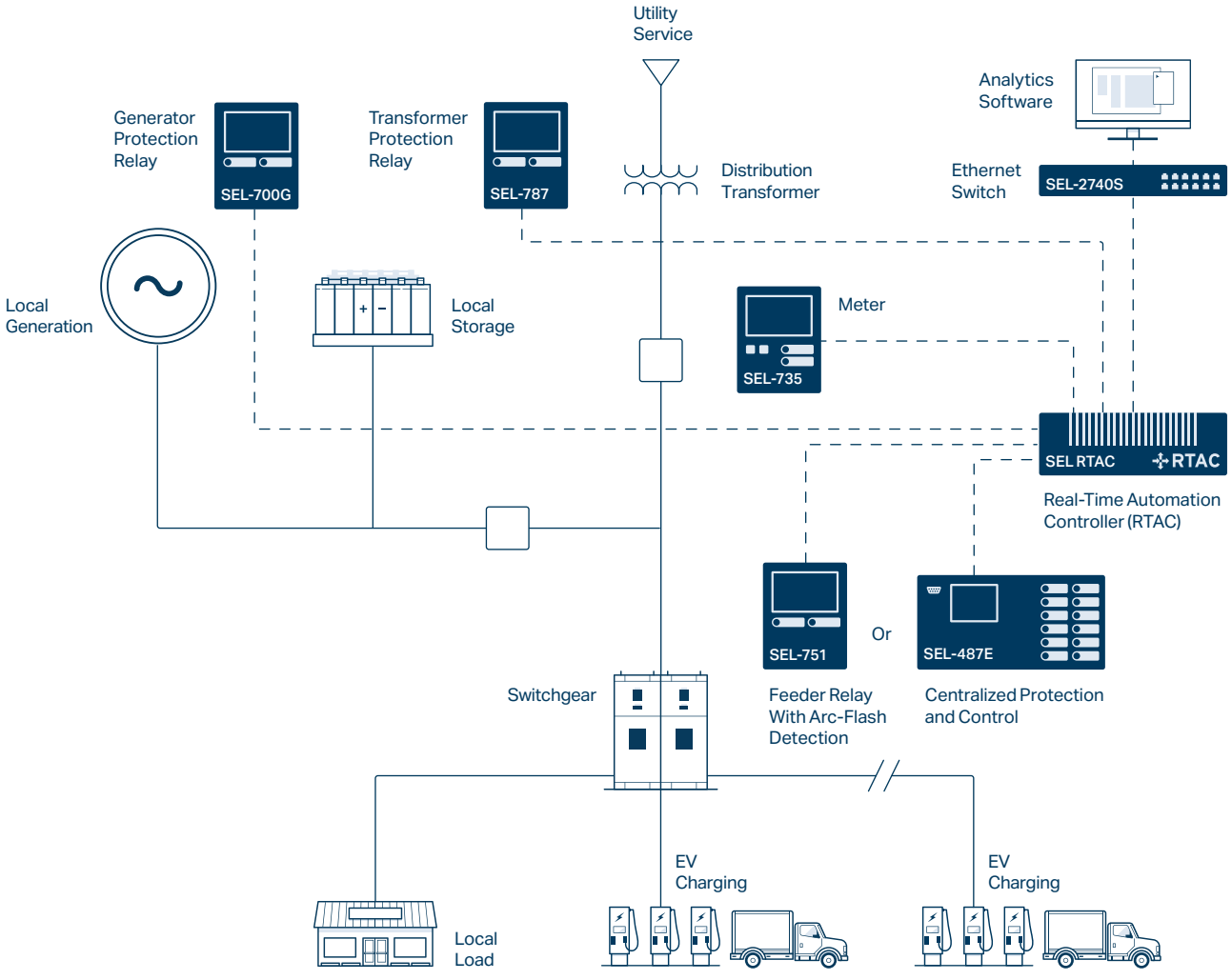


Critical Protection and Control

Detect and isolate faults to minimize power disruption to your site. Safeguard transformers with multiwinding protection, frequency tracking, and through-fault monitoring and protection. Monitor utility interconnections with integrated IEEE C37.118 synchrophasors and enhanced circuit breaker monitoring.

Outdoor Enclosures

We integrate our equipment with hardware from third-party vendors into a single assembly or kit, enabling one-stop shopping for parts and labor. Every solution is designed, assembled, wired, and tested to meet your specifications and exceed your expectations. We create a single part number for your custom enclosure solution design, simplifying repeat ordering and approvals. The fully sealed enclosure complies with NEMA 4X, IEC 529, and IP66 protection requirements.



Our Services

Comprehensive EPCM Services

From planning and design to installation and commissioning, SEL provides complete EPCM services. Our global supply chain expertise and unmatched commitment to quality ensure a well-defined scope of work, effective budgeting, and a schedule you can rely on.

Design Standardization and Implementation

SEL has delivered energy management systems for a wide range of power infrastructure, including utility distribution systems, hospitals, university campuses, and data centers. Work with us to design standardized metering and microgrid control schemes that expedite the construction of new depots and streamline expansion for existing sites.

System Modeling and Studies

We use advanced modeling and simulation, informed by decades of engineering experience, to analyze system requirements, validate full system designs, and optimize the performance of your system. We wire the actual protection and control hardware that will be installed in your system into a Real Time Digital Simulator test bed and systematically test thousands of adverse scenarios, providing the equivalent of years of operational history in only a few days.

Cybersecurity Preparedness

Strengthen your operational technology (OT) defenses, and streamline the demands of maintenance and compliance. Work with our engineers to evaluate cybersecurity controls, centralize asset management, develop secure remote access, and more.

Manufactured for Reliability

SEL devices are designed to operate reliably for over 20 years and withstand extreme temperatures, atmospheric contaminants, electrical surges, and other harsh conditions—consistently exceeding the highest industry standards for durability and performance.

We back our products and solutions with a ten-year warranty, no-charge technical support and repair services, and 24/7 emergency support.

Contact us today to learn more
about our solutions and services.
selinc.com/evc

SCHWEITZER ENGINEERING LABORATORIES

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