

Power Management for Automotive

www.siemens.com/power-management

Secure Energy Power Supply

Nothing runs without electricity - especially in the automotive industry. Providing a reliable supply of electrical power on demand at all times in automotive plants is the task of power management. The different areas within a plant – the press shop, body shop, paint shop, powertrain, and the final assembly area – all require a flexible, scalable power supply that's tailored to the individual processes.

Our Solutions Approach

When designing your power supply system we take into account all requirements relevant for secure, reliable and economic operation and meet your needs; this means analyzing every aspect of your energy grid and translates them into a complete and integrated solution individually tailored to your requirements in the automotive industry.

Our solutions for your **Energy Center** are built on:

- Protection and power quality
- Power management and automation
- Digitalization and analytics

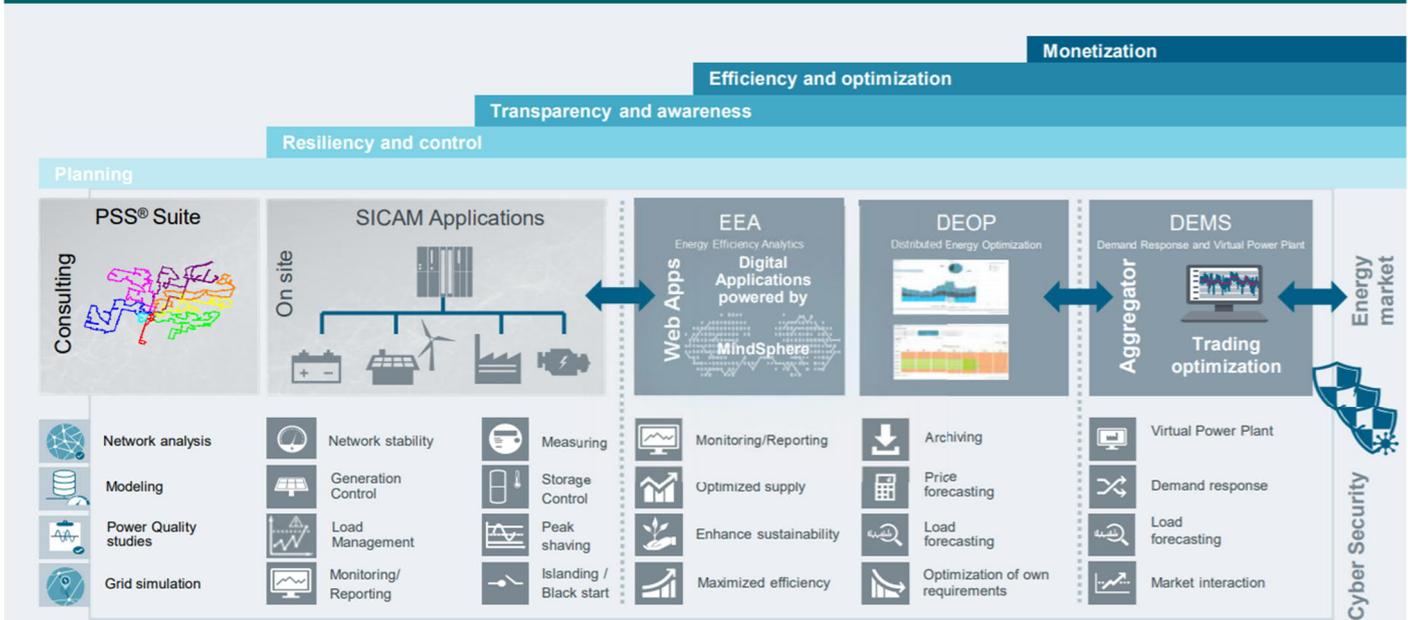
Comprehensive Solutions

Our overall power management solution not only protects your systems against possible damages with SIPROTEC, it also ensures consistent quality of the electrical power supply - and thus of your processes as well. In addition, SPECTRUM POWER control and SICAM substation automation make it possible to react quickly to unforeseeable events and to avoid, or at least minimize, any interruption of the power supply. SICAM applications such as Fast Load Shedding and Generation Control improve the reliability of your grid even further and enhance the efficiency. SICAM multifunctional measuring devices support the acquisition, visualization, evaluation, and transmission of critical power supply metrics for comprehensive tracking of relevant network

parameters for early identification of power quality problems. For redundant connection of protection devices in the high-voltage and medium-voltage distribution system, we rely on commonly used international communications standard IEC 61850 based on Ethernet technology. In parallel to the digitalization of automotive core processes, power grids are also undergoing a radical transformation. The traditional model in which electrical energy is generated and centrally distributed is giving a way to flexible systems that can integrate renewable energy sources, decentralized generation and power storage solutions. With our applications suite – Powered by MindSphere we provide IoT solutions for our customers in automotive. With EEA (Energy Efficiency Analytics) application you get transparency of energy usage in production which helps you to reduce consumption and your overall CO2 footprint. With DEOP (Distributed Energy Optimization), you can manage distributed energy sources, fluctuating power generation and battery storage including E-car charging stations. SICAM SDM (Substation Device Management) gives you automated transparency of your installed base devices and supports cybersecurity patch management.



Figure 1: SIPROTEC Family Products



A dedicated Emergency Power Management System based on SICAM provide a sophisticated monitoring and control system allowing standard SCADA functionality as well as the specific functions that the hospital power system control demands.

Some of the key features of IEC 61850 communications technologies including GOOSE messaging and Parallel Redundancy Protocol (PRP) have been adopted to deliver an Emergency Power Management System in a UK hospital, to improve the performance of the system in both power restoration and island mode load shedding to deliver a system which provides the required response times and reliability in service.

Advantages:

Our solutions are designed to prevent unwanted interruptions of the power supply and thus eliminate possible danger to people and equipment. A further main task of the system is cost-optimized control of the energy used throughout the entire Hospital complex:

High supply availability and reliability

Reduce the risk of an interruption of the supply by selectively disconnecting less important sections of the plant. Built-in load-shedding functions assist you if any instability occurs in the power supply, such as load unbalances or overloads. We optimize the level of automation of your processes, since partial or complete automation of certain handling processes enables high availability and reliability in operation. This in turn impacts affects the overall availability of your facilities.

Short reaction times

Faster reaction is possible in case of faults because all information about the entire network is available at one central point.

Protect your critical loads

Our power quality portfolio provides you a detailed view about your grid situation. SIPROTEC relays are made to protect critical loads from spikes and surges preventing equipment failure and damage.

Consistency

The view of the overall system quickly shows you where the fault lies and how it can be most quickly rectified. With our energy automation system, you can manage and supervise all relevant information about your low- and medium-voltage installations in one system, on one monitor. In an emergency, you can inform all relevant departments quickly, specifically and fully automatically by SMS or e-mail. In this way, you can detect an imminent fault in good time and intervene quickly in the right place to prevent a potential loss of the power supply.

Designed for decades of reliable use

Used products are designed for long-lasting usage. Furthermore, we offer services not only for complex site engineering and deployment programs but also for the complete lifetime.

Ingenuity for life - Siemens is the right partner for hospitals

Based on our experience in energy market, building technologies and healthcare equipment, Siemens is the first choice as a reliable partner for critical infrastructures such as hospitals.



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