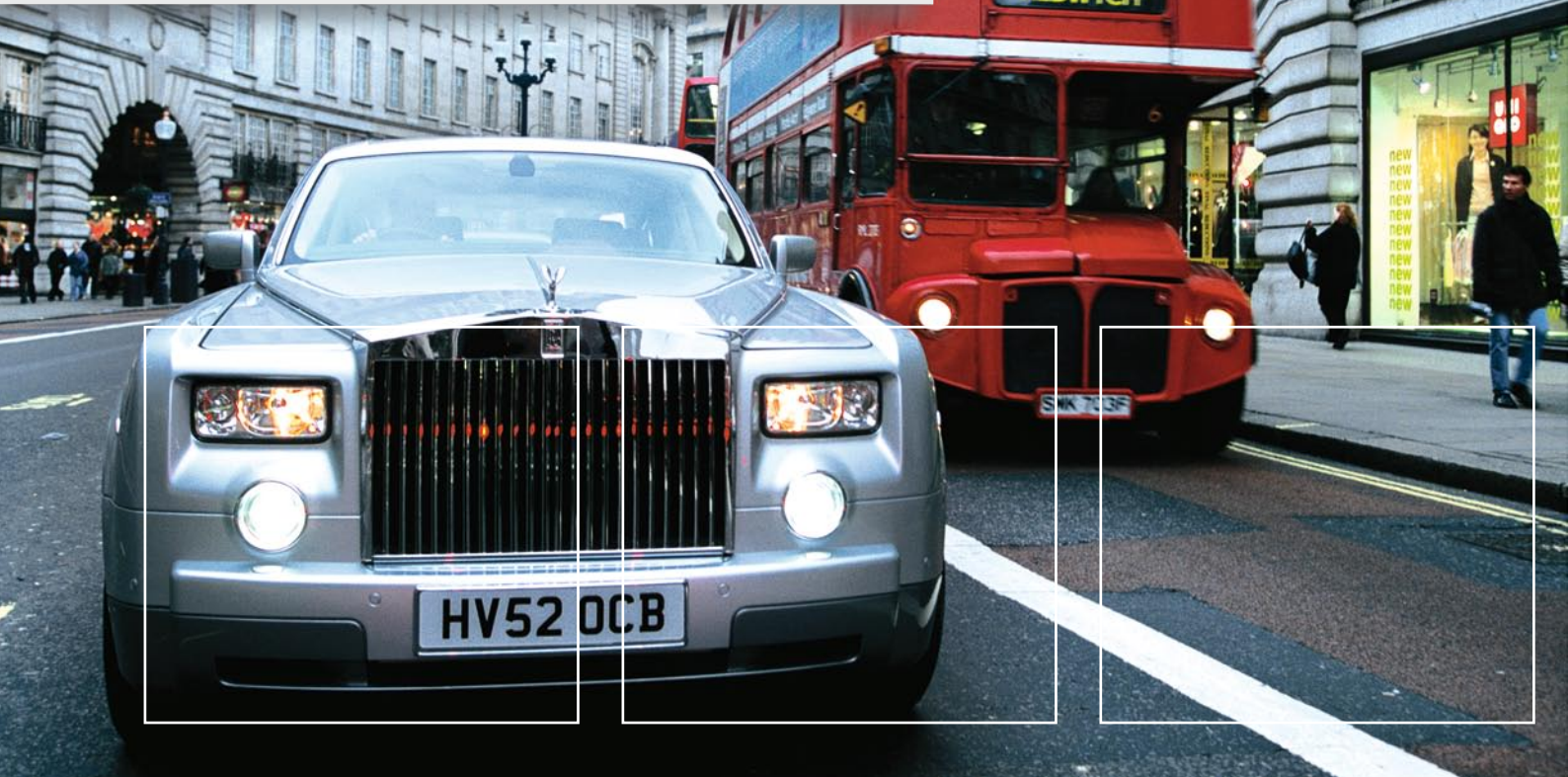


# Automotive Industry: Reliable Power Supply For Production Lines



In the automotive industry, the level of production automation and its reliability are important competitive factors. A tailored and flexible supply of energy to all loads is the basis of a fault-free and efficient automotive production process. That is why, particularly in the automotive industry, the most demanding requirements are placed on the reliability, availability, operation and data acquisition capabilities of power distribution systems, in order to minimise the risk of cost-intensive downtimes.

## Networked, decentralised power distribution systems

A reliable power distribution concept can be created with suitably designed transformers that feed decentralised MODAN switchboards. They can be connected via a coupling busbar in such a way that they can adapt to changed conditions when the power requirement is increased or in the event of a fault with the feeder transformers. The decentralising of the switchboard in the production area also requires the use of networked busbar trunking systems.

## Engineering and service

Moeller not only supplies products for power distribution in production systems, ventilation systems and for conveyor belts, but also handles the project management, site management, commissioning and service involved.



**Rolls Royce Motor Cars, England: Reliable Power Supply for Phantom Production**

Production of the first Rolls Royce started after four years of cooperation between the British prestige company and BMW

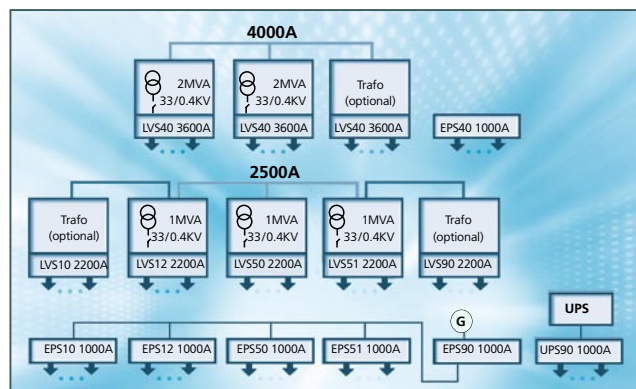
AG. A new plant was built at Goodwood in the south of England for the new Phantom model. The planning and implementation of the power distribution systems involved the fulfillment of a number of special requirements. In addition to uncompromising quality, a high level of flexibility and modularity was required, due to the large proportion of manual production steps used at Rolls Royce. The particular architecture of the factory halls also posed demanding requirements: hardly any straight lines, but lots of curves and greenery in the factory halls instead.

**Modular power distribution, expandable and flexible**

Moeller was responsible for the engineering and implementation of the project. Enertec, a company from Pulheim near Cologne, was responsible for the entire installation and commissioning.

A total of 15 MODAN® power distribution systems were installed, including five which operate as load-centre substations for 3600 A and 2200 A. The compact power distribution units integrate the MODAN® power distribution system and the low-voltage transformer in the protective enclosure. The degree of protection of the MODAN power distribution system to IP54 is a special feature here. Horizontally and vertically mounted switch-fuse strips are fitted behind closed panel doors.

The linking together of the load-centre substations, which are supplied by two medium-voltage networks, was part of the safety concept for the power distribution system. Heavy current busbar systems (4000 A and 2500 A) were installed for this purpose. Medium-voltage busbar trunking systems were used for distributing the power to the final load and for the lighting. This division always ensures the safe and optimised distribution of the required power in the entire plant.



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**BMW AG: production-oriented power supply for motorcycle production hall in Berlin**

In response to the positive sales development of its motorcycles, BMW invested around 120 million euros in the Berlin-Spandau motorcycle plant. A 16,000 sq m extension of the motor component assembly plant provides a new state-of-the-art paint shop. The aim was to provide the power supply of the two-floor production hall with increased flexibility so that it could be adapted quickly at any time to any production changes.

**Area-wide power supply**

The power supply concept provides the production hall with its own medium-voltage station, designed as a 10 section EA10 installation, with a double feeder and longitudinal coupling. The tap-offs to the load-centre substations are divided up, three per block or two plus one reserve. Five load-centre substations with a total of 27 MODAN sections are supplied at different locations and on three floors in the building. The stations themselves consist of a low-voltage main power distribution system with a transformer. The stations in turn are "meshed" with each other. The main connection between the stations on the ground floor and upper floor consists of two heavy

current busbars. These serve both as a coupling and as a backbone for supplying the busbars in the production area. Both busbars are provided with remotely controllable break switches for connecting the current flow between the ground floor and upper floor when required.

**Current flow and communication intelligently integrated**

All important operating data such as current, voltage, power factor, power, work and all relevant messages are logged electronically. The information is collected by a PS4-341 via a Profibus DP network, processed and then transferred to a higher-level system.

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