

## Safe power distribution at Hawe Hydraulik

# Plant downtime is a thing of the past

**Energy efficiency, availability, and reliability were primary concerns when Hawe Hydraulik SE equipped four new production halls with an integrated and technically uniform energy supply. To meet these demands, the company used Totally Integrated Power in setting up the medium- and low-voltage systems.**

**W**here excavators, cranes, or sweeper machines are at work, control blocks from Hawe Hydraulik SE are probably in use. The group of companies with headquarters in Munich develops and manufactures hydraulic components and systems for a wide variety of applications in mechanical and plant engineering. The group recently opened the largest of its seven plants: with four halls, 145,000 m<sup>2</sup> of total space, and 30,000 m<sup>2</sup> of production space, the 360 employees and 45 trainees at the new production site have ample room to implement solutions for mobile hydraulics. In peak times, up to 750 employees can work in shift operation.

### State-of-the-art standards

This is a work environment that meets the highest standards, not only thanks to state-of-the-art manufacturing and assembly technology in mechanical engineering but also through maximum energy efficiency of the production technology and building systems. The group exceeds the specifications of the German Energy Saving Ordinance (EnEV) by 39 percent. "We try to achieve what is technically optimal everywhere," says Matthias Wimmer, project manager of building services at Hawe Hydraulik, describing the driving force of the company. This is especially true for the electric power distribution in the four new halls. In addition to high energy efficiency, the availability and reliability of electrical equipment have the highest priority. After all, the operation runs in up to three shifts around the clock, making unplanned interruptions unacceptable.

### Safe concept in all aspects

For the electrical planning, the technical manager commissioned Christian Kaindl, a long-standing partner of the company. He developed an all-around safety concept for the new building — "with belts and suspenders," as the Bavarian figuratively explains. Key points of this concept: each of the four warehouses is supplied individually, and the load centers are positioned around the hall.

This planning approach is accomplished through Totally Integrated Power (TIP), which implements continuous and thus very efficient and reliable power distribution through precisely coordinated products and systems. TIP also offers technical support services in the planning phase, from the medium-voltage feed to the point of consumption.



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For power distribution, 30 panels of gas-insulated medium-voltage switchgear type 8DJH, 13 Geafol cast-resin transformers, 80 panels of Sivacon S8 low-voltage distribution boards, and 8,000 meters of Sivacon 8PS busbar trunking systems were installed. "A consistent system from beginning to end," says Kaindl, assessing the outcome of the TIP approach. The electrical planner also gushes about the medium-voltage switchgear: "A beautifully compact system!" Equipped with Siprotec protective devices, it ensures safe and efficient power distribution, from the medium-voltage feed to the corresponding loads and the transformers. The medium-voltage supply itself is structured in two rings, a design that contributes decisively to safe and uninterrupted operation.

The transformers had to offer maximum reliability. To minimize loss of production during replacement or repair, each of the five transformer groups has a built-in redundant device. The alternating use of the devices optimizes their availability and facilitates maintenance. The low voltage generated by the transformers is transmitted to the loads through the low-voltage power distribution board and a precisely tailored eight-kilometer-long busbar distribution system — a length that is "no longer feasible with copper," according to Kaindl. But even with short distances, busbars are an interesting alternative to

cable because they are more flexible, take up less space, and are characterized by high operating safety and short-circuit strength as well as low fire load. To ensure that all components are properly sized for optimal network design, the individual plant components are dimensioned and planned using the software tools Simaris design and Simaris project.

### Good planning partner

Electrical planner Kaindl has learned to appreciate the advantages of the TIP concept over the years: "Particularly here in the planning of a large plant, the support and advice of the manufacturer are a valuable aid. In view of the variety of products and innovations, you cannot always know the smallest detail as a planner. And the modern software tools enormously facilitate planning and calculation today." But the decision to use a solution based on Siemens components was made for other reasons: "The technical quality and overall concept of Siemens convinced us," explains Wimmer. ■

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The new production halls of Hawe Hydraulik feature state-of-the-art building management systems



The low voltage is transmitted to the loads through Sivacon S8 switchgear and Sivacon 8PS busbar trunking systems



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