

Power monitoring from the complete cabinet

Precision tool manufacturer Mader relies on Siemens

Customer

Mader GmbH & Co. KG

Location

Pfaffenhausen, Germany

Project

Power monitoring system
for precision tool
manufacturer

Project partner

actensys GmbH

Project period

2014

Delivery and scope of performance

- 17 measuring devices of the 7KM PAC series
- Powermanager software
- Alpha distribution boards

The precision tools of the manufacturer Mader GmbH & Co. KG from Germany's Allgäu region has stood for utmost quality for more than four decades. The company sets equally high standards internally. As the most recent optimization step, a companywide power monitoring system was introduced in 2014. The technical basis for this is found in the Powermanager software, as well as in corresponding measuring devices from the Siemens Sentron portfolio. Here is the special feature: The power monitoring solution is implemented as a complete cabinet. This means that all measuring devices and even the PC with the Powermanager software are combined in an Alpha cabinet enclosure from Siemens.

The challenge: Sustainably shaping the energy future of a production location

The family-owned company has been producing since 1974 in the Bavarian region of Allgäu. In 2009, the company moved into a new plant with some 2,300 square meters of useful area in Pfaffenhausen near Mindelheim. From the beginning, the new buildings and production facilities were designed for energy sustainability. Power consumption was an area of special focus. In this, it was clear from the beginning that the greatest potential for efficiency lays in energy-intensive production.



7KM PAC measuring devices in an Alpha distribution board from Siemens

The total electrical power requirement is at around 300,000 kWh per year. The existing electrical installation was specified for individual load peaks, even though these only occur rarely. "That is unnecessarily expensive", says Managing Director Gert Mader, convinced he made the right choice. That is why the power monitoring system was a logical solution.

"Unlike with the installation of individual components on the construction site, a complete cabinet can already be fully installed and tested through and through prior to commissioning. As a result, commissioning was appropriately quick and seamless on site."



Matthias Mader, Managing Director, actensys GmbH

The solution: Analyzing energy flows

In 2014, the Mader company, working with the engineering firm actensys GmbH from the Bavarian town of Ellzee, introduced such a system. The decision was made in favor of the Powermanager software from Siemens. It monitors and archives the electrical parameters such as voltage, current, power, energy levels and frequencies. In doing so, it creates an essential prerequisite for a transparent analysis of energy flows.

The measurement of the electrical power data is in turn handled directly via the measuring devices from the Sentron portfolio from Siemens. These devices guarantee detection down to the plant level. In total, 16 standard 7KM PAC 3100/3200 models are deployed, as well as a particularly powerful 7KM PAC 4200.

As a special technical feature, the power monitoring solution at Mader is implemented as a complete cabinet in an Alpha cabinet housing. The distribution board of the Alpha series from Siemens is renowned for its high-quality design and great ease of installation. Its modular design offers vast installation options. The arrangement of components can be individually adapted on a project-specific basis.

The Benefits: Identification of saving potentials

Thanks to the complete control of the electrical energy flows, imminent peak loads can be identified in due time and thus prevented. Therefore, if a large number of machines are running simultaneously, the cut-in of the ventilation system can be delayed. Moreover, the data transparency enables individual loads to be pinpointed in terms of their savings potential.

Over the longer term, the Mader company will also be able to promptly detect errors in machines. And the integration of other measuring devices and energy values in the calculations is possible via the relevant bus systems.

Not least, thanks to the introduction of the power management system, the precision tool manufacturer is already prepared today for the planned implementation of the DIN EN ISO 50001 standard ("Power Management Systems – Requirements with Guidelines on Application"). Supported by Siemens and actensys, the company was even able to successfully apply for special purpose government subsidies from the German Federal Office for Economic Affairs and Export Control (BAFA).

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