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Safety through Competence

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Mains disturbance analyzers from
Gossen Metrawatt assure steady supply power.

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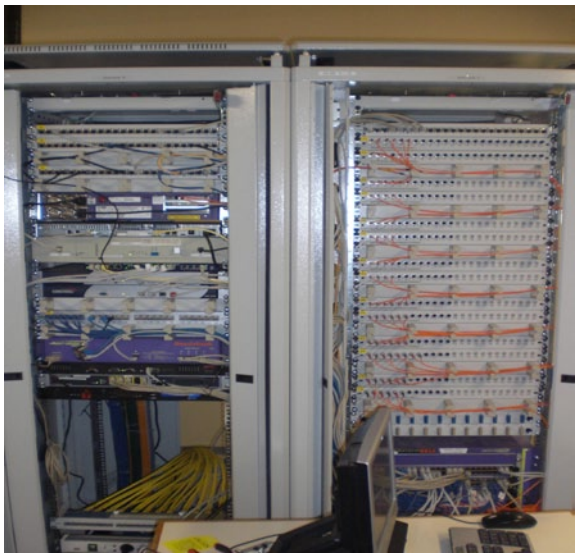
The Forchheim Clinic in Oberfranken, Germany, is one of Bavaria's most innovative hospitals. In addition to modern medical devices, it is also equipped with a video conference system. Doctors from all over the world are thus able to consult with colleagues on-site regarding risky operations, and follow the action at the monitor screen.

Dipl.-Ing. Thomas Müller, technical director of the clinic in Forchheim, decided to monitor the clinic's electrical supply power with the Mavowatt 40 mains disturbance analyzer from Gossen Metrawatt as of immediately.

Forchheim Clinic, Main Entrance



Central Server at the Clinic

This decision was the result of sporadic failures of the UPS of the central server. As is the case with nearly all modern enterprises, there's a central server at Forchheim Clinic as well. It controls and monitors processes, and allows for communication. However, its essential advantage is the central concentration of data records. Information which is stored here can be accessed locally at any time in a decentralized fashion from a slave server. If the doctor needs an x-ray image of patient X or patient Y's medical record, he never needs to leave his desk – the required data is displayed at his PC. Of course the individual servers communicate with each other, exchange information and transfer data records. It usually takes several minutes until the data have been written to the hard disk from buffer memory. In the event that a computer is switched off or shut down improperly (e.g. due to power failure), the data records are usually lost irretrievably. For this reason, the servers are backed up with UPS systems (uninterruptible power supply).

The task of the UPS system is to assure a continuous supply of electrical power to critical load components in the event of a power disturbance.
The server at the clinic was also connected to a UPS, but sporadic failures occurred nevertheless from time to time. The restart procedure was quite time consuming (20 to 30 minutes), because all of the servers first had to be started and then the database had to be reloaded. No new patients could be added to the database during this procedure, and the doctors lost valuable time as a result.

Right from the very start, there was no question for Thomas Müller that the problem had to be internal, because if the interruptions had had an external cause, i.e. at the utility side, the internal generator would have started up immediately. But this was not the case.

The Culprit: the UPS System

Mavowatt 40 in Action: Measurement at the UPS System's Distributor

Measurement was then performed on the system with the Mavowatt 40. Based on his measurement results, Thomas Müller determined that the problem originated in the UPS. A second measurement was performed together with representatives from the UPS manufacturer. A defect in the UPS system's control PCB was detected on the basis of measured voltage characteristics. The component was replaced by the manufacturer free of charge. As of this point in time, no further failures have occurred.

Thomas Müller describes the main reasons for using the Mavowatt 40 from Gossen Metrawatt as follows: "... above all due to its uncomplicated and intuitive menu prompting. Unfortunately (or luckily), I don't use the instrument every day, and this makes it easy to forget one or another of its functions or settings. But thanks to the interactive setup wizard, I don't have to search through the operating instructions for a certain function – the wizard guides me to the desired results step by step. Within just a few minutes, I've finished configuring the instrument's parameters and I can start performing my measurement right away.
The integrated intelligence (answer module) has also proven very useful. It indicates the direction of the disturbance's source (upstream or downstream), which makes it possible to narrow down the fault's location to within a given range and simplifies the determination of its cause."

We would like to take this opportunity to thank Thomas Müller for his comprehensive commentary. We wish him further success with the Mavowatt 40 and stress-free troubleshooting.

Max Borissov
(Product Manager Power Quality)

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