



## **Bender protects** **high-availability building installations**

**Founded in 1972** by five IBM employees, SAP (Systems, Applications & Products in Data Processing) has grown to become the world's third largest Software Company, currently employing around 38.400 people in more than 50 countries. After their very good experience with Bender Residual Current Monitoring Systems in pilot projects, SAP is gradually equipping more office buildings with Bender monitoring systems

„**Optimised availability**, minimised maintenance costs, improved system security, reduced expenditure.“



**In addition**, Bender recently took on responsibility for the fault-free supply of power to the office building in St. Leon-Rot. This modern, high-availability building installation has been equipped for loads such as PCs, servers, hard disk clusters, etc.. If the list is extended to include peripheral equipment such as household appliances, telecommunications systems, printers, lighting, to name just a few, the complexity of fault potentials in such building installations soon becomes apparent.



RCMS460

In one pilot project the new RCMS460 residual current monitoring system was used to record and analyse residual currents in important system sections. The continuous acquisition of measurement data meant appropriate strategies could be developed to anticipate and hence avoid EMC faults and power supply outages throughout the building installation.

### Smart monitoring

The system was installed and commissioned in collaboration with the SAP's facility management. Commissioning involved evaluating the measurement data on a channel-for-channel basis and then defining system-specific



threshold values. Residual current monitoring systems (RCMS460 systems) operate on the principle of residual current measurements, and are capable of simultaneously monitoring 12 current transformer connections or circuits. A central alarm message is generated whenever a configured advance warning and alarm threshold is exceeded. A protocol converter (FTC470XDP) transmits the measurement and alarm values to SAP's process control system unit. Another gateway (FTC470XET) is responsible for monitoring and alarm management. This protocol converter sends the current operating and alarm messages via LAN, WAN or Internet to a web browser for display. All data is stored in a history memory to provide a long-term overview of the system.



FTC470XDP

### Preventive maintenance

By reporting changes well in advance, the system is able to continuously monitor the insulation condition of the electrical system. Threshold values are re-measured and updated by an electrician at ever greater intervals, or whenever changes of use >>>



▶▶▶ occur. Continuous monitoring permits faster and more precise detection of fault causes and hence the timely implementation of countermeasures. The integrated OPC interface and evaluation software can be used to display trends and predict future fault potentials. Thanks to the timely localisation and repair of faulty system sections and equipment, larger and more costly problems can be effectively avoided.

### Differentiated condition assessment

Bender residual current monitoring equipment provides an optimal way of assessing the insulation

condition of stationary systems and equipment in real time. Measured fault currents can be easily assigned to the respective circuit, which facilitates a differentiated safety-relevant condition assessment. With the residual current monitoring systems, an electrician is able to determine clear, specific inspection deadlines as per Regulation 3 of the DGUV (Accident Prevention Regulations, previously BGV A3). This specification usually means a reduction in the inspection deadlines as well an extension of the inspection intervals. ■

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### CONCLUSION

Thanks to Bender RCMS technology, the availability of electrical systems can be optimised, maintenance costs minimised, system security improved and expenditure reduced for recurring inspections of electrical equipment.