Residual current monitoring installed during the construction of a new building and renovation work at ERGO Versicherungen makes possible electrical safety at the highest level

The future needs safety

ERGO Versicherungen AG with more than 50,000 employees and 40 million customers is one of the largest insurance groups in Germany and in Europe. ERGO is represented worldwide in more than 30 countries. In its home market of Germany, ERGO is among the market leaders with 20 million customers across all divisions.

On its site in Düsseldorf, ERGO has several administration buildings. After construction work lasting three years, the extension of the premises on Fischerstrasse in Düsseldorf was inaugurated in May 2011. Both during the construction of the new building and also during the renovation of the existing buildings, the goal of the overall planning was to operate the technical systems with very high availability and the lowest possible downtimes. The need to shut down the electrical systems was to be reduced to a minimum.

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TECHNICAL APPLICATION

To design the two projects using a common concept, residual current monitoring was also installed for the computer centre in the new building, as for the computer centre in the renovated building. By means of the specific usage of this monitoring, shut downs during operation due to regular tests on the systems (e.g. during insulation measurements) can be avoided to a large extent.

Increasing complexity of installations

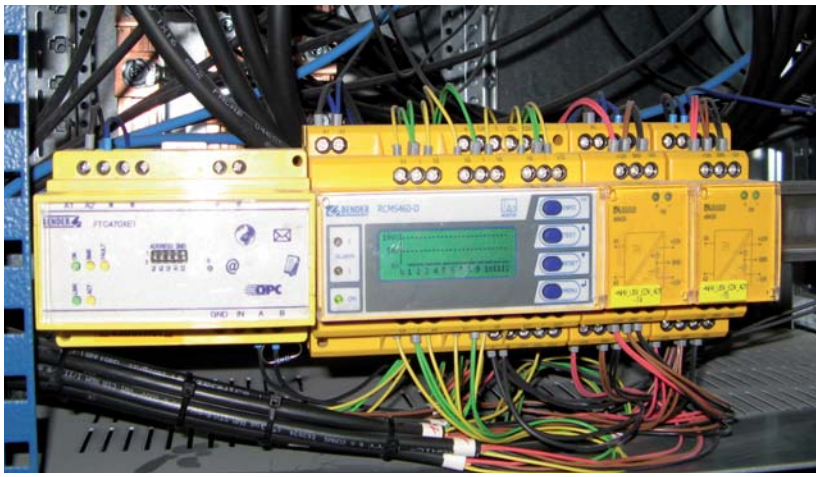
Computer centres in particular require extra care in the supply of power, as here failures can be very costly and also damage a company's image. Also in these centres particularly sensitive electrical loads must be integrated into the system for supplying power with a high equipment density. As a result the requirements on the information technology systems increase: permanently available systems and ever higher computing performance require carefully planned systems that are immune to interference. As despite design in accordance with the standards, modern loads increasingly cause interference in electrical systems ("micro-electrification"). The consequence is undesirable interruptions in operation, damage, fire and EMC interference, and as a result high costs.

Standardisation creates safety

To be able to ensure trouble-free operation, operating organisations must comply with the protection requirements in the German ordinance on industrial safety and health (BetrSichV) and the accident prevention regulations on electrical installations and equipment (BGV A3). These require periodic inspections to ensure the electrical equipment is fault-free. The periodic inspection generally involves three steps: visual inspection, measurement and functional test.

One reason for the implementation of the residual current monitoring was the intervals for the periodic inspection defined in accordance with BGV A3 and the ordinance on industrial safety and health, which would inevitably involve shutting down the related section of the supply system for the insulation measurement. Due to the permanent residual current monitoring, it is only necessary to make the necessary

insulation measurements in faulty sections of the supply system after a repair and on commissioning. The static test intervals in high-availability installations, as represented in particular by computer centres, are a thing of the past.



Checking instead of chance

ERGO is addressing this situation with a highly professional safety concept: on the one hand it is meeting the requirement for consistent, redundant data storage by operating two physically separate computer centres, on the other hand the computer centres are identically equipped with the latest, reliable electrical safety technology in the form of AC/DC sensitive residual current monitoring from Bender.

Along with the highest safety standards during ongoing operation, significant cost savings are also realised using modern residual current monitoring solutions. During the overall planning, the focus was on very high availability, i.e. very low downtimes and the lowest possible running costs. As all electrical installations are maintained by electricians and checked by measurement (RCM), the stationary electrical installations do not need any further regular insulation tests. This view was confirmed as part of a hazard assessment by TÜV Rheinland Industrie Service GmbH in Düsseldorf.

Safety at a glance

The residual current monitors (RCMs) are used in all relevant sectors: AV (normal power supply source), SV (safety power supply source), UPS (uninterruptible power supply), UPS IT and building services systems. The data from the RCMs are transmitted via the BMS bus to the gateway COM460IP. This gateway converts the proprietary data to the standard protocol Modbus/TCP, the data are then transferred by the WAGO controller to BACnet and are therefore available to the building services management system. As can be seen in the figure, the control centre can acquire all measurements that exceed their set values in real time and also log them via any PC connected to the IP network.

We at Bender are proud that with the residual current monitoring systems we can also offer reliable safety technology even for demanding installations in sectors requiring high availability. Due to the usage of residual current monitoring devices, ERGO Versicherungsgruppe AG was able to change from testing its electrical installations to continuous monitoring and therefore significantly simplify the scope of the tests. ■

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SAFETY AT A GLANCE
BENDER RESIDUAL CURRENT MONITORING SYSTEM