

One of the world's most modern water jet plants

for the production of nonwovens for technical applications relies on electrical safety technology from Bender.



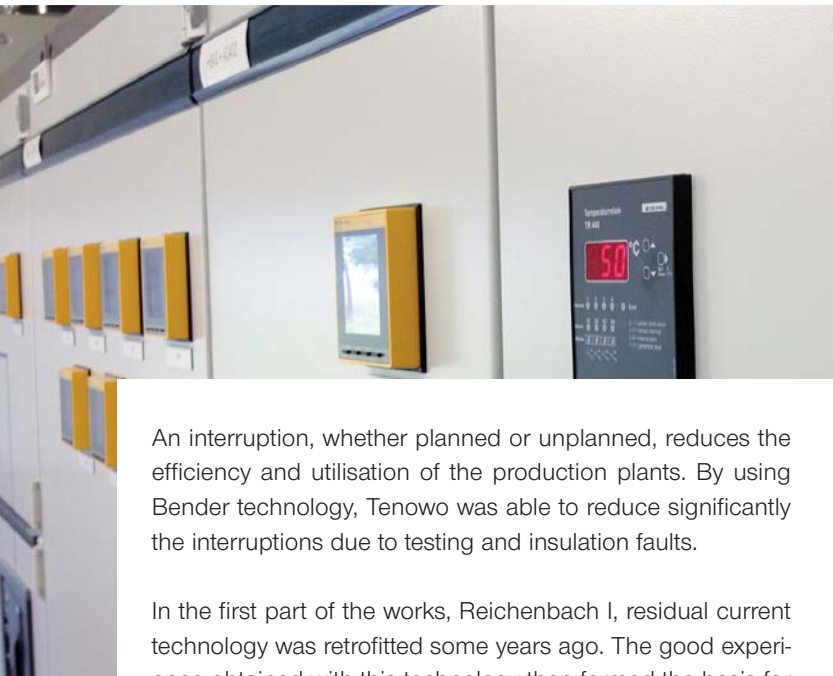
NON-STOP QUALITY

Quality, reliability and customer satisfaction – that is the credo of Tenowo, a subsidiary of Hoftex Group AG – nonwovens division – with production sites in Germany, the USA, in China and India. As a manufacturer of nonwovens, the production site in Reichenbach/Vogtland manufactures high-quality nonwovens for the automotive industry and construction industry around the clock.

The production of nonwovens is an energy-intensive process and the energy demand can only be covered electrically for process-related reasons, for example for ventilation systems and compressors for the water jet machines. It is particularly where electrical power and water come together that increased caution is required.

- **When can we find the time to shut down for periodic verification?**
- **What happens if a fault in the electrical installation unexpectedly interrupts production?**
- **Where does the energy flow?**
- **And what is the real state of my transformers?**
- **Is the network operator supplying the agreed quality?**
- **And above all: Are the people in the works protected at all times?**

The technical team at Tenowo asked themselves all these questions.



An interruption, whether planned or unplanned, reduces the efficiency and utilisation of the production plants. By using Bender technology, Tenowo was able to reduce significantly the interruptions due to testing and insulation faults.

In the first part of the works, Reichenbach I, residual current technology was retrofitted some years ago. The good experience obtained with this technology then formed the basis for its integration in the new installation during the construction phase. AC/DC sensitive residual current measuring technology has been in use there since day one.

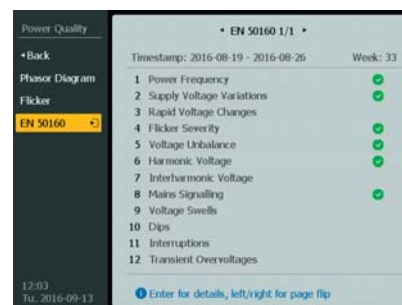
Bender supports the customer with its residual current monitoring system in the product family LINETRAXX®. Machines and installations are continuously monitored for residual currents – an indication of insulation faults. If an insulation fault occurs, the customer is informed immediately.

Of course, all circuits in the five low-voltage distribution systems (LVDS), the central earthing points (CEP) for the LVDS and the safety power supplies are monitored for DC/AC residual currents to suit the application. As such this configuration meets the requirements on continuous monitoring according to IEC 60364-6 and replaces traditional insulation measurement. By recording the events using the Condition Monitor COMTRAXX® CP700, the condition of the installation is documented in a revision-proof manner.

As a company, certified according to ISO 50001:2011, Tenowo is required to record and depict energy flows. Also here Bender offers the optimal solution for the recording of the consumption-related data with the devices in the product series Power Quality and Energy Management (PEM).



LINETRAXX® PEM735



Screenshot EN 50160 report

A further function that is used on the Reichenbach site is the continuous analysis of the situation on the utility's grid. Each of the five 1,250 kVA transformers is monitored by a LINETRAXX® PEM 735 Class A Power Quality measuring instrument. As such the EN 50160 reports for each transformer for the last 52 weeks are available to the operating organisation for downloading. The EN 50160 report evaluates the local voltage quality, based on the characteristics defined in DIN EN 501610:2011-02*. These reports, which are generated automatically by the PEM 735 without any installation or reading effort, enable competent exchange of information with the utility in the event of damage.



* DIN EN 50160:2011-02
Voltage characteristics of electricity supplied by public distribution networks

"During the planning of the extension of our highly modern works in Reichenbach, a combination of residual current monitoring and energy meters with network analysis appeared to us to be a cost-effective, technically perfect solution. During the implementation, the staff from Bender also integrated products from other manufacturers in their system."



Customer comments

TECHNICAL APPLICATION



COMTRAXX® CP700

A dedicated PEM 735 is also installed on the emergency power generator to evaluate the compliance of the emergency supply with the standards.

The heart of the system is the CP700, which as a local touch-panel records data from 75 Bender devices:

- PEM735 – class A network analyser
- PEM333 – energy measurement on circuits
- RCMS460 – residual current monitoring with W...AB current transformers
- Transformer temperature modules from a different manufacturer.

and then processes and displays these data and sends them via Ethernet.

The software supplied offers numerous functions that make it possible to operate the installation in a straightforward and comprehensible

manner and that permit the detection of potential faults at an early initial stage.

Thanks to the usage of a wide range of Bender devices on one system, today Tenowo has a constant overview of the consumption and the condition of the insulation of its installations. The integration of devices from other manufacturers in the Bender communication system makes it possible for the customer to further process also non-electrical, physical data. This is a major benefit, as the customer saves the need to set up a parallel reporting infrastructure.



All values are transmitted via the CP700 to the headquarters in Hof an der Saale. Exact diagnostics on possible faults are ensured via the integrated web server. In this way service visits to Reichenbach, 60 kilometres away, can be optimised. ■

Rainer Schmidt
Hoftex EW-Zentrale
Zentrale Elektrowerkstatt

Bernd Häuslein, BGER

INFO

More information at www.tenowo.com