



Cereal Flakes & Pops Swiss-Made

Location:

Lützelflüh, Switzerland

Challenge:

New power distribution system in the incoming goods, raw materials processing and waste recycling areas.

Solution:

NZM compact circuit breakers, PKZ motor-protective circuit breakers, RMQ pilot devices, PFR residual current relays.

Results:

High quality of the electrical products in plants and in the power distribution systems.

"A future-proof system for personnel and system protection is now in place."

Adrian Schertenleib, Kentaur

Background

In 1846 the Bichsel family in the Swiss Emmental laid the foundation for a successful milling tradition. At that time corn, oats and wheat were processed into food products. Out of this family-owned business the Kentaur joint stock company grew at the beginning of the 20th century. As the first manufacturer of oat flakes in Switzerland, Kentaur launched a "ready-to-eat" Bircher muesli on the market. The development to a leading producer of cereal flakes and pops took place gradually. Kentaur relies on the top quality products of Eaton for the new power distribution system in the incoming goods, raw materials processing and waste recycling areas: the good price/performance ratio of their durable products as well as their outstanding services were the reasons for choosing Eaton.

Challenge

At Kentaur, the constantly high quality of its products and production process is of key importance. The company's traditional strengths lie in its technologically mature solutions: all plants and machines are selected and installed after stringent examination and testing. As well as featuring state-of-the-art technology, the machines and plants have to be robustly designed and should be easy to handle and maintain.

Swiss-made is a quality standard that Kentaur meets in full. During a routine inspection of the Kentaur switchboards, the heavy current inspector therefore decided that the distribution system for the incoming goods, raw material processing and waste recycling areas needed renewing. This caused Kentaur to choose a new switchboard design that meets the latest requirements of the low-voltage installation standard (NIN) both in terms of personal protection and system protection.



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The plant manager Andreas Hebeisen assigned electricians Adrian Schertenleib, Stefan Gerber and Christof Riesen with the task of replanning the power distribution system. The following requirements had to be met: close compliance with all installation standards, optimum use of limited space and keeping within the budget set. The consistent use of circuit breakers instead of fuses in order to reduce downtimes was the first technical decision made.

As Eaton products such as motor-protective circuit breakers, operating elements and contactors, were already successfully in operation in Kentaur plants and machines, the project managers contacted Eaton. They jointly worked out a solution to meet all customer requirements and standards stipulated. Kentaur then evaluated solutions proposed by competitors.

Eaton was then awarded the contract to provide a solution consisting of various circuit breakers (NZM1 160 A/ 200 A/ 250 A, NZM2 80 A/ 100 A/ 125 A/ 160 A and NZM4 630 A) as well as several PFR residual current relays. The customer was impressed by the compactness of the PFR with a design matching that of the NZM circuit breaker and its functions.

Solution

The Eaton residual current release modules are matched to fit the base of the NZM1 (also on the right of the NZM1) and NZM2 circuit breakers. These device combinations perform the following tasks: control and switching of currents up to 250 A, as well as overload, short-circuit and residual current protection.

Alternatively, the modules can be combined with N switch-disconnectors. No external auxiliary voltage is required for this. The residual current protective module of the NZM2 is not restricted by the mains voltage. Customers can choose either pulse current or universal current sensitive models. Threepole and 4-pole variants with different rated residual currents from 30 mA up to time selective 3 A are available for virtually every mains constellation.

In the event of a fault, the RCD switch on the NZM1 first indicates the increasing residual current via an LED. Only when the set residual current is exceeded is the circuit breaker tripped by the RCD release, thus opening the main contacts. The cause of the trip is indicated mechanically on the NZM1 and NZM2. Users can clip on optional auxiliary

contacts which indicate the trip remotely. In order to restore the power supply, circuit breakers and residual current releases must be reset and reclosed.

The PFR residual current relay with a ring-type transducer is also available. These ring-type transducers are compactly arranged on the cable run and form a functional unit together with the measuring relay that is clipped onto the DIN rail as required.

The new relay/transducer combinations cover operating currents from 1 to 1800 A. The application range covers general power distribution requirements right through to single motor feeders. The residual currents that are detected and processed by the relay are between 30 mA and 5 A.

Results

The company electricians Adrian Schertenleib, Kentaur, summed as follows: "At Kentaur several production lines for different processing technologies are in operation round the clock. For example, the cornflakes plant for all cereals, the puffing plant for producing cereal pops, plants for milling (waste recycling) and peeling (raw material processing), flaking and coating

as well as packaging plants. For this reason we must be able to fully rely on the quality of the electrical products in plants and in the power distribution systems. The space and the budget available to us for building the new panels for the incoming goods, raw material processing and waste recycling areas were limited. However, we naturally did not want to forfeit any of the requirements and standards that had been specified beforehand. The employees at Eaton in Switzerland gave us highly expert advice, as well as offering a comprehensive service with very fast response times. A future-proof system for personnel and system protection is now in place."



The power distribution system of the production plant: Eaton's 160 A - 630 A NZM compact circuit breakers are used

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Publication No. CS083073EN
March 2016

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