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Werner Hundertmark, responsible for electrical engineering at Meier-Brakenberg

Clean Solution

Location:

Extertal, Germany

Segment:

Machinery

Problem:

Development of a high pressure cleaning system with increased efficiency and demanding requirements on the technology and components used

Solution:

RMQ Titan control circuit devices, CS wall-mounted enclosures, complete switchgear technology with main switch, DILM contactors

Results:

A reliable solution with CS wall-mounted enclosures on all stationary high pressure cleaning systems with comprehensive safety for the integrated components

Contact Information

Michael Kipker
miachelkipker@eaton.com

Christian Buecker
Trade Press Manager
ChristianBuecker@Eaton.com

Background

Economy and efficiency are also becoming increasingly important in the agricultural sector. Innovative technical solutions can also make an important contribution here. Meier-Brakenberg is a company based in Extertal, Germany, which specializes in products for livestock farming. The family-run business relies on Eaton technology and CS wall-mounted enclosures for its stationary high pressure cleaners.

The roots of Meier-Brakenberg go back to when the company had its own pig fattening farm. The creative inventiveness and practical inclination of the founder and CEO Wolfgang Meier enabled him to develop technical solutions that simplify his work and increase the output and profitability of his farm. A few years ago, this led to the idea of marketing these products professionally. Today, the medium-sized company offers a wide range of technical solutions: From soaking and

cooling systems for pigs, to mobile and stationary electronic weighing devices, watering systems, medicine dispensers, disinfection units, right through to a range of high pressure cleaners.

"Our corporate philosophy is summed up by the motto 'Ideas from Practice' and is based on the fact that we know the challenges and conditions from the experience we have gathered on our own farm," the livestock farmer explains. "Our farm is now used as a permanent test site for our product developments." New ideas have to be tried and tested as suitable for practical use from prototype development right through to the finished product, even in continuous testing under stall conditions, before Meier-Brakenberg includes them as marketable and functional devices in the portfolio. "This development process enables us to ensure that our products fully meet customer requirements and

expectations," Wolfgang Meier explains.

Quality plays a key role here. In the agricultural sector, consistency and a long service life have the utmost priority. This particularly applies to high pressure cleaners, which are some of the most technically sophisticated products of this family-run business, and which are required to offer several hundreds of reliable operating hours a year. Several hundred devices per year are sold both to customers both inside and outside Germany. This makes the company one of the leading German suppliers in the livestock farming sector. Meier-Brakenberg is also increasingly supplying products to other sectors such as the waste disposal sector, abattoirs and nurseries.

Challenges

Farmers frequently use mobile high pressure cleaners for smaller stalls containing around 1,000 pigs. For farms rearing



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2,000 pigs or more, a stationary high pressure cleaning system soon pays for itself. This offers the user a greater level of convenience and helps him to work more efficiently. In this case, the cleaner is normally installed in the central passage way of the stall. The operator can access the high pressure system via stationary stainless steel high pressure lines and different faucets distributed around the building. In this way, even several users can clean different sections at the same time before new batches of animals move in.

"The optimum cleaning process for our customers' applications primarily requires large volumes of water rather than very high pressures," explains Werner Hundertmark, responsible for electrical engineering at Meier-Brakenberg. "For example, our new frequency controlled high pressure pumps provide a washing force of up to 70 l/min."

The use of the high pressure cleaners in livestock farming places demanding requirements on the technology and components used. The ambient air, containing dust, moisture, ammonia and subject to changing temperatures, is a considerable source of stress, as are the narrow stall passages and rough handling of the equipment.

Solution

In order to operate electrical components safely and reliably in this kind of environment, the systems and particularly the

enclosures used must meet very exacting standards. "We have had a good experience with the products of Eaton over many years," says the electrical engineer. Besides the entire switchgear technology including the main switches and DILM contactors, Meier-Brakenberg also decided to use the control circuit devices of the RMQ Titan series and the CS wall-mounted enclosures from Eaton.

The CS enclosure series, made of solid sheet steel and with protection to IP66, is used today by Meier-Brakenberg in all stationary high pressure systems, and offers comprehensive safety for the integrated components. With 45 different enclosure sizes and dimensions between 250x200x150 mm and 1,200x1,200x250 mm, the right variant is available for any application. A fully integrated sponge-rubber gasket in the door ensures the high degree of protection. A surrounding rain channel profile around the enclosure opening offers protection against the penetration of liquids and dirt when the door is opened.

The CS enclosures comply with impact resistance category IK09 in accordance with the EN62262 standard and thus protect the inside of the cabinet from mechanical damage at the same time. Their powder coated surface provides an abrasion and corrosion resistant protection. In order to ensure the safe installation of the switchgear, a 2 to 3 mm galvanized sheet steel plate is used as a mounting plate for the wall-

mounted enclosure installation, or alternatively, a perforated variant for cage nuts or a powder coated solid sheet steel plate.

The operator can take out the door without much additional effort for further mechanical fitting, such as for the installation of the RMQ-Titan control circuit devices. The quick-change technology of the internal covered hinges enables them to be removed and refitted easily so that the door can be hung on the left or the right in no time.

Results

"As our Meier-Brakenberg brand stands for high quality premium products, we are always on the lookout for solutions for our devices that

meet our demanding requirements with regard to service life and robustness," Werner Hundertmark explains. "The excellent price-performance ratio of the CS enclosures also impressed us. However, we appreciate in general the high level of consistency and reliability that the Eaton products offer. I know no other supplier, for example, that can supply such a wide range of main switches over years with such a constant level of quality."



Product range of stationary high pressure pumps



Eaton Industries Manufacturing GmbH
Eaton Electrical Sector EMEA
Route de la Longeraie 7
1110 Morges, Switzerland
www.eaton.eu

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