



Packaging Artists

Location:

Fürstenu, Germany

Segment:

MOEM

Problem:

downstream final packaging machines should ideally be approved by a 'nationally recognized testing laboratory'.

Solution:

XV400 touch display PLC
RMQ pilot devices
PKZ motor-protective circuit-breakers
NZM circuit-breakers

Results:

Eaton offers comprehensive support for MOEMs and panel builders on issues relating to exports to North America, such as project consulting and/or training seminars.

Contact Information

Hanns-Wolfgang Esser
Support Manager
Hanns-WolfgangEsser@Eaton.com

Christian Buecker
Trade Press Manager
ChristianBuecker@Eaton.com

Particularly when exporting to North America, we have relied for several years on the extensive expertise of Eaton

Guido Grewe, Meurer

Background

In the global environment the requirements placed on state-of-the-art filling machines are constantly changing. Today's market requires high-speed systems that are also highly flexible and reliable. Any downstream final packaging machines must meet the same requirements and should ideally be approved by a 'nationally recognized testing laboratory' so that they can be accepted in the North American market without any problems. With its engineering design, the meurer group relies on Eaton's extensive know-how of many years.

Challenges

The meurer group has been producing high quality and flexible final packaging systems for more than 40 years, and its machines are used worldwide for a wide range of products and sectors. The company's latest CM/HHS high-speed packaging machine groups aseptic carton packs automatically and packs them in a full wrap in shrink

film. The highly flexible machine is designed for all typical market volumes between 100 and 500 ml. It offers an outstanding output of up to 160 triple-packs a minute, which corresponds to up to 30,000 single packs an hour. The flexibility of a packing unit offers an output of 2 to 18 drinks packs, depending on the output of the line. An automation system with a servo multi-axis system enables the machine to adjust itself virtually automatically and smoothly to the fed packaging volume of between 0 to 500 packages a minute.

The CM/HHS machine is operated via an Eaton XV400 touch display PLC. Besides the PLC, the HMI/PLC comes with an integrated 10.4 inch SVGA display with rugged infra-red technology. The innovative touch display provides clear and flexible menu guidance in several languages and enables meurer to sell machines worldwide using only one hardware and software solution.

The meurer group exports around 70 percent of its products, of which 5 to 10 percent are



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The labels indicate that the switch cabinet was approved by ESA inspectors (Electrical Safety Authority).

exported to North America. Two thirds of all machines are used for the secondary packaging of foods. In order to ensure a high level of machine quality and availability, meurer also offers additional worldwide services in addition to its large vertical range of manufacturing.

However, the global sale of machines not only requires the use of components with UL/CSA approval such as Eaton's circuit-breakers, miniature circuit-breakers and motor-protective circuit-breakers or contactors, but also a UL/CSA approved switchboard design with UL/CSA Type 4x protection, previously called NEMA 4x. After all, a product that has achieved recognition around the world does not necessarily meet the requirements of North American standards.

A one-off acceptance approval of a switchboard design by UL or CSA inspectors is a good basis for series production. However, all switchboard systems and the electrical equipment of machines and plants still have to be approved once more by local AHJ inspectors (AHJ = Authority Having Approval) at the point of installation. Without

a successful AHJ approval, plant or machine operators cannot be supplied with power from utility companies and do not meet the requirements for obtaining insurance for the system. The operating approval is documented by the signature of the AHJ.

Both for customers and producers of a machine, it can still be a lengthy and costly process if local inspectors find that a switchboard system is not export compliant and the commissioning of the system/machine fails. As there are well over 2000 independent jurisdictions in North America which occasionally interpret the standards differently, producers can only assess the risks involved with an approval with great difficulty. However, these risks were reduced for the meurer group thanks to the cooperation with Eaton.

Solution

In order to ensure that its machines can be exported to North America, meurer uses the services of Eaton as a competent and reliable partner. Issues relating to exporting to North America involve however more than just UL/CSA components, which require for example

larger creepage and clearance distances or specific AWG cable cross sections. What is required instead is a sound knowledge of the North American Codes and Standards (as well as NEC/CEC, UL 508/CSA 22.2 No.14, UL 489/CSA 22.2 No. 5-09, NFPA 79 (Industrial Machinery Panels), UL 508A (Industrial Control Panels)). Furthermore, North American electrical practices such as specifying the degree of protection to NEC/CEC (UL/CSA Type 12, 4X etc.) or the stating of the electrical specifications (in HP, Pilot Duties, AWG etc.) must also be taken into account.

An unrestricted approval of components does not allow the same degree of freedom in system design as it does in the IEC world: Different types of switchgear cannot be simply combined by the design engineer or manufacturer independently. North American regulations also require the testing of device combinations which have to be documented in a joint report. Even more reason therefore, to use approved device combinations such as those from Eaton.

Depending on customer requirements, meurer fits its packaging

machines with various makes of switchgear and documentation, so that separate engineering designs have to be made on different CAD systems (such as ELCAD, ePLAN and E3). For this suppliers should follow a "do it right from the start" principle. Wolfgang Esser at Eaton Industries, Bonn, offers comprehensive support for OEMs and panel builders on issues relating to exports to North America, such as project consulting and/or training seminars.

Results

Dipl.-Ing. Guido Grewe, team leader for electrical engineering at meurer, had this to say: "Our strategy aims to "inspire our customers with tailor-made solutions." As this applies to customers worldwide we supply turnkey final packaging machines, so to speak, that are ready to use. The approval obstacles vary all over the world. Particularly when exporting to North America, we have relied for several years on the extensive expertise of Eaton (formerly Moeller)."