

Success Story: IMSB Embalagem

Markets Served
Packaging machines



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easy-to-use software
and simple identification
of problems are among
the many benefits
SmartWire-DT provides
for us.*

*Paulo Zan, Electronics Engineer
at IMSB Embalagem*

SmartWire-DT reduces wiring time by 94%

Location:

Bento Gonçalves,
Rio Grande do Sul, Brazil

Segment:

Machine Building

Problem:

High cost of building control panels

Solution:

SmartWire-DT panel wiring system,
HMI/PLC XV102, PKZ motor
protection relays, DIL contactors,
RMQ-Titan pushbuttons

Results:

Dramatic reduction in panel wiring
time and costs

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Background

IMSB Embalagem is a member of the IMSB Group, one of Brazil's leading developers and suppliers of sanitizing and packaging machinery to companies in the pharmaceutical, chemical, food and cosmetics sectors. Established for over 15 years, the IMSB Group sells its products not only in Brazil but also around the world and it has an installed base of over 2,500 machines.

The group prides itself on providing personal service for its customers, and on developing bespoke solutions that satisfy their requirements accurately and cost effectively. To this end, it has a specialist design team of 26 qualified and experienced engineers.

IMSB Embalagem is Brazil's leading developer of machines for packaging applications, and the Embalagem division generates around 40% of the revenues of the IMSB Group.

The company typically manufactures in excess of 120 machines each year for a diverse range of applications.

Challenges

In every country of the world, including Brazil, the market for packaging machinery is extremely competitive and, even though the benefits of personal service and customised equipment are appealing to end users, they are rarely sufficient to completely outweigh price considerations. For these reasons, IMSB Embalagem is constantly seeking ways to reduce the production costs of its equipment without compromising on performance, versatility or reliability.

A detailed cost analysis carried out by the company revealed that the control panels it produces for its machines were a significant part of the overall cost of the machine. The analysis also showed that one

of the most expensive operations in the production of the panels was wiring, which typically took around 4½ hours for a skilled person to complete.

IMSB Embalagem therefore identified panel wiring as one of the key areas where cost reductions would be highly desirable, provided always that these reductions could be achieved without adverse side effects.

Solution

IMSB Embalagem has had a long and successful relationship with Eaton, which began more than eight years ago when the company adopted Eaton XC-200 programmable controllers (PLCs) to provide convenient and flexible control solutions for its more complex machines. As a result of this relationship, Eaton became aware of IMSB Embalagem's interest in finding ways of reducing panel wiring time, and



Powering Business Worldwide



Conventional control wiring



Lean Solution with HMI/PLC and SmartWire-DT: The wiring time was reduced by 94% and data transparency considerably increased

provided a demonstration of the SmartWire-DT system.

The SmartWire-DT system entirely eliminates the need for conventional panel wiring and instead uses pre-assembled plug-in cables to link components within the control panel. Not only does this approach greatly reduce the time needed to wire the panel, it also virtually eliminates the possibility of wiring errors. Many of Eaton's standard components can be connected to SmartWire-DT, not only XC-200 PLCs, but also the PKZ motor protection relays, DIL contactors and RMQ-Titan pushbuttons that IMSB Embalagem was already using.

In spite of the apparent benefits offered by the SmartWire-DT system, the engineers at IMSB Embalagem were initially reluctant to adopt it. They were particularly concerned that the company's customers would no longer feel confident about solving electrical problems on their machines because SmartWire-DT appears to involve complicated network technology. To demonstrate conclusively that these objections were groundless, Eaton worked closely with the IMSB Embalagem team to develop a control system based on SmartWire-DT for one of its current projects – a machine that receives bottles from a

production line, collates them and loads them into cases ready for despatch to retailers.

Results

The control panel for the bottle-packing machine proved easy to design and build using the SmartWire-DT system, and IMSB Embalagem was instantly impressed at the very short time needed to complete the control wiring. In fact, once the components had been mounted, the whole wiring process took just 15 minutes, compared with the 4½ hours it would have taken using conventional control wiring. This is a reduction of 94%, which translates into a very significant cost saving.

Reduced wiring time was not, however, the only benefit that resulted from using SmartWire-DT. The control panel had a much neater appearance than it would have done with conventional control wiring and, of course, there were no wiring errors, which meant that very little time was needed for testing and commissioning.

In addition, the IMSB Embalagem engineers found that they could substantially reduce the design time for the panel by making use of Eaton's SmartWire Assist software package, which allow control panels to be configured quickly



Eaton's SmartWire Assist software package allows control panels to be configured quickly and easily, and automatically generates all necessary documentation, including component ordering schedules

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A last but nevertheless very important point was that the anticipated end user resistance to the use of SmartWire-DT failed to materialise, not least because, in the unlikely event of a problem, the powerful inbuilt diagnostics offered by the SmartWire-DT system make faultfinding easy.

"With the SmartWire-DT system, it was possible for us to connect all of the contactors, pushbuttons and signalling devices used in our panel with a single network cable," said Paulo Zan, Electronics Engineer at IMSB Embalagem. "There was no need for us to use any conventional control wiring at all. Fast assembly, easy-to-use software and simple identification of problems are

among the many benefits SmartWire-DT provides for us."

Following the outstanding success of its first control system based on SmartWire-DT, IMSB Embalagem has decided that it will be using SmartWire-DT extensively for future projects, and the company has already placed orders with Eaton for SmartWire-DT equipment to be used in a second bottle packer and in a palletiser.

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