

Enclosure Construction

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engineering center

RIPPLOH

Staying ahead
of low-cost competitors

Automating design brings out the company's best

As a relatively small manufacturer of switch- and control-gear systems, Ripplloh has built its reputation on the consistent high quality and performance of its products. Andreas Ripplloh, a graduate engineer and since 1995 the company's managing partner, saw a paradox in its business model. "We develop automation systems, but did not ourselves use the advantages offered by automation," he says. With competition from Eastern European companies starting to pressure the company's business, Ripplloh began investing in solutions that have lowered its production costs and allowed it to turn around orders much faster. In the engineering department, that's meant delving into the mechatronic opportunities provided by the EPLAN Engineering Center.

On the production side, the company, located in Ostbevern, near Munster in western Germany, invested in a CNC unit that machines the housing of the enclosure for a

“Ripplloh Elektrotechnik GmbH automated the design and production of enclosures through the use of a virtual component modular system stored in the EPLAN Engineering Center (EEC). As a result, setup and production times have been slashed while quality has improved, helping the company live up to its corporate promise to be “the consistent solution” and meet the threat of low-cost competition from Eastern Europe.”

ePLAN your engineering

USING EEC

allows to work faster
and with higher quality

“We now work much faster and from a cost standpoint, we are holding our own against our competitors from Poland and the Czech Republic, and can leverage our advantages of flexibility, speed and proximity to customers,” says Andreas Ripplöh.



uniform appearance. It even runs after production workers go home – a “workerless shift” that saves time and money. When that investment proved its worth, Ripplöh automated important functions in the cabling of enclosures. An automated cable preparation tool determines the exact cable length from the wire list of the routing program in the E-CAD system. The system cuts cables to length and assigns connection elements. Each cable is labeled in accordance with the drawing. When wiring the unit, production workers no longer have to refer to the diagram.

The next step: Automation in engineering

On a parallel track, Ripplöh has been moving forward with automating its engineering. “Our customers are placing increasing emphasis on flexibility and speed,” says Andreas Ripplöh. “For some, we are turning around orders in ten days. We have to be well-structured in our work, can’t afford to make mistakes and certainly don’t have time to reinvent the wheel.”

Already an EPLAN 5 user, Ripplöh decided to structure electrical engineering design more systematically using the EPLAN Engineering Center (EEC). The EEC allows the configuration and parameterization of machines or machine systems on a functional module level. This applies not only for electrical engineering design, but can also be extended to other disciplines such as I&C technology or the PLC programming. Once these functional blocks, like the direct drive or frequency converter interface, have been defined, the designer can call them up by a click of a mouse and assign the desired parameters, such as performance data, and generate customer-specific projects automatically.

Working faster, delivering higher quality

“We are working markedly faster and more structured,” says Andreas Ripplöh. “Quality has also improved, because we are now using standard modules and this approach means maximum avoidance of errors.” Standardization is also having a positive effect on production. “Previously, minor details were often left out of diagrams and schematics, since the designer assumed the workshop would handle the details,” he adds.



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ENGINEERS

from different disciplines
working together

“Now the production team doesn't fill in such details but rather works off the bill of materials, which speeds up the workflow. This applies not only to wiring, but also to mechanical components such as the screwed connections.”

Flexibility – also in case of unplanned changes

From the designers' perspective, working with the EEC relieves them of extensive re-petitive work and the risk of errors associated with such tiresome repetition. This applies both to the initial engineering as well as modifications. Ripplloh recently had to change about 2,000 I/O addresses for a large enclosure project to satisfy a customer. No problem for the EEC. With a single click, 3,000 pages of documentation were revised automatically.

Connection to the ERP system

Since the EEC brought such a performance boost, the company deferred upgrading its electrical design software from EPLAN 5 to the new EPLAN Electric P8 until the necessary interface between the latter and the EEC was available. The EEC is not just an extension of E-CAD. It's a mechatronic bridge to other parts of a company's design and process control, including the ERP system. For Ripplloh, that integration with its ERP system has resulted in improved workflows in ordering and logistics based on the use of uniform data. Next up, it wants to use EEC to establish a modular software system.

Working methods with EEC

The EPLAN Engineering Center breaks down projects into functional units where they can be worked on by engineers of different disciplines.

“The designer of a robot cell for automotive assembly uses function modules from the EEC, such as grippers or lifting units, to incorporate key elements into the project. He or she adds the desired parameters (performance, size, etc.) to this module – and the result is reflected automatically in the mechanical, electrical and pneumatic drawings, since the EEC is based on a uniform, cross-disciplinary knowledge database.”

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EPLAN Engineering Center – Future of engineering

SUMMARY

The EPLAN Engineering Center is an example of mechatronic integration – the future of engineering – where designers from different disciplines can work on the same project, within the same virtual work area, and see changes in real time rather than working separately and having to pass work back and forth between departments. Business data is also integrated into the module. This leads to better collaboration among engineering disciplines for significantly faster design, fewer opportunities for errors and much less repetition.

Find out more about Ripplöh on www.ripploh.de

ePLAN *Your Engineering*



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