# Cards on the Table

Elantas Beck modernizes 19" interface cards with the compact remote I/O system, excom, from Turck

The products made by Elantas Beck are found in numerous electrical devices, including household appliances, television sets, wind turbines, computers and lighting. The company develops, produces and sells impregnation resins, potting compounds and encapsulating resins (thin or thick layer), that are used in electric motors, transformers, generators, capacitors, printed circuit boards and sensors. Elantas Beck is part of the Elantas Electrical Insulation of Altana AG, one of the leading developers of specialty chemicals .

At the company's headquarters southeast of Hamburg, approximately 120 employees develop and produce several thousand tons of resins for the electrical industry every year. During production, the products run through reactor line where the synthetic resins are heated, condensed and processed in vacuum. To carry out this process reliably, numerous monitoring stations are installed. During the construction of the plant, the analog and binary measuring signals were sent to 19" interface cards installed in large racks.
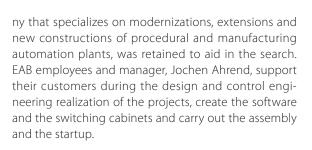
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**The excom remote I/O system from Turck provides 128 binary or 64 analog channels in a very small space**

## Fieldbus instead of 19" cards

After many years of use, the cards became susceptible to defects. Since new cards were more and more difficult to obtain, an alternative was sought out. The decision was made to modernize the interface technology for one reactor line first and use the still intact cards as spare parts for the other reactor lines. Thomas Pölking, head of maintenance, chose from different alternatives, like modern 19" cards or DIN rail devices, and decided on a fieldbus solution in the end. "We wanted an easy and modern solution, with integrated Ex-separation and easy, direct connection to our S7-PLC," Pölking explains. "Before the modification, the connection worked only indirectly. The signals were sent to Ex-barriers, then to an old PLC and only then via Profibus to the S7."

After the fundamental decision for a remote I/O system was made in the summer of 2008, the search for a qualified provider began. EAB Automation, a compa-

ny that specializes on modernizations, extensions and new constructions of procedural and manufacturing automation plants, was retained to aid in the search. EAB employees and manager, Jochen Ahrend, support their customers during the design and control engineering realization of the projects, create the software and the switching cabinets and carry out the assembly and the startup.

## Assembly in 19" rack

Within the search for a remote I/O system provider, EAB compared solutions from different manufacturers before the decision was made in favor of the excom remote I/O system from Turck. "With the excom system from Turck, we found a remote I/O solution that is really easy to handle and so compact that we could install it into the already existing 19" racks, together with all 150 I/Os," Jochen Ahrend says. The excom systems fulfills



### ▶ Quick read

Elantas Beck produces liquid impregnation resins and varnishes in Hamburg, and is one of the leading manufacturers in this market. On their way to the end product, the resins run through a reactor line that is equipped with numerous monitoring stations for temperatures, pressures and more process relevant parameters. The 19" interface technology was installed in the 1990's and there are only few spare parts available today. That is why the company upgraded the first reactor line with modern technology – Turck's excom remote I/O system.



**In the reactor lines at Elantas, numerous analog and binary signals are forwarded from the switching room to the interface cards and the excom system to the controls**



**Thomas Pölking, head of maintenance at Elantas, wanted a compact and modern solution that could be connected directly to the control system without a detour over the PLC**

**Since the modernization of the plant, the 19" rack (in the back) hosts two excom systems instead of the interface cards**



**In only one weekend, EAB Automation installed the new excom systems into the 19" racks**



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>
> **Jochen Ahrend,
> EAB Automation**

another requirement of Elantas, because the additional PLC for the reactor line is no longer necessary. "Now the signals are sent to the excom system from Turck and then directly to the S7, so we can save a detour over another control," Pölking states.

Even though this was the first project where EAB implemented excom, the plan was as successful as the realization. In the fall of 2008, employees were able to install and start the system over the course of only one weekend, so the plant was fully operational again on Monday morning. "We had no experience with the product then, insofar the support from Turck helped a lot," Ahrend explains. "Even the description was particularly good, and all our additional questions were answered by the specialists from Turck quickly so we could continue on our project successfully."

## Flexible system

Even though the remote-I/O system wasn't installed in a hazardous area for this project, it is possible to install excom in zones 1 and 2. The field circuits are approved for the use up to zone 0. The IP20 rated I/O modules offer four analog or four to eight binary inputs or outputs at a width of 18.2 mm. Two redundant power supplies, two redundant gateways and up to 16 E/A-modules can be installed on an area of 43.2 cm by 20.6 cm by 11 cm. In this configuration, up to 128 binary or 64 analog channels are available in a very small space.

**The SC12Ex segment coupler is used for intrinsically safe separation of RS485 and RS485-IS**

All modules have "EEx ia" interfaces, so that no further protective measures are needed. The energy supply is available in 24 VDC or 230 VAC. All modules – including the power supplies – can be replaced during full operation, even in zone 1. In addition to increased availability, hot swapping and ex-protection, the system allows a general HART-parameterization of the fieldbus devices via bus. ■