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PROFINET switches from Helmholtz with EREMA

Future-proof machine networks

Those who, like EREMA, build machines and systems with a very long service life, always have an eye on the future. Which is why the Austrian specialist for plastic recycling systems has trusted in PROFINET since the introduction of the latest control system generation. PROFINET switches from Helmholtz play a central role in the realization of the corresponding machine networks.

In a study cited by the bvse professional association for plastic recycling (www.bvse.de), the business consultancy McKinsey anticipated 80 percent more plastic waste worldwide for the current decade until 2030. There is thus no question: the global consumption of plastic has been increasing rapidly for years – and with it the need for high-performance recycling systems, particularly as the recycling quota is increasing in many markets.

EREMA Engineering Recycling Maschinen und Anlagen Ges.m.b.H. has also grown with this development: started in 1983 as a pioneer of the industry, the company, with its head office in Ansfelden near Linz in Austria, is today the global market leader and the undisputed number one in the

development and manufacture of plastic recycling machine and system components. In the meantime there are more than 6,500 EREMA systems being used around the globe, which annually produce a total of more than 14.5 million tons of plastic granulate of the highest quality adapted to needs.

Innovation meets robustness

The international customers appreciate the high degree of innovation of EREMA as a technology leader. At least as important for recyclers, however, is the robustness of their systems. These should ultimately run for many years without malfunctions under the rough conditions typical for the industry and reliably ensure the best

results. For EREMA, as a provider of the corresponding solutions, this means, as formulated by Markus Steininger-Arbeithuber: “Our target group attaches great importance to the durability of their systems. It thus doesn’t always have to be the latest technology, but it must function well and sustainably.” Given the very long service life for which the machines and systems of EREMA are designed, the software engineer thereby always has an eye on the future: what we build today still needs to meet all requirements in 15 or 20 years.”

Against this background, EREMA converted the control system technology for all systems around three years ago from Profibus to future-capable Industrial Ethernet; more precisely, to PROFINET, because around

95 percent of the control systems used are Siemens products. However, as justified as this decision was, it initially meant entirely concrete challenges for Markus Steininger-Arbeithuber and his colleagues: “We were particularly challenged by the question of how we can cleanly position machine networks on a PROFINET basis,” he looks back.

The use of PROFINET switches had already been decided upon at this stage of the decision making process, because they are principally best suited as network components for the specific requirements of PROFINET. That means: with a transmission speed of 100 Mbps, they, for example, regenerate signals, receive them, and forward them in a targeted fashion. However, the question of the optimal model was initially open.

Decision for Helmholz

The answer should provide a comprehensive provider analysis in the sector of PROFINET components. The technical decision makers didn't make it easy for themselves in the process: “This is of course a very large market, and we really looked at a great many manufacturers,” according to the automation experts.

Among the analyzed companies was also Helmholz GmbH & Co. KG from Großenseebach near Erlangen, which is represented in Austria by Buxbaum Automation GmbH in Eisenstadt. The German manufacturer was not unknown to EREMA: they had already acquired memory cards from Helmholz



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for a longer period of time. These were especially developed for use in the control system series SIMATIC S7-1200/1500 from Siemens and have proven themselves at EREMA as high-performance alternatives. Nonetheless, Helmholz had to prove itself once again as a provider of PROFINET switches in the context of the market analysis – and ultimately convinced with a whole series of arguments.

Markus Steininger-Arbeithuber names the following as the “main reason”: “Helmholz switches work.” And this is not at all self-explanatory in the competitive environment, as the many practical tests in the course of the market analysis showed. The compact design and the user-friendliness were additional arguments in favor of Helmholz products: “They can be installed in a way that saves space, they are easy to integrate, and they can be easily configured,” the professional states. And not least, in the face of around 300 new machines annually, the good price-performance ratio is also an important criterion.

In concrete terms, managed PROFINET switches from Helmholz are used as a standard in the 8-port variant (for the connection with eight network participants) and with 16 ports for larger machines. “They primarily take over the logical setup of our machine networks,” is how Markus Steininger-Arbeithuber describes the main task of the intelligent components. “Logical” in this connection means: the network can be set up in the same way as the individual functions using the switches. This guarantees not only optimized data distribution and stable network operation, but also provides advantages with regard to the wiring, which can be represented as follows from a practical perspective: “Thanks to the logical

setup of the network, I don't need to guide the cable through through the whole machine. That saves time and money for the installation and at the same time increases the reliability of the later operation of the machine.”

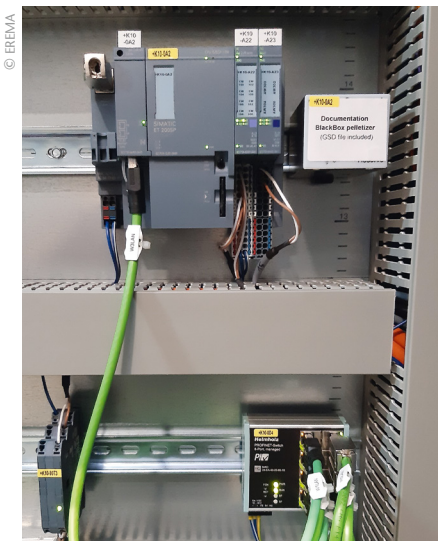
Practical experiences and a look into the future

The PROFINET switches from Helmholz in fact also prove to be “very robust and reliable” in practical operation, as Markus Steininger-Arbeithuber from EREMA reports: “The experiences of our customers are very positive. In the event of the failure of a switch, the machine would come to an immediate standstill, and the customer would contact us very quickly. This in fact happens only extremely rarely.”

At the same time, EREMA already has an eye on the next development step. In this way, the company is currently attempting, for example, supported by Helmholz and the Austrian sales partner Buxbaum Automation, the safe and efficient integration of a machine into a higher level production network via the Industrial Ethernet Bridge and Firewall WALL IE. This is because one thing is certain, according to software engineer Markus Steininger-Arbeithuber: “Network technology will become even more important in future.”

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Following a comprehensive market analysis, EREMA uses managed PROFINET switches from Helmholz that can not least be installed in such a way as to save space. (Source: EREMA)