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netX 90

Accelerated development through maximum proficiency

Based on Hilscher's netX 90 multiprotocol processor, Systemtechnik LEBER and E-T-A developed an ultra-compact and price-sensitive bus controller for monitoring electronic circuit breakers.

E-T-A Elektrotechnische Apparate GmbH from Altdorf in central Franconia is the world market leader for circuit breakers and overcurrent protection. The medium-sized company operates globally in the sectors of mobility and transportation, industry and production, telecommunications as well as medical and device technology. At a customer's request, E-T-A decided in 2019 to develop an inexpensive bus controller for the electrical circuit breakers of the REX12D series. The controller is designed for use in machines in automated environments, in general, and for lathes with multiple sensors and drives, in particular. The fieldbus connection is used for continuous data transfer of all status information and measured values of the overcurrent protection system. Reliable detection of overloads and short-circuits provides effective protection against unwanted anomalies and plant downtimes and their negative impact.

For the design and development of the fieldbus connection, E-T-A Systemtechnik consulted LEBER GmbH & Co. KG for advice. The service provider from Schwaig near Nuremberg has extensive experience in integrating communication functionality into a wide range of systems and products. LEBER's task was to create a multiprotocol capable device including circuit diagram, BOM, layout, EMC and ESD testing. This involved implementing and certifying the protocol stacks relevant for E-T-A for PROFINET, Modbus, EtherCAT and Ethernet/IP.

As a result of the cooperation, the ControlPlex System CPC12 was created, which provides transparency across all levels of the automation pyramid thanks to Hilscher's netX 90 communication controller. Three major factors led to the decision to use Hilscher technology: speed of development, form factor and pricing.



netX 90
The smallest multiprotocol-capable network controller



→ Product information: netX 90
www.hilscher.com



Bus controller CPC12

The CPC12 bus controller accumulates the status information as well as the measured values from connected circuit breakers.

Maximum development speed

For E-T-A, the CPC12 is their first product using integrated technology from Hilscher. Andreas Funcke, head of projects for the area Automation & Process Control at E-T-A, was already familiar with the possibilities and advantages of Hilscher products and was aware of LEBER's expertise in integrating Hilscher technologies. "Our goal was to develop a bus controller for electronic circuit breakers at a low cost," explains Andreas Funcke. "To achieve this, we naturally wanted to keep the development time as low as possible. So we got LEBER on board, who already has many years of experience with Hilscher's netX SoCs."

LEBER has been working with Hilscher for over 10 years and has also been an official "netX Design-In Partner" since SPS 2018. Thanks to the long-standing cooperation, the LEBER engineers around Jörg Klenke, member of LEBER's management, are extremely proficient in dealing with netX controllers. This significantly accelerated the project's development. "From the outset of the project in February 2019, we developed a functional prototype within almost half a year," explains Jörg Klenke, emphasizing the short timeline of the project. "After another six months, the bus controller was launched. Thanks to the in-depth netX know-how of our colleagues and the excellent teamwork with E-T-A, we were able to develop a production-ready product in a very short time despite the onset of the coronavirus pandemic."

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Jörg Klenke
Management Board Member
Systemtechnik LEBER GmbH & Co. KG.



A smashing success

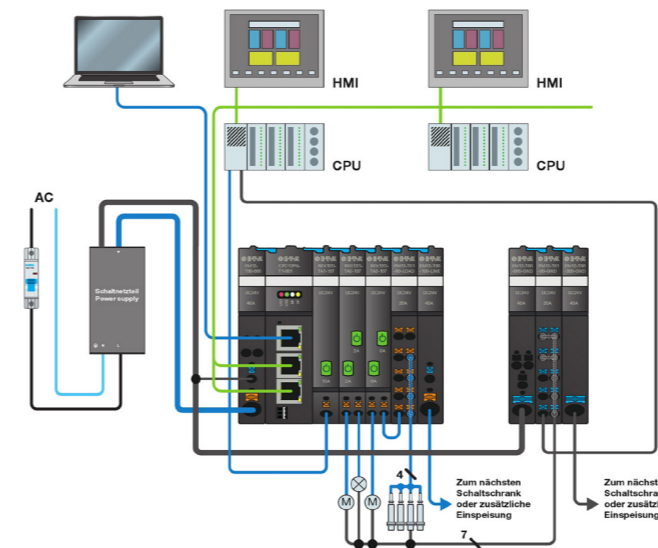
Compared to the previous CPC20 bus controller, E-T-A benefits from the high functionality of the netX 90 SoC in the CPC12. It's the smallest multiprotocol chip on the market, offering valuable benefits beyond industrial communication tasks. The application runs completely autonomously on the integrated application core without having to install an additional application controller. Thanks to the netX 90, the CPC12 also dispenses with many surrounding components, such as voltage regulators.

This high functionality of the netX 90 saves a lot of space, enabling a smaller form factor of the CPC12 bus controller. The space required on the printed circuit board is reduced by over 80%, which is a significant reduction compared to the previous product. Eliminating the need for additional components and

reducing the amount of required materials for the compact device also have a positive impact on the unit price. The combination of fast development, fewer additional components and the cost-effective netX 90 reduces unit costs by more than 80%.

Optimum results for everyone

The cooperation of LEBER and E-T-A on the development project turned out to be a smashing success! E-T-A is convinced by Hilscher's netX technology and is also open to future projects with other Hilscher components. Retrofitting the CPC20 could be a potential follow-up project if there's sufficient demand. In any case, the reduced R&D costs will lead to a fast return-on-investment for E-T-A and will also satisfy their customers in terms of unit prices.



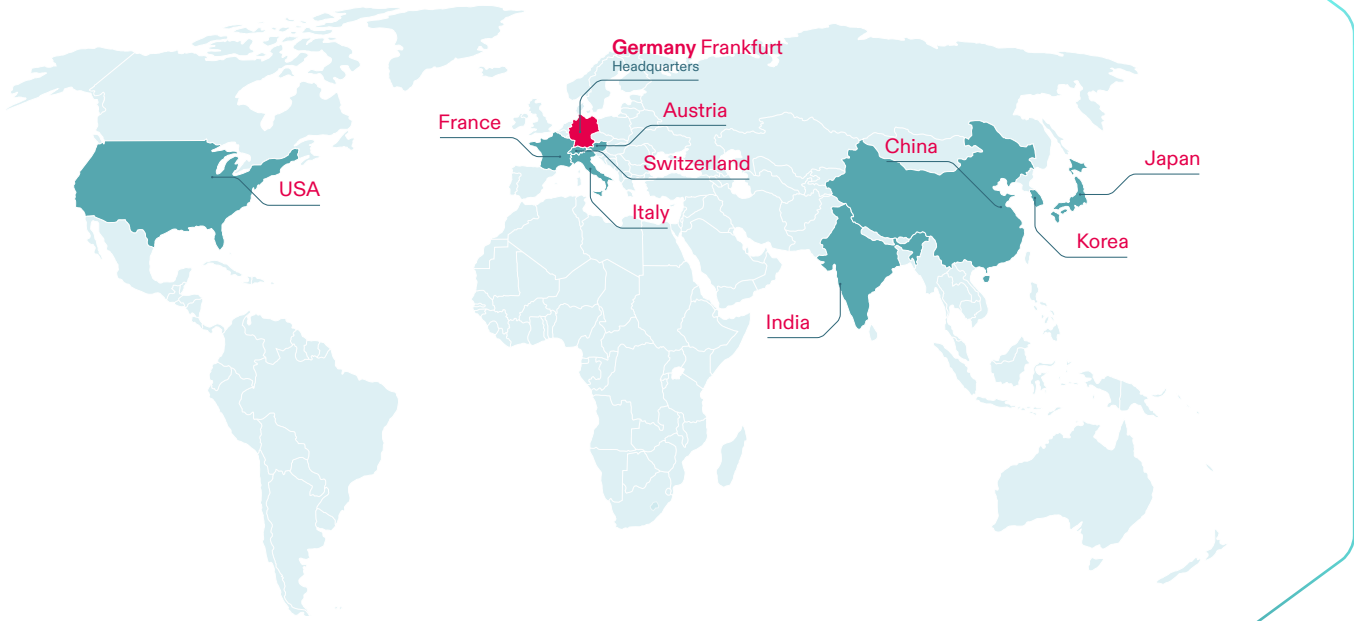
Benefits of netX technology for LEBER and E-T-A:

- The netX platform strategy makes it easy to adapt to new projects
- Accelerated development reduces the overall cost
- High functionality reduces the size and volume of surrounding components
- Low total cost of ownership drives rapid ROI

For further informations about Systemtechnik LEBER please visit: www.leber-ingenieure.de

For more information about netX please visit www.hilscher.com

We look forward to meeting you!



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→ Product information: netX 90
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