Robust miniature connectors for extremely compact control systems

ERNI SMC CONNECTORS FOR COMMUNICATION AND POWER SUPPLY OF SIGMATEK S-DIAS MODULES—

SIGMATEK AUTOMATION

SIGMATEK: With more than 30 years of automation experience, SIGMATEK, a supplier of complete solutions, has a solid understanding of machines and wide-ranging industry know-how, particularly for customers in plastic injection molding, metal processing, packaging and robotics. The company offers modular and scalable automation systems that pave the way for flexible machine concepts 4.0. With cutting-edge technology, maximum customer orientation and flexible operations, SIGMATEK ensures the success of its customers. All software and hardware components of the automation solutions are developed in-house and produced at the company's headquarters in Austria. A key component of these solutions comes via ERNI Electronics' connectors. The partnership between SIGMATEK and ERNI is one based on expertise, trust and fairness.

S-DIAS

"High-speed signal processing, user-friendly handling, high vibration resistance – and all that in an ultra-compact package."

These keywords outline the task for a new modular control and I/O system that SIGMATEK has implemented with the S-DIAS series. With the chosen concept, the customer was to be able to put together an individual, tailor-made automation solution for their many different applications in the most space-saving way possible. With integrated safety, the S-DIAS system is ideally equipped for all automation tasks.

The compact and modular S-DIAS system enables customized automation solutions.

THE CHALLENGE

High-performance connectors are a key component of this system. The communication between the CPU and the I/O modules is made via the high-speed VARAN real-time Ethernet bus and allows access to individual I/O modules in just 1.12 µs. In addition to the module connection with interference-free and secure communication, the connector must also enable power to be supplied to the I/O modules.

Last but not least, in addition to the required shock and vibration resistance, a connection solution is required that supports the extremely compact module width of just 12.5 mm.
This solution demands simple handling and both error-free commissioning and maintenance at the customer interface.

THE SOLUTION

SIGMATEK looked to ERNI and chose the ERNI SMC connector family. Decisive factors included the high reliability and robustness, the product range and the end-to-end solution approach. The SMC modular portfolio includes designs that support all PCB arrangements and are available in different pin counts (12 – 80) and stack heights (8 – 40 mm).
The fact that the ERNI-specific, double-sided contact system meets the high shock and vibration requirements in industrial environments was once again a guarantee for reliable and secure data transmission in the now 30-year history of the SMC connector. This feature was also an important factor for SIGMATEK.
Long-term availability, which also contributes to the success of S-DIAS, is another criterion that ERNI meets with the SMC.
Ronald Roither, Product Manager HMI/CPU at SIGMATEKAutomation:
"For the new S-DIAS development, we had several connector alternatives to choose from and after intensive testing we found the ideal solution for us in ERNI as a partner and their SMC connector."
The concept of the extremely small control modules was successfully implemented in a very short time and took only about 12 months from the initial design to the market launch. In addition to satisfying the very specific requirements and the general performance of the SMC, the budget-friendly offering and the excellent partnership with ERNI were decisive factors.
Based on the concept, SIGMATEK is continuously expanding its portfolio with new S-DIAS modules like servo amplifiers and condition monitoring.
S-DIAS has now grown into SIGMATEK‘s most successful control platform.

Ronald Roither, Product Manager HMI/CPU at SIGMATEK Automation