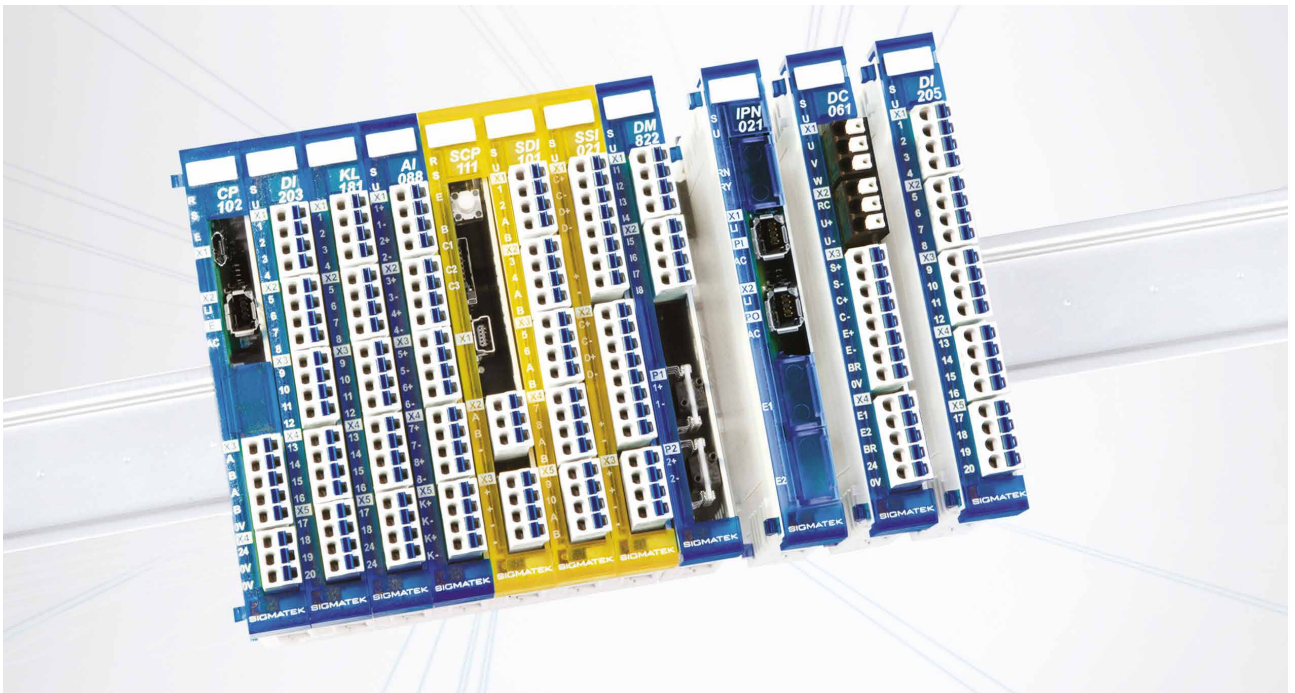


Full Automation Power Thin on Rails

Fast signal processing, comfortable handling and high vibrations resistance belong to the core properties of the compact control and I/O system from SIGMATEK. With Safety as an integral system component, it is well-equipped for various automation tasks.

Ingrid Traintinger



S-DIAS provides modules for all automation tasks CPU, I/O, Motion and Safety

The S-DIAS control and I/O system from SIGMATEK meets the current market demands for compactness, flexibility and performance enhancement. From a versatile, modular system toolkit, CPU, digital and analog I/O, motion, Safety and special function modules can be flexibly combined and configured.



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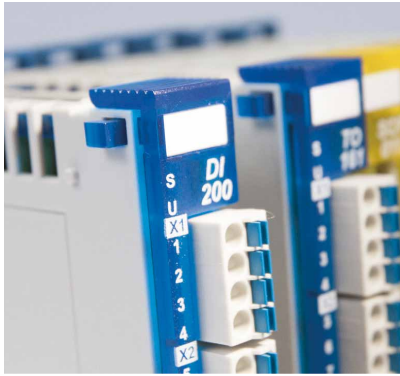
Machine Manufacturers Wishes Met

An essential property of the system is its compactness: On a module with dimensions of 12.5 mm x 104 mm x 72 mm (w x h x d), up to 20 channels are possible. With this high packaging density, machine and system manufacturers are supported in mastering the growing complexity of their machines within the same control cabinet volume. The machine manufacturer also profits from the modularity and the option to distribute the application over multiple CPUs. Flexible

customer-specific machine concepts can therefore be realized, which are easily expanded as well as adapted to future requirements.

The Concept: Smart and Reliable

With its S-DIAS series, the Salzburg automation systems provider consciously decided against multi-component module construction. The reason is, that from their view, each additional connection is a potential error source.



The clever mechanical interlocking of the modules ensures the form-fitting and vibration-proof connection of the modules (left). Simple mounting, as well as a secure hold on the DIN rail are achieved through the locking mechanism on the back of the module (center). The interlocking can be easily disengaged by pulling the module cover on the front side (right)

SIGMATEK I/O modules therefore combine electronics, bus and DIN rail mount in one housing. The module supply, as well as bus connection are provided through a robust multi-contact plug located on the side.

The mechanical interlocking is a unique feature, which creates a form-fitting, vibration-proof connection of the modules. In addition, great value was placed on quick and clear allocation as well as diagnosis in the event of an error. For this reason, a signal LED is located next to each channel that provides information on the status of the contact point. A special ventilation concept provides efficient heat dissipation from the housing.

The S-DIAS I/Os are delivered ready-to-use, including standard connectors with Push-in spring terminals. The modules can therefore be wired quickly and without tools, preassembled into blocks and mounted on the DIN rail (locking mechanism). All this reduces initial start-up times.

In addition, the complete module solution reduces the effort of ordering, storage and logistics. Instead of two or three module components, only one module must be ordered, unpacked and installed.

Performance and Future in Sight

The I/O system communicates via the hard real-time capable Ethernet VARAN with 100 Mbit/s, which makes

it optimally suited for fast dynamic applications. Individual I/O modules can be accessed within 1.12 μ s. In the maximum configuration, a total of 64 participants with up to 1280 I/Os can be connected per VARAN bus interface; the update time is under 60 μ s.

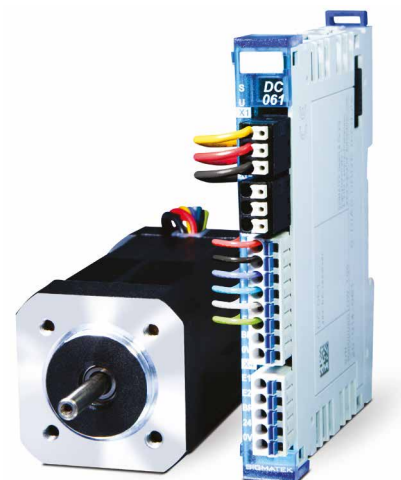
The CPU modules in S-DIAS format are the right choice for single and multi-CPU solutions. In the compact CPU, ARM-based EDGE2 Technology processors are used, which combine high performance with low loss. Multi-CPU solutions enable a customer-specific system configuration. Each function unit performs exactly the task for which it was intended. The performance can be scaled as required, as well as the system flexibly expanded and adapted to new requirements.

Not only the thin CPU and I/O modules of the S-DIAS series meet the high demands for compactness and robustness, but also the industrial mini connector from TE Connectivity. Thanks to its 2-point contact principle and stable lock, this standard connectors developed for industrial applications ensures an exact fitting and vibration-proof connection, also in mini format.

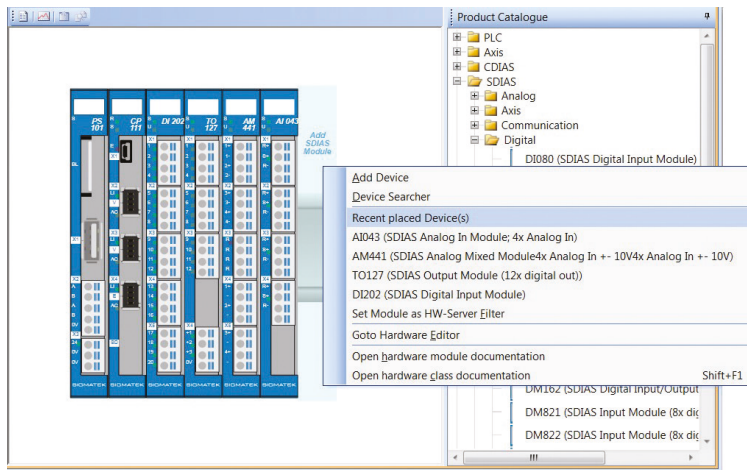
Full Servo Functionality

In addition, the company has two axis modules in its portfolio, which are designed for the control of a syn-

chronous servo motor up to 6 A of continuous current at 48 V DC. They can also provide a peak current of up to 15 for a short time. The two power output stages DC061 (standard resolver) and DC062 (incremental encoder) are directly embedded into the S-DIAS system. The integrated Safety function Safe Torque Off is a special feature. With the S-DIAS servo system, control and drive technology for a handling device with three axes for example, can be compactly packaged within a 10 cm width and height.



The DC 061 axis module with 300 W rated power and Safe Torque Off



In the graphical hardware editor from LASAL, the S-DIAS modules can be configured, parameterized and diagnosed

Safety:

Streamlined and Cost-optimized

With future-oriented machine concepts, Safety integration is a must. During the development of S-DIAS Safety, SIGMATEK set clear goals: consistency, compact, modularly expandable – and above all, as inexpensive as possible. Because when changing from a conventional, hard-wired solution to a Safety control, the cost-benefit ratio must be economical. The user can seamlessly and flexibly integrate S-DIAS Safety into the standard system of the series. The reaction times for signal processing are therefore also very short for Safety applications, which are in the range of a few milliseconds. It is also possible, to use the Safety system as a stand-alone solution.

The modular Safety solution consists of a Safety CPU as well as the corresponding Safety I/O and relay modules. When combined with the S-DIAS Safety controller SCP 111, the digital mix module SDM 081 with six Safe inputs and two Safe outputs is a Safety system in small format that makes switching to a Safety controller economically attractive.

S-DIAS Safety is designed for the highest Safety requirements and can be flexibly adapted to the specific needs of the application, in the control cabi-

net as well as in the decentralized machine and system environment. The TÜV-certified Safety system meets the SIL 3 and SIL CL 3 in accordance with DIN EN 62061 (VDE 0113-50) and DIN EN ISO 13849-1/-2, PL e, Category 4.

Open Communication

In view of Industry 4.0, the connectivity of the control system is an important aspect. With the various splitter and interface modules (VARAN, Ethernet, CAN, Profinet etc.), the I/O system can be integrated into a system bundle of different manufacturers.

An open system architecture can be therefore implemented without losing the real-time capability of the system.

Flexibility also in Engineering

As with all SIGMATEK system components, S-DIAS can also be configured with the all-in-one software LASAL. This integrated, object-oriented engineering tool unifies all automation disciplines on one engineering platform: from the control programming to the visualization and drive technology to Safety programming.

LASAL supports a modular, mechatronic approach to machine design. Machine components are simulated in the software objects, whereby code and data are combined in logical units (objects). When creating the actual program code, you can rely on trusted languages despite object orientation: structured text, ladder diagram, sequential function chart, instruction list (all in accordance with the IEC 61131-3) and C. To reduce the development times, an extensive library of predefined function components is available.

Special IP20 I/O Systems

- Module size
12.5 mm × 104 mm × 72 mm,
- up to 20 I/Os per module,
- powerful CPU modules,
- Safety controller and I/O,
- complete module: electronics and bus in one housing,
- 100-Mbit/s bus speed,
- signal LED directly next to each channel (simple diagnostics),
- push-in wiring and toolless mounting, as well as
- high mechanical reliability and vibration resistance

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