

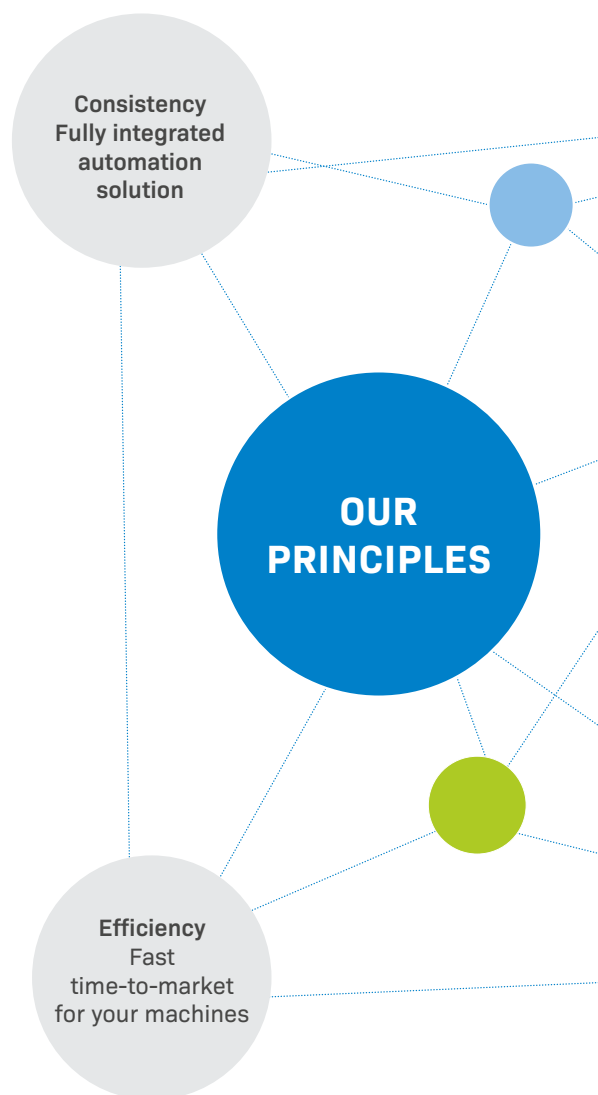
AUTOMATION SYSTEM





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■ YOUR ADVANTAGES IN SIGHT

SIGMATEK is a globally successful company. For more than 35 years, we have been researching, developing and producing automation technology. We offer our customers flexible automation systems from one source, with a „certain added value“ in the engineering of machines and systems.

Expertise
Support from
our experienced
industry experts

SOLID AND FLEXIBLE STRUCTURES

SIGMATEK was founded in 1988 and is 100 percent privately owned. A flat organizational structure and short decision making process are characteristic of our company. We can therefore quickly and flexibly react to market demands. A first-class range of products, solution expertise, a dedicated team and long-term customer relationships – these are the key factors of our success.

WITH US, INNOVATION HAS TRADITION

We meet any technical challenge. Innovation is the result of our passion for the continuous improvement of products and solutions. Annually, around 18 % of sales revenue is invested in research and development. With us, you get flexible and efficient automation solutions with a future.

Future-proof
Long-term
availability of
components



SIGMATEK Executive Management: Alexander Melkus and Marianne Kusejko



MODULAR, FLEXIBLE AND FUTURE ORIENTED

INTEGRATED SOLUTIONS

We focus on complete automation solutions: control and drive technology, as well as safety, unified in one integrated engineering environment. Thanks to a complete approach, engineering effort is significantly reduced, while the performance and flexibility of your machines increase.

Our automation systems are constructed like a modular toolbox – in hard and software. The compatibility and scalability of their components are just as guaranteed as the long-term availability. This modularity provides you an important competitive edge: You can implement the most varying customer requirements flexibly and efficiently – also with increasingly smaller footprints. Our product spectrum is always up to date with the latest technology: HMIs, controls, industrial PCs, I/Os, servo drives, AC drives, motors, real-time Ethernet as well as engineering tools. All components of

SIGMATEK automation systems are produced in the main facility in Lamprechtshausen, Salzburg. They are the result of consistent research and continued development as well as high-quality standards in production.



PRINTING AND PA



ENERGY



METAL PROCESS

SUCCESSFULLY IN MANY INDUSTRIAL BRANCHES

MACHINE KNOW-HOW

In automation, we are at home. With over 35 years of industry experience, we can inspire our customers and provide comprehensive support in implementing their machine concepts with well-thought-out automation solutions.

SIGMA TEK has combined expertise and decades of experience in the most varying application areas and industries. We understand your specific needs, have a feeling for trends and quickly convert them into serial products. Naturally, we love technology. But our focus is on customer benefit. We listen to our customers intently, are pro-

active and never lose sight of the big picture. This enables us to create tailored industry solutions, which make your machines and systems fit for use in Smart Factories.

PLASTICS TECHNOLOGY

LOGISTICS/MATERIAL FLOW

PACKAGING AND FOOD PRODUCTS

PAPER

TEXTILES

ROBOTICS AND HANDLING SYSTEMS

SING

HOT FACTS

- MADE IN AUSTRIA**
All automation components from one source
- BROAD SPECTRUM**
The right solution for any demand
- SIMPLE ENGINEERING**
ONE software for all tasks
- ECONOMIC**
Low total costs of ownership through an integrated approach



360°-SOLUTION

Maintenance | Service

Initial Start-up | Test



WE ARE ALWAYS CLOSE TO THE CUSTOMER

CLOSE PARTNERSHIPS

Long-term and successful partnerships are our goal. We want to excite our customers and give them a market advantage with our expertise and know-how. This way we can grow and evolve together.

Anyone who listens to their customers like our sales engineers and knows exactly what they need, finds the right solution faster. Only in a strong partnership based on trust, continuity and transparency, are extraordinary things possible – and that in a short time.

Our customers know that they can count on SIGMATEK. We score with flexibility in development and in applications support.

We are always close to the customer: whether in engineering, initial start-up on-site at OEM customers, employee training or support via remote maintenance using web technologies.

THE RIGHT MIX IS KEY

We meet any challenge and, together with you, find the optimal solution for your application. Standard components, which can be flexibly combined and individually adapted, form the basis of our automation solutions. Through this modularity, you get tailor-made automation components. Our application engineers support you in development with their diverse project experience. Top components are thereby transformed into successful and unique solutions and machines.

Our core expertise lies in complete solutions – especially for fast automation processes, where the combination of performant control, dynamic drive axes,

integrated safety technology and modern visualization is essential. As a customer, you have the advantage of having only one contact partner for all automation questions.

With a complete view of the machine process, we offer you an individual 360°-solution for the entire product life cycle: from finding a solution, project development through the application engineering and initial start-up to service and remote maintenance – as long as your machine lives.



MORE FLEXIBILITY AND HIGHER PRODUCTIVITY FOR YOUR MACHINE

INTEGRATED AUTOMATION SYS



Control and I/O System

Our control system offers the right CPU for any task: Compact S-DIAS CPU modules for the DIN rail – with high-performance single or multi-core processors. Scalability and consistency mean that compatibility with the application software is guaranteed. The I/Os are available in three series: S-DIAS and X-DIAS for IP20 and P-DIAS for IP67 requirements. The S-DIAS system impresses with a unique packaging density and is ideal for modular machines with distributed intelligences.



Human Machine Interface

For human machine interfaces, a broad range of products is available: from small operating units with 3.5" displays to high-resolution panels with a display up to 21.5". Our web panels are the right choice for complex visualization concepts (HTML5). The mobile HMIs with wireless technology and safety bring a new dimension in operating freedom. Naturally, customer-specific configurations are possible. For example, panels specially designed for the specific requirements of the food processing and pharmaceutical industries.



Motion Control

Our modern motion control system convinces in machine manufacturing: motors, servo drives, AC drives, gears, motor output stages, and software interact perfectly and are seamlessly integrated into the control system. This results in highly dynamic motion sequences from one source. Engineering is simple, since predefined motion components are provided. Precision, dynamics and efficiency of the machine are increased and the time-to-market is reduced.



Safety Integrated

SIGMATEK has safety fully integrated into the automation solution: safety controller, safety I/Os and drives with integrated safety technology. SIGMATEK safety technology is designed to send safety-relevant signals via Black Channel over any communications media. With cable-connected solutions, a single line is sufficient for safety and standard communication. Data can also be sent wirelessly via WLAN, for example. The thin and freely programmable safety technology simplifies the modular configuration of your machine or system.



Software Engineering

The all-in-one engineering tool LASAL enables fast and efficient realization of machine concepts: process control, visualization, motion control, safety, diagnostics and service. Already in 2001, SIGMATEK was the first to introduce object-oriented programming to industrial automation. The reusability of the software modules helps to reduce engineering times and costs significantly. Web technologies such as HTML5, CSS3 and JavaScript enable the creation of modern and flexible visualizations.

THINK CYBER-SECURITY NOW

With the Cyber Resilience Act (CRA) and the Machinery Regulation in mind, SIGMATEK consistently develops its automation solutions according to the principle of "Security by Design." Cybersecurity is holistically integrated into hardware, operating system, and application software – from secure development processes to protected communication and robust operating system functions, all the way to secure update and patch mechanisms. This approach creates the foundation for reliable, future-proof, and compliant systems without compromising on performance, availability, or functional safety.

MULTI-CPU CONCEPTS



The automation technology from SIGMATEK already provides all options for implementing machine concepts 4.0. To meet the demands for „maximum flexibility“, we focus on modularity in hard and software and – especially for complex applications – on multi-CPU concepts.

With modular concepts, the machine or system is divided into function units. All units assume the exact task assigned to them and are equipped with their own intelligences. The automation system can therefore be flexibly expanded and adapted to new requirements.

SOFTWARE: BASIS FOR MODULARIZATION

Through the encapsulation of program components, our object-oriented engineering tool LASAL enables modularization of the application software. This is the basis for outsourcing to decentralized intelligences. To manage a

complete solution with distributed intelligences, the „LASAL Machine Manager“ is available. It guarantees clear representation of the individual machine components and their dependencies. This acts as the central management for individual controls and manages the data flow: Who can exchange which data with whom. The entire infrastructure for the control programs, such as the operating system and libraries, is centrally managed by the Machine Manager. With this approach, the effort for creating and maintaining software is minimized.

OPC UA / MQTT

Whether a control computer, ERP, MES, cloud services, or third-party systems – the OPC UA and MQTT implementation in LASAL provides standardized, platform-independent communication interfaces.

MODULAR COMPLETE SOLUTION

THE SIGMATEK SYSTEM

ENGINEERING PLATFORM & SERVICE TOOLS



One Tool for all
Automation Tasks



Secure, web-based Remote Access



OPC UA, LASAL Remote Manager
VNC-client and -server, Webserver, ...

HMI LEVEL



Built-In Panels



Swing Arm Mount Panels



Mobile Panels

CONTROL LEVEL



CPU Modules



CPU Units



Industrial PCs

FIELD LEVEL



S-DIAS I/O System



S-DIAS Safety System



X-DIAS I/O System



P-DIAS I/O System

DRIVE LEVEL



Modular Servo Drives
MDD 2000



AC Drives FDD 3000



Servo Motors

FROM SIMPLE MACHINES TO COMPLEX SYSTEMS

CONTROL CPU & IPC

For diverse control tasks, compact CPU modules and units are available. For applications requiring particularly high computing power and big data processing, our IPCs are the right choice. All controls are scalable and compatible with one another.



CPU: GROW WITH THE TASK

Our CPUs impress with their especially compact construction and flexibility. With the CPU modules from the S-DIAS series, small function units can also be equipped with intelligence and combined into flexible systems or installations, from the economic single-module-CPU to the high-performance dual-core control with EDGE2 technology processor.

For demanding applications, the CPU units of the 700, 800 and 900 series are available.

They are equipped with high-performance Intel® processors. S-DIAS I/O modules are simply connected directly on the side.

High computing power, reliable data acquisition, and efficient data handling: This is what SIGMATEK's robust, compact, and Windows 11 IoT-ready industrial PCs with Intel® processors stand for.

HOT FACTS

SCALABLE

The right CPU for any application

INTEGRATED

Compatibility of the application software

COMPACT

Space-saving construction and installation in the control cabinet

SIMPLE

One engineering tool for all tasks

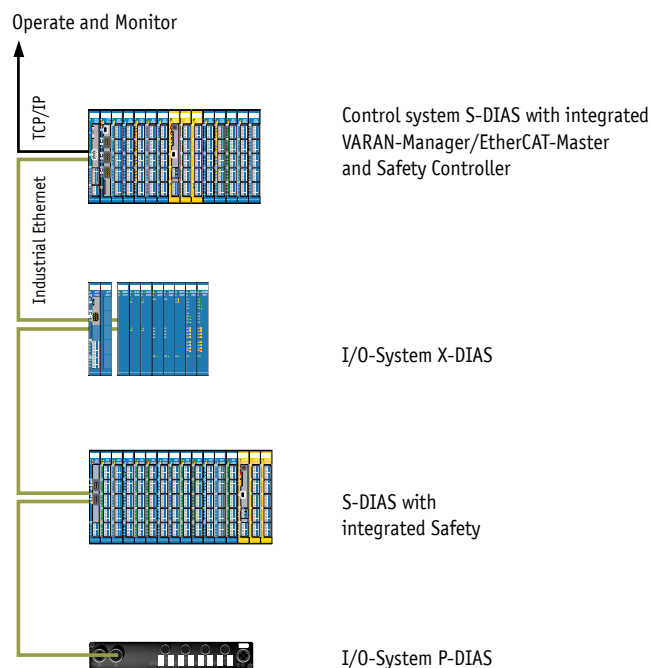
COMPACT, MODULAR, ROBUST I/O SYSTEM

The I/Os are available in three series: the super compact S-DIAS system with standard and safety modules, X-DIAS for customized circuit boards (both IP20) and the P-DIAS series (IP67). They can be used modularly and impress with their functional versatility.



With the modular I/O system family, you can meet the requirements for IP20 as well as IP67. Both series can be combined as desired and communicate with one another without limitation and performance loss. A decentralized configuration with multiple module groups is therefore possible, which can be networked through the real-time Ethernet bus VARAN. With different network topologies (star, line, tree), you have many options for designing the modular configuration of your machine concepts.

Our systems are open for communication with third-party components. For this purpose, different interface modules are available. Individual machines can thereby be easily integrated into production lines.



S-DIAS: STANDARD AND SAFETY

Fast signal processing, highest packaging density to date and safety integrated – with the S-DIAS series, you can master the growing complexity of your machines – and that with the same or even reduced control cabinet volume.

S-DIAS comes to you as a complete module solution: DIN rail mount, electronics and bus are unified in one housing. This enables fast, toolless assembly of the modules. Since standard connectors with push-in wiring are used, the installation and wiring times are reduced to a minimum.

Communication is established via the hard real-time capable Ethernet bus VARAN with 100 Mbits/s. Per VARAN bus interface, up to 64 I/O modules with up to 1,280 I/Os can be connected on the DIN rail. The update time is under 60 µs.

The S-DIAS I/Os are interconnected and mechanically interlocked. The module supply and bus connection were implemented with multi-contacts. The highest mechanical reliability and vibration resistance are

thereby reached. Standard and safety modules can be combined as desired.

Dimensions: 12.5x104x72 mm (WxHxD)

MODULE VARIETY

Our many years of experience have produced a variety of modules, which can be modularly combined to create a perfectly tailored solution for any application:

- CPU modules
- Digital in and output
- Analog in and output
- Digital /analog mix
- Counter & position recording
- Motion
- Measuring technology
- Safety (controller, I/Os, relays)
- Bus connection
- Interfaces & splitters
- Special functions

HOT FACTS

HIGHLY COMPACT

20 I/Os within a 12.5 mm width

COMFORTABLE

through toolless DIN rail mounting and push-in wiring

CLEAR

Signal LEDs directly next to the channels

RELIABLE

Modules mechanically interlocked, all contacts with multiple contact points



ELECTRO PLANNING MADE EASY

For the S-DIAS product family, EPLAN macros for simple schematics integration are available.

X-DIAS: FOR WIRING BOARDS

The X-DIAS I/O system was developed specifically for serial machine building with medium and high volumes. The function-optimized modules can be flexibly integrated by OEMs into individual wiring boards.

Electronically, the I/O series is based on the proven S-DIAS system. It is therefore just as robust and vibration-resistant. An electromechanical adaptation makes it possible to plug X-DIAS modules individually and directly onto wiring boards.

MINIMAL WIRING

Using wiring boards eliminates the need for manual single-core wiring – saving significant wiring time and costs. X-DIAS modules are equipped with mechanical coding pins on the back, which prevents incorrect placement and minimizes potential wiring mistakes.

The required connectors, as well as the internal wiring, fuses, etc., can be positioned as desired.

The X-DIAS system can be flexibly combined with the S-DIAS system. Any S-DIAS CPU can be used as the control processor. In addition to Industrial Ethernet VARAN, other bus systems can also be used for communication with the control system.

Dimensions: 12.5x102x63 mm (WxHxD)

HOT FACTS

APPLICATION-SPECIFIC WIRING BOARDS

increase flexibility in series machine building, speed up production and commissioning

MINIMAL WIRING

Single-core wiring is eliminated – reducing wiring time and costs

EASY INSTALLATION

Simple mounting; mechanical coding prevents incorrect placement



P-DIAS: FOR IP67 REQUIREMENTS

The P-DIAS modules expand the system family in the IP67-protected area. They are ideal for the decentralized configuration of control systems and can be combined with the S-DIAS series as desired. In the field, analog and digital data can be collected or distributed directly outside of the control cabinet. The connection of peripheral components is made using

M12 connectors, optimized for use in harsh operating environments. Flexibility in use is also an essential feature of the P-DIAS modules. The digital modules have 8 channels, which can be freely selected as in or outputs.

Dimensions: 30x75x33 mm (WxHxD)

INTUITIVE OPERATION AND MODERN VISUALIZATION

HUMAN MACHINE INTERFACE

Whether for classic operation or modern visualization concepts – with the HMIs from SIGMATEK, your machines cut a good figure in any situation. Our human-machine interfaces are compactly designed and fanless. With the engineering tool LASAL SCREEN and the web-based VISUDesigner, your visualization is quickly ready to use.



Whether built-in, swing-arm mounted or mobile panels – our modern HMIs convince with high performance and design. Capacitive multi-touch displays (PCT technology) stand for modernity and an intuitive, safe user experience.

Our HMI portfolio offers a wide range of sizes: from 3.5" to 21.5". All panels have a fanless design. Standard interfaces such as Ethernet, CAN, USB, and RS232 ensure flexible system integration.

For demanding visualization and operating concepts (HTML5), our HMIs with EDGE3 Technology or x86 processors are

the right choice. All HMIs with a processor support OPC UA.

For a wide variety of applications in robotics, assembly and handling technology, our mobile HMIs – cable-connected or wireless – are the ideal solution.

Customized versions are also possible (application-specific housing, protection class).





High-Performance Web-Based HMIs for Carrier Arm Mounting: The TP xx20 Series.

HOT FACTS

SCALABLE

The right operating panel for any need

SIMPLE

Comfortable screen design with the all-in-one software LASAL

ADAPTABLE

Customer-specific housing design possible



COMPLETELY FREE: DATA EXCHANGE VIA WLAN

The wireless handheld operating panels of the HGW 1033 series provide you with new freedom for monitoring, as well as operating directly on-site. Data exchange via WLAN eliminates the cables, which until now, have posed a trip hazard. The 10.1 multi-touch display provides additional operating comfort.

Our wireless panels are available with and without integrated safety functions (SIL 3, PL e). Standard and safety data are transmitted redundantly with 2.4 and 5 GHz, which significantly increases the reliability of the WLAN transmission.



STRONG VISUALIZATION WITH LASAL

With the HMI tool LASAL SCREEN and the web-based VISUDesigner (HTML5, CSS3 and JavaScript), you are provided with modern tools for creating visualizations. Predefined design themes and diverse operating and graphic elements simplify project engineering. Integrated features such as alarm and event management, trend display, text and recipe management, as well as language and unit conversion provide great comfort.

FROM POSITIONING TO PATH CONTROL

MOTION CONTROL

Modern machines and systems require innovative drive technology with high flexibility and precision. The economic complete solution from SIGMATEK offers a high degree of freedom to perform motion tasks with your machine.



PREDEFINED MODULES SIMPLIFY MOTION DESIGN

The seamless integration of PLC and motion control results in the improved synchronization of process and motion operations in the machine.

LASAL MOTION provides all drive functions needed for a production machine, from simple one-axis to complex multi-axis applications. A large drive library with ready-to-use motion components is available to the user: Functions such as absolute, relative and endless positioning, CNC functions as well as coordinated movements and several reference types. This includes technology modules for synchronizing up to 9 axes in a group, circular interpolation, flying saw, cam discs, cam switches, jerk-limited motion profiles or dynamic safety zone monitoring. This ensures a significant reduction in programming and testing.

At SIGMATEK, motion control is fully integrated into the control system. Control, drives, motor output stages, motors and software interact perfectly and enable highly dynamic and exact motion sequences from one source.

Our Servodrives MDD 2000 cover a broad performance spectrum and include many safety functions in the standard model – all in compliance up to SIL 3, PL e, Cat. 4. They can therefore be easily integrated into the safety concept of the machine.

Our servo drives were consciously limited to current, speed and position control. All drive parameters and configuration data are stored centrally in the control and automatically reloaded when a servo amplifier is exchanged. The handling during the initial start-up is thereby simplified.

This modern system structure is made possible through the hard real-time Ethernet system VARAN (alternatively EtherCAT) with the shortest cycle times.



DIAS DRIVE MDD 2000



SERVO MOTORS



AC DRIVE FDD 3000

Highly Compact and Modular

The compact multi-axis servo system, with one to three axes, combines high performance and flexibility for controlling servo motors. The supply, power filter, regen resistor, as well as DC-Link circuit are compactly combined. Size 1 (75x240x219 mm) provides 3x 5 A rated- or 3x 15 A peak current and with 150 mm the double-wide size 2 supplies 3x 10 A rated- or 3x 30 A peak current per combined power/axis module (1-/3-phase with 230-480 VAC). The overload factor is up to 300 percent. It can be used as a stand-alone solution or in a network with any number of axis modules in various sizes. The safety functions STO, SOS, SS1, SS2, SBC, SLS, SSM, SMS, SMA, SLA, SLP, SLI, SCA and SDI are already included in the standard features (up to SIL 3, PL e, Cat. 4). In addition to the Hiperface DSL single cable solution, various encoder types are supported.

For any Motion Task

Our compact synchronous servo motors are equipped with the newest generation of magnet technology. The brushless three-phase motors are ideal for positioning tasks with high demands on dynamics and stability. The DSM5 motors are available in different models. For the encoder system resolver, Hiperface and Hiperface DSL can be used. A broad selection of motors with stillstand torques from 0.19 to 76 Nm and peak torques up to 200 Nm is available to choose from. The user can also select different mounting, connection and feedback variations.

Efficient and Reliable

The FDD 3000 AC drives round out the drive portfolio for the low voltage range. Economic asynchronous motors can be precisely controlled with the AC drives. The motion application is thereby more efficient and at the same time, saves energy. These compact units are available in seven sizes. The 1- or 3-phase AC drives (200/240 V/AC or 380/480 V/AC) cover a power range of 0.37 to 90 kW. With an overload capacity of up to 180 %, the FDD 3000 units are ideal for applications that require high torque for short time. Two safety STO inputs (SIL 3/PL e) ensure a safe stop.



S-DIAS MOTION MODULES

Servo Amplifier in Pocket Format

The super compact, fully integrated servo drives of the S-DIAS DC series, with a rated power of 300-480 W, is designed to control synchronous servo motors up to 6 A or 10 A of continuous current at 48 V DC (peak current 15 A or 20 A). The single- or double-width S-DIAS motion modules are available with a resolver (DC 061/101), an incremental encoder (DC 062/102), or a universal encoder interface for SSI, EnDAT 2.2, BiSS-C P2P, Sanyo Denki, and Tamagawa (DC 064/104). In addition, a 24 V DC output for controlling a holding brake and a two-channel enable input, which is used as ST0 (Safe Torque Off), are integrated (SIL 3, PL e).

Dimensions:

DC 061/062/064: 12.5x104x72 mm (WxHxD)

DC 101/102/104: 25x104x72 mm (WxHxD)

Compactly Control Stepper Motors

The S-DIAS modules ST 151 and ST 152 (with closed loop control) are ultra-compact function modules used to control two-phase stepper motors. Micro-stepping is supported: 32 or 64 or 256 (ST 152) steps per full step. A maximum of 5 A of continuous current per motor is possible. The modules have an incremental encoder, two digital inputs as well as one two-channel enable input for the safety function ST0.

Dimensions: 25x104x72 mm (WxHxD)

HOT FACTS

SIMPLE

Integrated motion control simplifies engineering considerably

COMFORTABLE

Ready-to-use motion components and technology modules

COMPACT

Space-saving installation in the control cabinet

FLEXIBLE

Control of various motors

SIMPLE AND INTEGRATED SAFETY

Functional safety is completely integrated into the SIGMATEK control system. The S-DIAS Safety components can be flexibly combined with the standard modules of their series. Safety functions are already implemented in the drives as well. The entire system complies with SIL 3 in accordance with IEC 62061 and PL e, Cat. 4 according to EN ISO 13849-1/-2.



Flexible and programmable safety systems are essential for modular and intelligent machines. With the compact S-DIAS Safety System, you can easily implement safety functions in a flexible and scalable manner. S-DIAS Safety is TÜV-certified and complies with the highest safety standards (up to SIL 3, PL e, Cat. 4).

The safety solution scores with user-friendly installation and comfortable programming with the LASAL SAFETYDesigner. This helps increase your machine's efficiency.

SIGMATEK safety solutions are based on hardware components, which continuously monitor safety signals to detect potential errors and, if necessary, put the machine in a safe status. This ensures adequate protection for operating personnel without compromising the performance of the machine.

FULLY INTEGRATED OR STAND-ALONE

S-DIAS Safety systems can be seamlessly integrated into the SIGMATEK system architecture. Safe and function oriented components can be combined as needed. This allows you to individually adapt the system to your specific requirements. S-DIAS Safety can also be used as a stand-alone safety solution.

Safety data is transmitted using the black-channel principle – either via a wired bus communication (using VARAN, EtherCAT, or Ethernet TCP/IP) or wirelessly (via Wi-Fi).

HOT FACTS

SIMPLE

Fully integrated safety simplifies engineering

INTEGRATED

One bus system for standard and safety data

COMFORTABLE

Predefined safety function blocks

MODERN AND FLEXIBLE

Wireless safety and Hot Swap provide a high degree of freedom for developing the safety concept



With the Safety Hot-Swap, modular machine and system units with an emergency stop function can be modified and flexibly grouped.

INTEGRATE SAFETY EASILY AND SEAMLESSLY

For programming and configuration of the safety system, a comfortable tool is provided with the LASAL SAFETYDesigner.

Based on a function library, you can easily create the logical connections of safety-oriented processes. For this purpose, you can utilize certified standard and safety function blocks based on the PLCopen standard. Examples of this are: emergency stop, two-hand control or guard locking.

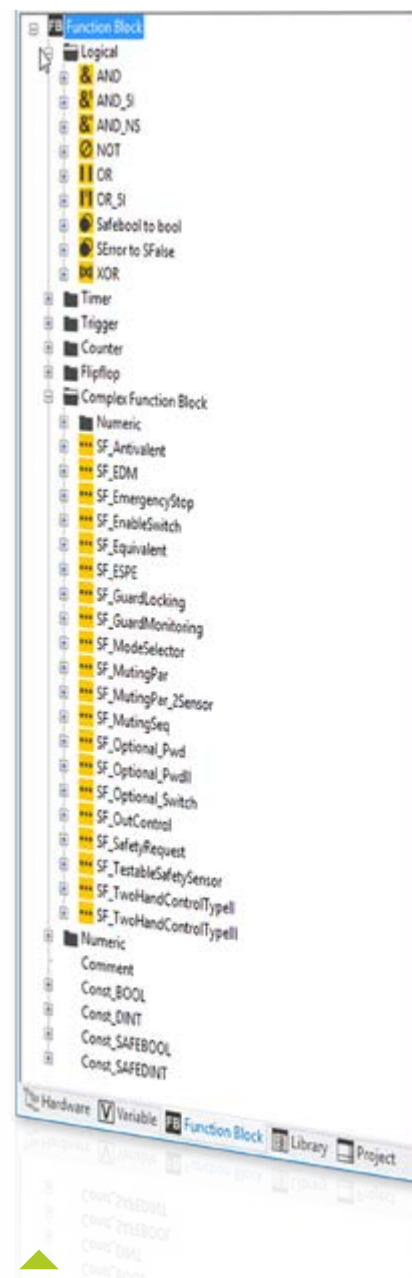
In the integrated graphical editor, function blocks and I/Os can be easily placed as desired via drag & drop and connected to the function-oriented variables of the PLC. Per project, several safety controllers can be used. A special feature of the S-DIAS safety system is that independent projects can exchange safety-relevant information.

MACRO TECHNOLOGY

With the SCP 211, SIGMATEK offers a powerful safety CPU (with FSoE Master) that supports modular safety development on the software side. This means that it is only necessary to create one safety application with all possible equipment variants for a machine or system with numerous options. Customized macro libraries can be created in the LASAL SafetyDesigner. For machines with many equipment options, the safety application can be customized using parameter lists – an engineering turbo that ensures maximum flexibility.

SAFETY HOT-SWAP

The software-based Hot-Swap feature ensures that modular machine components with their own safety CPUs can be flexibly integrated into the system, logged out and logged back into the machine network at a different location and that during runtime.



Extensive library with TÜV-certified safety function blocks



HOT FACTS

CONNECTIVITY

Ways to interact and communicate with other systems

FLEXIBLE

Various network topologies

OPEN

Platform- and manufacturer-independent data exchange via OPC UA / MQTT

Connectivity is a key enabler of modern automation solutions and forms the basis for efficient, flexible, and scalable production processes. By connecting machines, control systems, and IT systems, a continuous flow of data is established, providing transparency and real-time capabilities.

Industrial communication technologies such as industrial Ethernet, OPC UA, and MQTT ensure that data can be transmitted in a standardized and secure manner – from the field level right up to the cloud.

When it comes to Industrial Ethernet, SIGMATEK relies on the high-performance VARAN bus. It offers hard real-time capability with cycle times under 100 µs, deterministic communication, and high data security and flexibility. Thanks to its hardware-based implementation and flexible topologies, VARAN is ideally suited for demanding applications in machine building and process automation – from control logic to motion control tasks.

At the same time, the architecture is intentionally kept open to ensure interoperability. In addition to industrial Ethernet VARAN and EtherCAT as well as fieldbus systems such as Ethernet TCP/UDP, CANopen, and RS485/Modbus are supported for less time-critical tasks.

Connectivity is not just a technical requirement, but a strategic success factor for companies aiming to future-proof their automation systems and achieve sustainable competitive advantages.

OPEN STANDARD

VARAN is an open standard and manufacturer-independent. The rights to the real-time Ethernet technology are held by the VARAN BUS USER ORGANIZATION (VNO). All members have an unrestricted right to use VARAN technology.

EFFICIENCY IN THE DEVELOPMENT OF MACHINES

SOFTWARE LASAL

The modern all-in-one engineering tool LASAL enables the consistent and very flexible implementation of machine applications. Programming and configuration are greatly simplified – development times and time-to-market cycles are reduced significantly.

We have been using object orientation for more than 25 years and are therefore the industry leader. LASAL (IEC 61131-3) is object-oriented from the ground up and

designed as a low-code platform. As the name already states, the low-code development platform stands for less code and less programming.

HOT FACTS

INTEGRATED

ONE engineering tool for all phases of the development process

EFFICIENT AND CLEAR

With object-oriented programming, the highest modularity and reusability are achieved

COMFORTABLE

Numerous ready-to-use function blocks and efficient tools integrated

KNOW-HOW PROTECTION

By encryption of classes and projects



LASAL CLASS

ALL-IN-ONE

LASAL is a highly modern engineering tool that provides all functions for solving automation tasks: PLC programming, visualization, motion control, safety, diagnosis and remote maintenance.

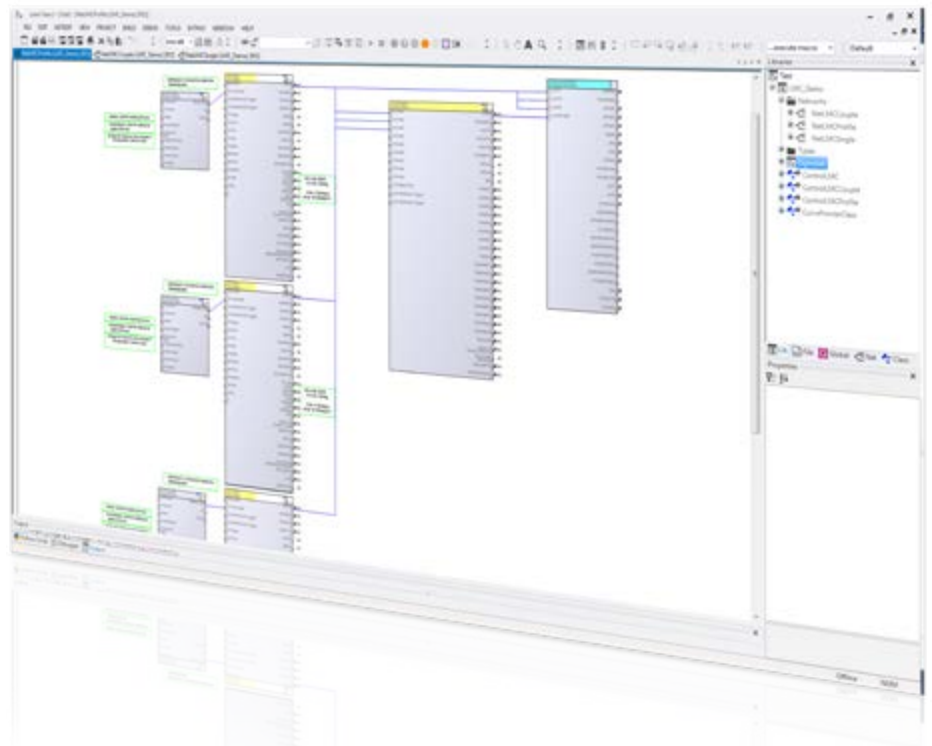
Object-oriented programming with LASAL guarantees you maximum flexibility: Through the object-oriented, modular construction of the software, you can quickly and flexibly react to customer-specific needs. The software modules (objects) can be combined in a toolkit system

OBJECT ORIENTED

In 2001, SIGMATEK was the first company to integrate object-oriented programming with graphical representation and client-server communication into automation technology. LASAL (IEC 61131-3 standard) also enables the modularization of machine functions in the software and thereby defines a new level of modularity and reusability. As in mechanics, where proven construction is always applied, the modular structure of LASAL enables application components to be easily reused once they have been created and tested without having to test them again. The software is thereby sustainable.

GRAPHICAL REPRESENTATION

Through graphical representation, the clarity is increased. The developer can therefore get a quick overview of the project structure and the relationship between the individual modules is clarified. Even complex applications can be



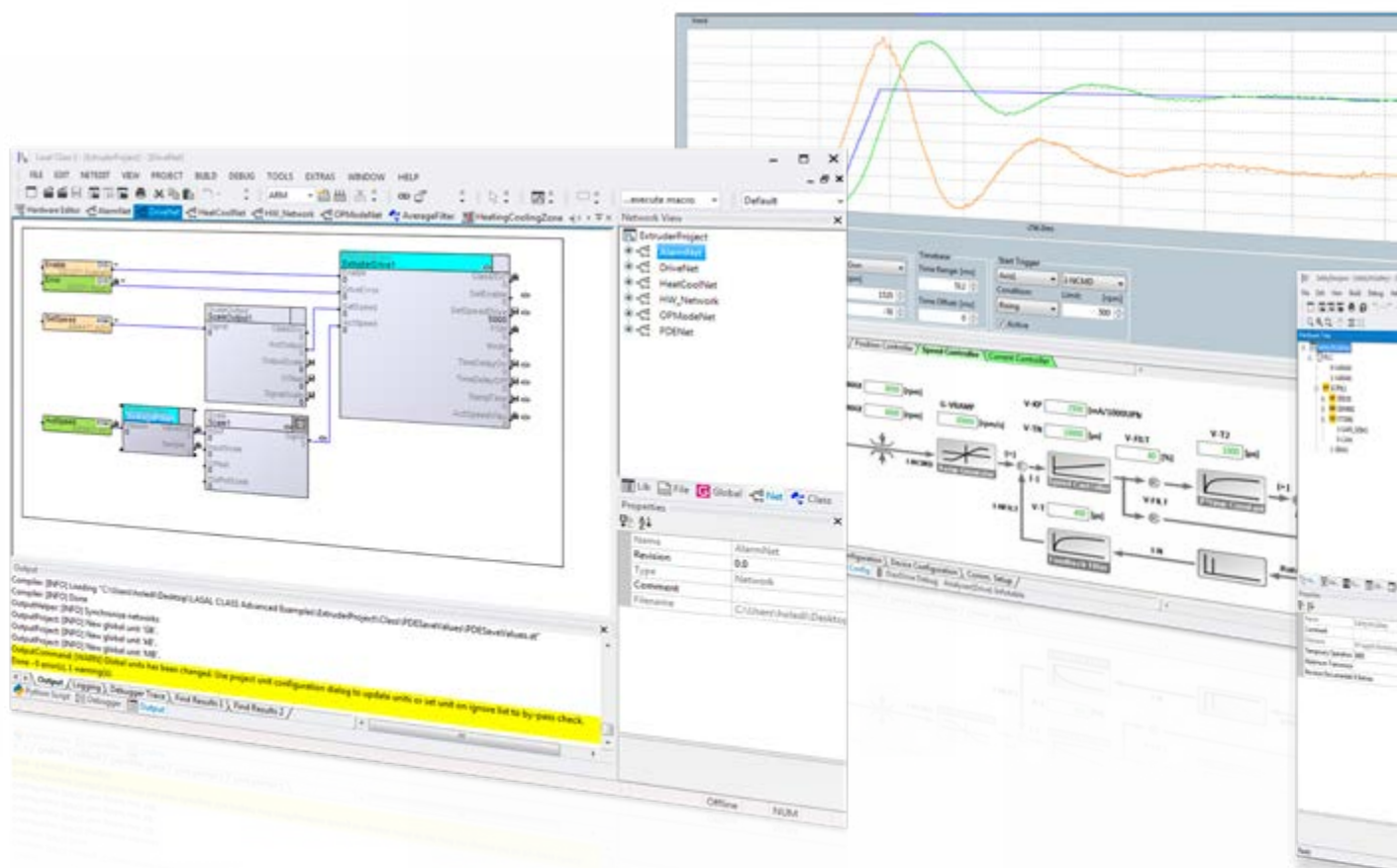
displayed transparently and clearly. This simplifies the implementation and helps reduce the engineering and maintenance times.

THE FUTURE IN SIGHT

LASAL can be used on the entire SIGMATEK range of products. The hardware platform can be changed without having to adapt the software. This ensures software compatibility across hardware generations. Naturally, LASAL supports the OPC UA communications protocol. Manufacturer and platform-independent data exchange are thereby possible.

READY TO USE

Fast software development thanks to ready-made templates and ready-to-use and tested software functions in the various Libraries.



LASAL CLASS

OBJECT-ORIENTED PROGRAMMING

With LASAL CLASS, the control can be programmed using object orientation. Behind a programming module (called an object), there is a class containing the program code and the corresponding data elements. Each class can assume a specific task, such as controlling a drive for example. The actual program code is written in the conventional IEC 61131-3 languages such as structured text, ladder diagram, SFC, interpreter or in ANSI-C. Ready-to-use application components (classes) reduce engineering enormously: "Program less – simply configure"

LASAL SCREEN LASAL VISU



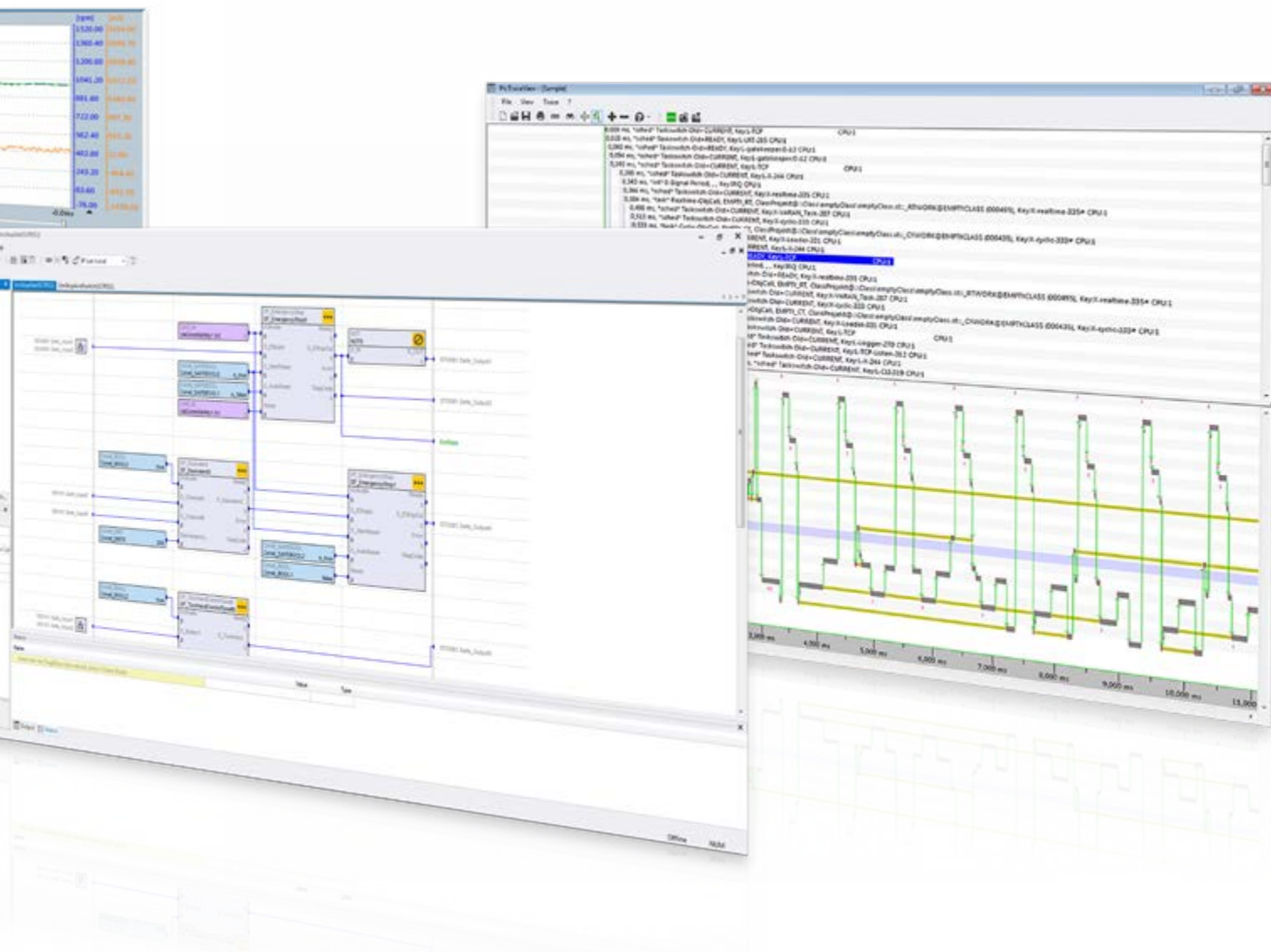
TOP VISUALIZATION

With the LASAL SCREEN Editor or LASAL VISU Designer, the visualization of your application can be easily created in the corporate design of your company. Design themes and an extensive graphics library is available to engineer your project. Complicated programming is eliminated. The "newcomer" to the Engineering Suite LASAL, the VISU Designer, enables hardware-independent visualization solutions on different HMI devices using current web technologies such as HTML5, CSS3 and JavaScript. Since the optics and logic of the controls are separate, the flexibility increases.

LASAL MOTION

FLEXIBLE MOTION DESIGNS

Motion control is seamlessly integrated into the control system. LASAL MOTION simplifies every drive technology task. Numerous servo drives from SIGMATEK as well as external products are provided as objects to simplify usage. Axis movements can be executed using simple data inputs or instructions without any programming. For frequently required functions, the LASAL drive library provides a large selection of pre-constructed motion function components - from positioning to synchronization of up to nine axes in a group.



LASAL SAFETY

INTEGRATE SAFETY

The seamless integration of SAFETY Designer into the LASAL engineering toolkit simplifies the programming and configuration of the safety controller. Logical connections and I/O configurations can be created easily. Predefined function blocks simplify the implementation and maintenance of the safety application. Data from the safety controller can also be used in the function related control system.

LASAL SERVICE

FIRST CLASS CONNECTIVITY

LASAL is rounded out with an extensive service package. Remote maintenance, software updates and inter-platform data exchange are comfortably performed using the LASAL SERVICE tools: Web server with LRMView, OPC UA, FTP and VNC client and server as well as MQTT client. In addition, the possibility of program changes using the update tool, simulation with LARS, etc.

FEATURES THAT CONVINCE

Efficient and comfortable tools support you in programming and troubleshooting: Online debugger, real-time data analyzer, Trace-View of the CPU tasks. Using the scripting language Python, software can be automatically generated for different variations of a certain machine type.

SAVE DEVELOPMENT TIME: READY-TO-USE SOFTWARE COMPONENTS

The SIGMATEK system concept provides all control disciplines required for a production machine from one source. As the basis, the complete PLC functionality for tasks such as process control, monitoring, in and output processing and calculations are available.

„Less programming – simply configuring“: Our engineering tool LASAL, supports the implementation of your machine or system software with preconstructed templates, as well as ready-to-use software. The extensive library includes, for example, packages for PID regulators, complex filter and regulation algorithms, various motion modules and robot kinematics.

In the HMI tool LASAL Screen add-ons are also provided, which in addition to the finished sequence control project, also contain the corresponding visualization. The VISUDesigner provides a large number of controls that simplify the creation of the web visualization.

All these functions are ready-to-use and can be modularly implemented in your application using the toolkit principle. There, it's clear that you can reduce the development times considerably and at the same time, the software quality increases. Depending on the complexity of your application, you achieve time savings in engineering time of up to 70 %.

EXAMPLES OF READY-TO-USE FUNCTIONS

■ Control modules

PID-controller, operating mode manager, filter algorithms, Interpreter

■ Organization & usability

Login function and implementation of access permissions, recipe management

■ Data analyzer

Oscilloscope for recording multiple channels

■ Motion

Motion control and profiles, robot kinematics, G-Code Viewer

■ Communication

OPC UA, MQTT, VNC

■ Industry-Specific

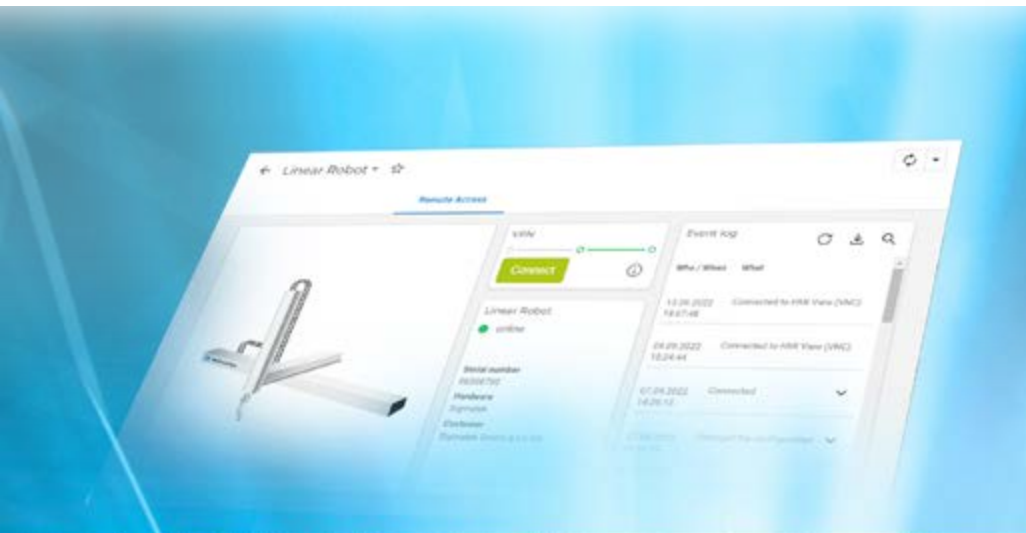
EM 77, EM 82.1-3, VDA 5050



CLOUD PLATFORM WITH VPN CONNECTION

SECURE REMOTE ACCESS

Remote access options increase your machine's availability. With the SIGMATEK „Remote Access Platform“ (RAP), you're provided with a modern web-based cloud platform for secure remote access options.



With the safe "Remote Access Platform" (RAP), you can operate the machine or system visualization over a VNC or web view – as if you were directly onsite.

SECURE OVER VPN

Over a secure VPN connection, actions such as monitoring, debugging, maintenance as well as updates can be performed in the central cloud platform – at any time, regardless of location.

The connection to the RAP can be made via the "Remote Access Router" (RAR) and with the operating system expansion "Remote Access Embedded" (RAE), which can be run on any SIGMATEK CPU.

INTUITIVE AND FLEXIBLE

The user interfaces are directly managed via the browser. Operating is highly intuitive and simple. In the clearly organized user interface, the Admin, Portal, Fleet manager and Studio sectors are provided.

In the Portal, all threads come together. Here, you will find the overview of all machines – in lists or a card view – where the connection is made via VPN. Devices and machines are added and configured in the Fleet manager. In the Studio, machine views (machine cards) are configured.

Comprehensive management of user roles and access rights, with two-factor authentication capability, ensure that each operator – customer, partner of service team – can be assigned specific rights.

MOBILE WITH CONNECT APP

SIGMATEK Connect is your mobile entrance to the Remote Access Platform. The app enables safe and easy remote access from any mobile end device.

READY-TO-USE

With the USB stick included with delivery, the RA-router (RAR) can be easily connected to the Remote Access Platform (RAP) and configured.

HOT FACTS

EFFICIENT REMOTE MAINTENANCE

Machine monitoring and maintenance – anytime and from any location

DIRECT ACCESS OVER VPN

Safe connection with machines over a central platform

BROWSER-BASED CLOUD PLATFORM

Manage user interfaces and directly access operating elements via the browser

CUSTOMER ORIENTED AND RELIABLE

SUPPORT AND SERVICE

We concentrate on your wishes and needs. In addition to our many years of experience in machine building and automation expertise, we bring the concept of service into the partnership – for the entire life cycle of your machine.

ENGINEERING SUPPORT

Together with you, we develop your project to a successful conclusion – of course, on-site as well. With our engineers and technicians, your machine or system is in the best hands: whether finding solutions, project development, engineering, initial start-up or service. Our goal is to create added value in all phases of the project.

SUPPORT HOT-LINE

When you need a fast answer to a technical question, our support is there for you around the clock. You will not get an automated response, rather a competent contact person will personally address your concerns.

IN USE WORLDWIDE

Your machines should run like clockwork and produce with maximum performance. Regardless of where you deliver your machine, we are there when you need us. Whether for an initial start-up, on-site service support or in the event of an emergency. We go everywhere – and fast.

PRACTICE-ORIENTED TRAINING

Regardless of whether you need a first glimpse into control technology or are interested in specific topics, in our practice-oriented training you acquire the necessary technical knowledge firsthand. The modularly constructed seminars are customized to various practical requirements.

FAST DELIVERY OF SPARE PARTS

Spare parts and repairs are always urgent. Therefore it is important to us, even after several years, to be able to deliver you the correct spare parts as fast as possible. Naturally, our extensive production depth also comes into play.

HOT FACTS

HIGHLY MODERN AUTOMATION

increase the productivity of your machine and makes it more flexible

SHORT DEVELOPMENT TIMES

Our experienced team supports you in all phases

INNOVATIVE IDEAS

For machine concepts of tomorrow

REDUCE COSTS

We make your machine more economic in all areas



INCREASE PRODUCTIVITY

- Higher output and better quality
- Improved machine processes
- Flexibility through automatic product changeover
- Reduction of down times

MACHINE CONCEPTS 4.0

- Fast implementation of technology trends
- Creative ideas from our experienced industry experts
- Long-term trusting partnerships as the basis for innovations

SHORTEN DEVELOPMENT TIMES

- Reliable support during the entire product life cycle
- Improved engineering processes through an integrated tool
- Reusability of software modules
- Training and coaching

REDUCE COSTS

- Savings through a complete view of a machine's total life cycle
- Cost-optimized and scalable hardware components
- High-performance engineering and service tools

INTERNATIONAL



AUSTRIA – CORPORATE HEADQUARTERS

SIGMATEK GmbH & Co KG
5112 Lamprechtshausen
Sigmatekstraße 1
Tel. +43 6274 43 21-0
Fax +43 6274 43 21-18
www.sigmatek-automation.com
office@sigmatek.at



GERMANY

SIGMATEK GMBH
76829 Landau
Marie-Curie-Straße 9
Tel. +49 6341 94 21-0
Fax +49 6341 94 21-21
www.sigmatek-automation.com
office@sigmatek.de



SWITZERLAND

SIGMATEK Schweiz AG
8308 Illnau-Effretikon
Schmittestrasse 9
Tel. +41 52 354 50 50
Fax +41 52 354 50 51
www.sigmatek-automation.ch
office@sigmatek.ch



ITALY

SIGMATEK Italia Srl
Office Bologna
Tel. +39 352 03 50 724
www.sigmatek-automation.it
office@sigmatek.it



GREAT BRITAIN

SIGMATEK Automation UK Limited
Leamington Spa, CV32 6JX
Gables House, 62 Kenilworth Road
Tel. +44 115 922 24 33
www.sigmatek-automation.co.uk
office@sigmatek-automation.co.uk



USA

SIGMATEK U.S. Automation, Inc.
44133 North Royalton, Ohio
10147 Royalton Rd., Suite N.
Tel. +1 440 582 12 66
Fax +1 440 582 14 76
www.sigmatek-automation.us
office@sigmatek.us



CHINA

SIGMATEK Automation CO., Ltd
315040 Ningbo · Room 15A03,
Building A, No. 555, Jingjia Road
Tel. +86 574 87 75 30 85
Fax +86 574 87 75 30 65
www.sigmatek-automation.cn
office@sigmatek-automation.cn



BELGIUM

SigmaControl B.V.
2992 LC Barendrecht
Tel. +32 329 770 07
www.sigmacontrol.eu
office@sigmacontrol.eu



ITALY

SIGMA MOTION SRL
36075 Montebelluna Maggiore (VI)
Tel. +39 0444 60 75 75
www.sigmamotion.it
info@sigmamotion.it



JAPAN

SUMITOMO HEAVY INDUSTRIES, LTD.
Mechatronics Division
141-6025 Tokyo
Tel. +81 3 67 37 25 32
www.shi-mechatronics.jp
ryuji.nakajima@shi-g.com



KOREA

Servostar CO., Ltd
14988 Siheung-si · Gyeonggi-do
#501, 168-28, Mokgamdulle-ro
Tel. +82 31 486 87 87
Fax +82 31 486 88 84
servo@servostar.co.kr
www.servostar.co.kr



NETHERLANDS

SigmaControl B.V.
2992 LC Barendrecht
Tel. +31 180 69 57 77
www.sigmacontrol.eu
office@sigmacontrol.eu



PORTUGAL

Plasdan Automation & Add-On Systems
2430-379 Marinha Grande
Tel. +351 244 57 21 10
www.plasdan.pt
info@plasdan.pt



SWEDEN

SIGBI Automation AB
254 64 Helsingborg
Tel. +46 42 654 00
www.sigmatek.se
info@sigmatek.se



SOUTH AFRICA

Anytech (PTY) Ltd.
Corner Homestead & Orleans Road
Kya Sand, Randburg 2163
Tel. +27 11 708 19 92
www.anytech.co.za
info@anytech.co.za



THAILAND

SCMA CO., LTD.
69/494 Moo 1 Tiwanon Road
Banmei, Pakkret, 11120 Nonthaburi
Tel. +66 2 615 48 88
www.scma.co.th
contact@scma.co.th



TURKEY

Dedem Mekatronik
35477 Menderes – İzmir
Tel. +90 232 47 21 848
www.dedemmekatronik.com
satis@dedemmekatronik.com