VIPA SLIO
The smart control and I/O system
VIPA sets a further milestone in the automation industry with the newly developed system SLIO. SLIO combines high functionality and a clever mechanical concept in an extremely compact design. SLIO stands for slice input and output. SLIO is very compact and is exactly adapted to the demands of the application slice by slice.

Many interface modules are available for use as an I/O system. Apart from PROFINET and PROFIBUS, EtherCAT, DeviceNet, CANopen, EtherNet/IP as well as Modbus TCP are also available. Both the SLIO CPUs and all SLIO interface modules support up to 64 electronic modules on the SLIO backplane bus.

A module unit consists of terminal and electronic modules that are connected with a safe slide and lock mechanism. The terminal module combines clamps, intake for the electronic module, and the SLIO backplane bus connector. When servicing only the electronic module is exchanged by simply pulling it out from the terminal module. The wiring and mounting on the 35mm standard profile rail remain unchanged.

The power modules used are in contrasting colors to the signal and function modules. The electronic modules are supplied with voltage and separated – if required - in potential groups by the power modules.

The cage clamps on the terminal module, which are arranged in the shape of staircases with the proven and particularly tight-contacting cage clamp technology, enable a fast, clear and safe wiring.

With the integrated status LEDs and the user friendly front labeling strips of the electronic modules the channel accurate assignment and the readability of the channel status are clear and precise.

The new SLIO backplane bus concept with a speed of up to 48 Mbit/s ensures very short reaction times.

With the new SLIO CPU the I/O system has become one of the most advanced centralized control systems on the automation market. With the introduction of the VIPA SetCards (VSC) the customer can configure a suitable CPU within seconds. Besides expandable work memory you can also select between different field bus connections.
VIPA SLIO speaks many languages

Talent of languages – knowing many languages has clear advantages

High-performance backplane bus
Fast backplane bus concept with 48MBit/s offers a fieldbus independent switching to exactly +/-1µs

Modular expandable
Up to 64 signal and function modules per interface module

Integrated power module
The bus interface and the connected periphery modules are supplied via the integrated power module for power supply

To get on worldwide!
Suppose a German mechanical engineer supplies his plant which is equipped with SLIO and, for example, the VIPA CPU 315 to a worldwide production company. In Europe his customer requires PROFINET as a communication basis. In the USA the type of controller has to be an American one which only communicates via EtherNet/IP. And in Asia for example everything works via EtherCAT. SLIO can be used easily for all: only the coupler needs to be exchanged.
The facts

Significantly simplified ordering process
- You receive everything that is necessary for operation with one order number
- All modules can be ordered individually
- The power module is included with the order
- SLIO does not need a terminal resistor (so there is nothing extra that you have to think about when ordering)

High-performance bus
- Transmission rates of up to 48 Mbit/s
- Very fast reaction time of up to 20µs
- One terminal module for all signal and function modules

Easy installation and servicing
- Easy mounting by safe slice mechanism
- Click connection for fast mounting and easy shielding
- Error protection due to coding
- Unique two stage concept consisting of terminal modules and electronic modules allowing simple and fast maintenance

Space saving connection technology
- Space saving staircase-shaped wiring with cage clamps
- Easy exchange of modules due to unique wiring concept
- High modularity due to 2, 4 and 8 channel modules

Clear status and diagnosis monitoring
- Monitoring of diagnosis and channel status via LEDs
- Clear allocation and readability of the channel status
- Detailed diagnosis of each electronic module in the system
- Provision of labeling templates

Clever, user friendly labeling
- Labeling strips for individual indication per channel
- Status LEDs with direct allocation on the labeling strip
- Terminal assignment and terminal graph on each module
### Fieldbus coupler
- 053-1CA00 CAN coupler
- 053-1DN00 DeviceNet coupler
- 053-1DP00 PROFIBUS coupler
- 053-1EC00 EtherCAT coupler
- 053-1P00 EtherCAT/P coupler
- 053-1MT00 Modbus TCP coupler
- 053-1PN00 PROFINET coupler

### Power supply modules
- 007-1AB05 DC24V10A
- 007-1AB10 DC24V4A, 2 DC24V+5V/2A

### Distribution modules
- 001-1BA00 Potential distribution module_8xDC24V
- 001-1BA10 Potential distribution module_8xDC0V
- 001-1BA20 Potential distribution module_4xDC24V_4xDC0V

### Digital Input modules
- 021-1BB00 DI8xDC24V
- 021-1BD00 DI4xDC24V
- 021-1BF01 DI8xDC24V 0,5ms
- 021-1BD50 DI4xDC24VNPN

### Analog Input modules
- 031-1CD30 AI4x16Bit_0...10V
- 031-1BD40 AI4x12Bit_0(4)..20mA
- 031-1BB60 AI2x12Bit_0(4)...20mA, 2-wire

### Analog Output modules
- 032-1BB40 AO2x16Bit_0...10V
- 032-1BB30 AO2x16Bit_Thermocouple

### Function and communication modules
- 050-1BA00 2xDC_Mot_24V1,5A
- 050-1BS00 1xSSI,RS422,8...32 Bit

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**All modules at a glance**
The new benchmark

In addition to the SLIO IO system series we also offer you one of the most advanced and modern control systems on the market. In the development of the system we already made sure that with the powerful CPUs a completely new benchmark can be created in the field of compact CPUs. The SLIO CPUs are still one of the fastest S7 compatible CPUs on the market.

Equipped with the proven SPEED7 technology - which has continuously been enhanced for more than 15 years is a challenge for many large competitors. We offer features that have still to be acquired by the competition or are not available at all. These include Integrated Ethernet interfaces, the high-performance backplane bus, or the expandable work memory that gives you the option of expanding your control technology together with your application.

Our own field busses such as PROFIBUS, PROFINET and EtherCAT, are the standards with which we communicate and so can cover an additional field of applications. Whether it is a matter of small programs where a CPU with integrated input and output channels is sufficient or a CPU that can cover larger applications thanks to EtherCAT and Motion Control: with SLIO CPUs you are always right.

Trimmed performance and compatibility

The highlights of all SLIO CPUs

- 100% compatible with S7 programming language
- programmable with SPEED7 Studio, TIA, Simatic Manager, WinPLC
- extremely fast cycle times
- up to 64 I/O modules in a line
- proven SPEED7 technology
- deployable without memory card
A unique concept

With the SLIO CPUs we have been taking completely new paths from the very beginning. And we have shown that it works. You configure exactly the CPU that fits to your application. No more and no less. And as in a good relationship adjustments always have to be made. This is easy with the SLIO CPU. Upgrades can be undertaken at anytime. Simply decrease your storage costs by reducing the number of basic CPUs in stock. Just activate the CPU you need via the SLIO configuration concept. As of now: easy ordering, optimal logistics, and very flexible configuration.

Choose from over 100 different combination options. And the list of new technology functions and features is growing and growing. What do you have to do? Simply insert the VSC (VIPA Set Card) which is provided by us into your SLIO CPU and activate the features in your CPU and you have the matching CPU for your installation. Activation takes a maximum of 10 seconds. The fastest users can do it in 5!

„Now you decide what is inside your CPU and no one else!“

The highlights of the VIPA concept
- considerable reduction of storage costs
- flexible reacting by split second configuration
- always well prepared in case of error
Smart and compact

SPEED7 Performance as compact as ever before
In one casing, the compact CPU 013C combines a programmable logic controller with integrated SPEED7 technology, and digital and analog input and output channels as well as specific channels with special technological functions.

Integrated I/O channels save money and space
New in the SLIO class is the design of the SLIO compact CPU with integrated input/output channels which for example allows a particularly space saving setup within the serial mechanical engineering installations. The attractive price of the new compact CPU reduces the initial costs and also permits considerable space saving.

Features of the VIPA SLIO compact CPU
- High clock rates by the proven SPEED7 technology and fast backplane bus with 48Mbit/s transmission rate
- Expansion options for up to 64 modules, all module types of the SLIO system deployable
- CPU configuration via VSC for memory sizes and optional PROFIBUS master or slave interface
- Status LEDs for CPU and digital signal channels
- 2 Port Ethernet switch for active Ethernet and S7 communication
- Serial interface for MPI communication, switchable for PIP communication and optional via VSC activation as PB-DP master or PB-DP slave interface
- Integrated I/O channels: 16 x DI, 12 x DO, 2 x AI
- 6 channels for technology functions: 4 counter/frequency measurement, 2 PWM
The intelligent modular ones

1. **2 Port Ethernet switch**
   Always integrated. This allows easy programming and flexible communication with a touch panel or with Panel PCs.

2. **PROFINET / EtherCAT controller**
   With our SLIO 015 CPUs you receive either a high-performance and flexibly deployable PROFINET or EtherCAT controller for connection of up to 128 (PN) or 128 (EC) users. Of course you can also use this interface as an active Ethernet interface (standard with the SLIO 014 CPU).

3. **Active Ethernet- / PROFINET interface**
   Both the SLIO 015 CPUs as well as the new SLIO 017 CPU have a additional interface. With the SLIO 015N (VIPA SLIO Motion Controller) the interface for the active Ethernet communication is used. The SLIO 015PN and the SLIO 017PN uses this interface for PROFINET communication (2 Port switch with -X4).

4. **Multi-programmable**
   You are not tied to one system. Use the engineering tool you are most familiar with: SPEED7 Studio, SIMATIC Manager, or TIA Portal. We are open - we stay open!

5. **Full-fledged serial interface**
   Also a standard of all our SLIO CPUs: ASCII, STX/ETX, USS, 3964(R), MPI and Modbus RTU master/slave.

6. **MPI - For us a must**
   Of course, you can expand this interface with a PROFIBUS SLAVE or a MASTER. Exactly upon your wish.

7. **Web interface**
   Each of our SLIO CPUs has a web interface. With this you can read out dialog information and the status of your modules. Remote access to this page is of course possible. A simple connection to your network and you have access to your web interface.

8. **Exchangeable power module**
   We provide you with the power module directly to your CPU. In the event of a fault we simply change the electronic module and you can continue working. We have obviously thought of you here.

9. **SD card and SD card locking**
   Higher performance and security with the use of SD cards, including a unique SD card lock. You can only find it here!

10. **Highspeed backplane bus**
    Our high-speed backplane bus with 48 Mbit/s allows you to achieve extremely fast reaction times of up to 20µs. Use the full capacity of all modules from the SLIO IO system. You can connect up to 64 modules in series.

11. **Work memory expandable**
    Known from the globally unique SPEED7 technology, we have of course also made sure that you can expand the work memory. Your CPU simply grows with your application.
The clever expansion of the SLIO principle

With the EtherCAT network integration the SLIO Motion Controller extends the existing SLIO diversity and now offers you - in combination with VIPA SPEED7 Studio - modern Motion Control functions in accordance with PLCopen standards. You can start right away with project engineering and programming after the activation of the Motion Control functions with the VIPA Set Card.

With a few clicks straight to the perfect Motion Control application

Our VIPA SLIO 015N CPU opens a new, highly efficient way of drive configuration. Here, the VIPA Motion Control concept focuses on the automation task.

The best of the VIPA control and the YASKAWA drive world such as Sigma-5, Sigma-7, A1000, V1000 and virtual positioning and rotational speed axes are now combined.

EtherCAT connects

You simply build up a direct connection in SPEED7 Studio to the YASKAWA servo drives or frequency inverters via EtherCAT. High-performance cycle synchronicity and multi-axis applications are now possible with EtherCAT and the new SLIO Motion Controller.

Key features of the VIPA SLIO Motion Controller

- One CPU for standard and Motion Control applications
- Fully integrated EtherCAT master
- Proven SPEED7 technology for the highest clock rates
- Cycle synchronicity and multi-axis applications via EtherCAT
- Programmable with VIPA SPEED7 Studio
- Highly flexible and modular system
- Solutions from a single source for the control and drive part
- Up to 20 controllable axes
Technical data

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VIPA – This is who we are

250 EMPLOYEES
IN OVER 60 COUNTRIES

over 30 YEARS OF EXPERIENCE

3200 DIFFERENT ARTICLES

250,000 INSTALLED CPUs