SLIO

The smart control and I/O system

YASKAWA

A brief overview

SLIO is a modular and extremely compact control and I/O system. It can be universally combined and deployed with each of our established systems and nearly all those of other producers.

System SLIO sets further milestones in the automation industry.

SLIO combines high performance and new functionalities with a clever mechanical concept in an extremely compact design. SLIO stands for slice input and output. SLIO is fully modular and is exactly adapted to the demands of the application slice by slice.

For use as an IO system, a wide range of interface modules such as PROFINET, PROFIBUS, EtherCAT, CANopen, EtherNet/IP, MECHATRO-LINK III, as well as as well as Modbus TCP are 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 35 mm standard profile rail remain unchanged.

The electronic modules are supplied with voltage and separated – if required - in potential groups by the power modules.
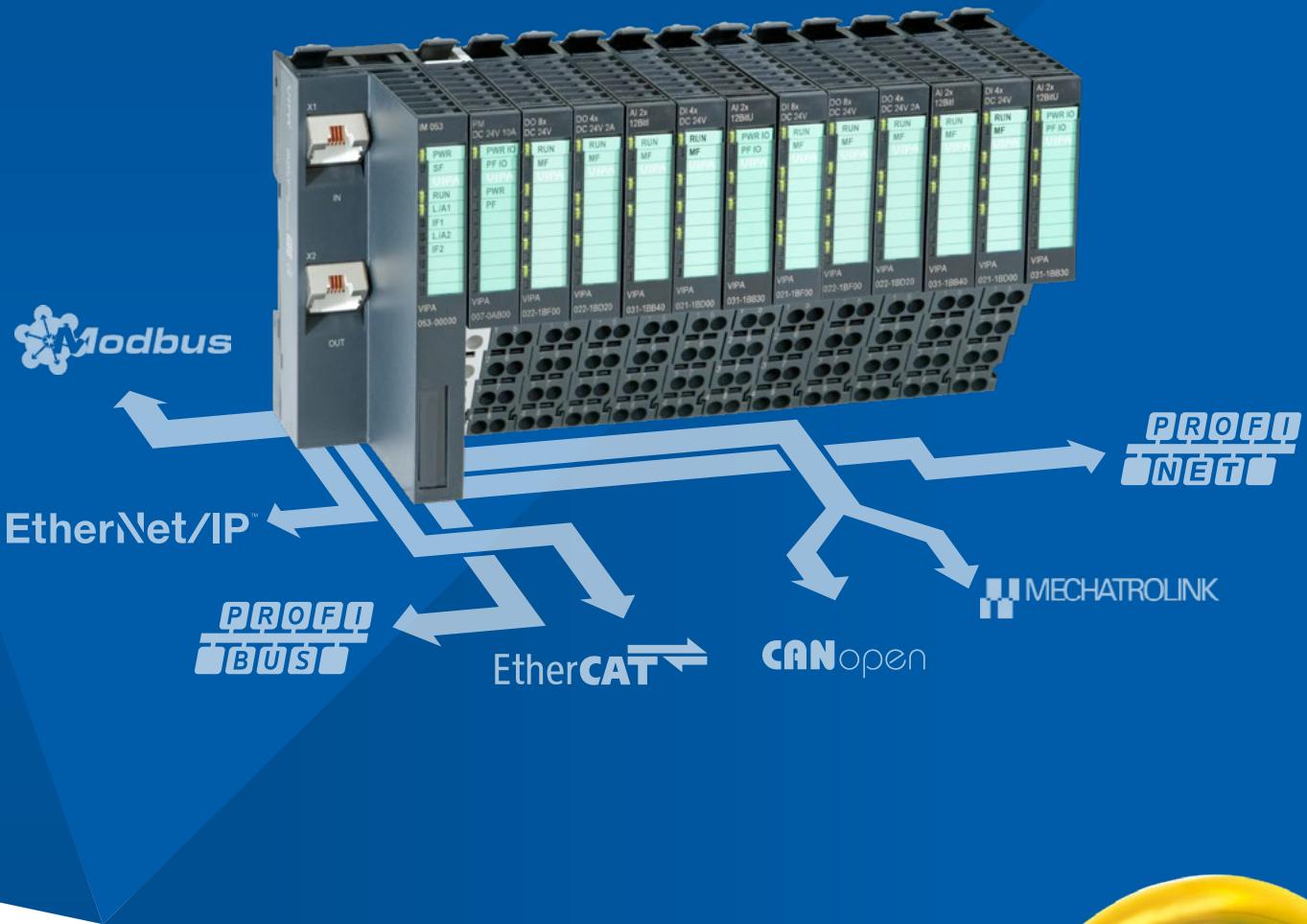
The cage clamps on the terminal module, which are arranged in the shape of staircases with the proven and particularly tight-contacting cage clamp technology, enable a fast, clear and safe wiring.

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 SLIO CPU, the I/O system becomes an advanced central control system With the introduction of the SetCards the customer can configure a suitable CPU within a short time. Besides expandable work memory you can also select between different field bus connections.

Flexibility capitalised

Modbus

EtherNet/IP™

PROFI BUS

EtherCAT

CANopen

MECHATROLINK

PROFI NET

SLIO as decentralised periphery

High-performance backplane bus

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

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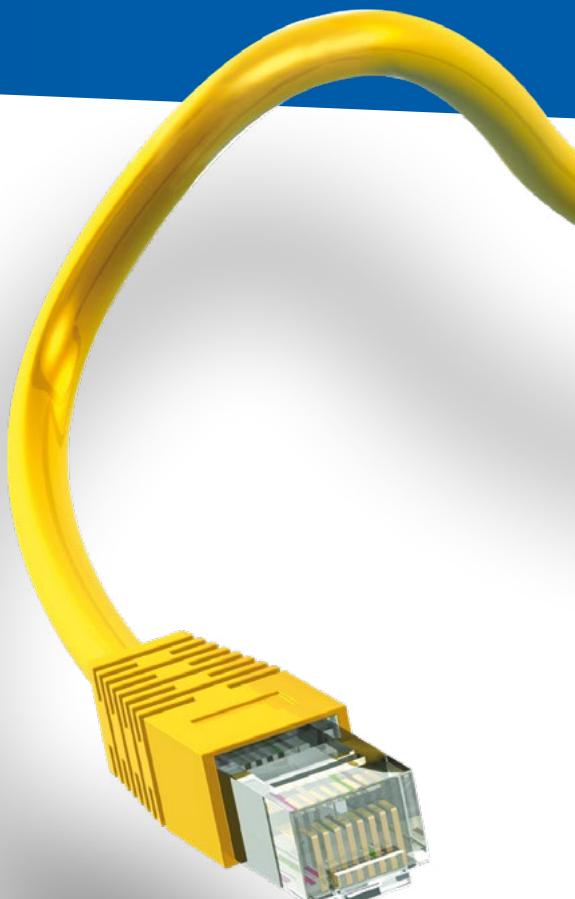
Up to 64 signal and function modules per interface module

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 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.

All modules at a glance

Fieldbus coupler

053-1CA00	CANopen coupler
053-1DP00	PROFIBUS coupler
053-1ML00	MECHATROLINK-III coupler
053-1EC01	EtherCAT coupler
053-1IP01	EtherNet/IP coupler
053-1MT01	Modbus TCP coupler
053-1PN01	PROFINET coupler

Digital Input modules

021-1BB00	DI 2x DC 24 V
021-1BB10	DI 2x DC 24 V 2 µs … 4 ms
021-1BD00	DI 4x DC 24 V
021-1BD10	DI 4x DC 24 V 2 µs … 4 ms
021-1BD40	DI 4x DC 24 V 3-wire
021-1BD50	DI 4x DC 24 V NPN
021-1BD70	DI 4x DC 24 V Time stamp
021-1BF00	DI 8x DC 24 V
021-1BF01	DI 8x DC 24 V 0.5 ms
021-1BF50	DI 8x DC 24 V NPN
021-1BH00	DI 16x DC 24 V
021-1DF00	DI 8x DC 24 V Diagnosis
021-1SD00	DI 4x DC 24 V Safety / PROFIsafe
021-1SD10	DI 4x DC 24 V Safety / FSoE

Power supply modules

007-1AB00	DC 24 V 10 A
007-1AB10	DC 24 V 4 A DC 24 V +5 V/2 A
007-0AA00	DC 24 V 10 A

Distribution modules

001-1BA00	Potential distribution module 8x DC 24 V
001-1BA10	Potential distribution module 8x DC 0 V
001-1BA20	Potential distribution module 4x DC 24 V, 4x DC 0 V

Digital Output modules

022-1BB00	DO 2x DC 24 V 0.5 A
022-1BB90	DO 2x DC 24 V 0.5 A PWM
022-1BD00	DO 4x DC 24 V 0.5 A
022-1BD20	DO 4x DC 24 V 2 A
022-1BD50	DO 4x DC 24 V 0.5 A NPN
022-1BD70	DO 4x DC 24 V 0.5 A Time stamp
022-1BF00	DO 8x DC 24 V 0.5 A
022-1BF50	DO 8x DC 24 V 0.5 A NPN
022-1BH00	DO 16x DC 24 V 0.5 A
022-1DF00	DO 8x DC 24 V 0.5 A Diagnosis
022-1HB10	DO 2x Relais DC 30 V / AC 230 V/3 A
022-1HD10	DO 4x Relais DC 30 V / AC 230 V/1.8 A
022-1SD00	DO 4x DC 24 V 0.5 A Safety / PROFIsafe
022-1SD10	DO 4x DC 24 V 0.5 A Safety / FSoE

Analog Input modules

031-1BB10	AI 2x 12 Bit 0(4) ... 20 mA ISO, 2-wire isolated
031-1BB30	AI 2x 12 Bit 0 ... 10 V
031-1BB40	AI 2x 12 Bit 0(4) ... 20 mA
031-1BB60	AI 2x 12 Bit 0(4) ... 20 mA 2-wire
031-1BB70	AI 2x 12 Bit -10 ... 10 V
031-1BB90	AI 2x 16 Bit Thermocoupler
031-1BD30	AI 4x 12 Bit 0 ... 10 V
031-1BD40	AI 4x 12 Bit 0(4) ... 20 mA
031-1BD70	AI 4x 12 Bit -10 ... 10 V
031-1BD80	AI 4x 16 Bit R RTD 2x 3/4-wire
031-1BF60	AI 8x 12 Bit 0(4) ... 20 mA
031-1BF74	AI 8x 12 Bit -10 ... 10 V
031-1CA20	AI 1x 16 Bit DMS 1x 4/6-wire
031-1CB30	AI 2x 16 Bit 0 ... 10 V
031-1CB40	AI 2x 16 Bit 0(4) ... 20 mA
031-1CB70	AI 2x 16 Bit -10 ... 10 V
031-1CD30	AI 4x 16 Bit 0 ... 10 V
031-1CD35	AI 4x 16 Bit 0 ... 10 V
031-1CD40	AI 4x 16 Bit 0(4) ... 20 mA
031-1CD45	AI 4x 16 Bit 0(4) ... 20 mA
031-1CD70	AI 4x 16 Bit -10 ... 10 V
031-1LB90	AI 2x 16 Bit Thermocoupler
031-1LD90	AI 4x 16 Bit R RTD 2x 3/4-wire
031-1PA00	AI 1x 3 Ph 230/400 V 1 A SLIO Energy measuring clamp
031-1PA10	AI 1x 3 Ph 230/400 V 1/5 A SLIO Energy measuring clamp

Analog Output modules

032-1BB30	AO 2x 12 Bit 0 ... 10 V
032-1BB40	AO 2x 12 Bit 0(4) ... 20mA
032-1BB70	AO 2x 12 Bit -10 ... 10 V
032-1BD30	AO 4x 12 Bit 0 ... 10 V
032-1BD40	AO 4x 12 Bit 0(4) ... 20 mA
032-1BD70	AO 2x 12 Bit -10 ... 10 V
032-1CB30	AO 2x 16 Bit 0 ... 10 V
032-1CB40	AO 2x 16 Bit 0(4) ... 20 mA
032-1CB70	AO 2x 16 Bit -10 ... 10 V
032-1CD30	AO 4x 16 Bit 0 ... 10 V
032-1CD40	AO 4x 16 Bit 0(4) ... 20 mA
032-1CD70	AO 4x 16 Bit -10 ... 10 V

Function- and Communicaton modules

040-1BA00	RS232C, ASCII, STX/ETX, 3964R, Modbus, PtP
040-1CA00	RS422/485, ASCII, STX/ETX, 3964R, Modbus, PtP
050-1BA00	1x 32 Bit(AB) DC 24 V, DO 1x DC 24 V 0.5 A
050-1BA10	1x 32 Bit(AB) DC 5 V 2 MHz
050-1BB00	2x 32 Bit(AB) DC 24 V
050-1BB30	2x 32 Bit(AB) DC 24 V ECO
050-1BB40	2x 24 Bit DC 24 V 600 kHz, Frequency measurement
050-1BS00	1x SSI, RS422, 8 ... 32 Bit, 1x DI, 1x CO, 1x CI
054-1BA00	1x Stepper 24 V 1.5 A, 1 CH (2 DO), Feedback (2 DI)
054-1CB00	1x DC Mot 24 V 1.5 A, 2 CH (2 DO), Feedback (2 DI)
054-1DA00	1x PulseTrain RS422, 0-1000 kHz, 24 V DC, Feedback (2 DI)
060-1AA00	Line Extension, Extension module Master
060-1BA00	Line Extension, Extension module Slave