

## EY-IO 550: I/O module, digital outputs (relays), modu550

### How energy efficiency is improved

SAUTER EY-modulo 5 technology: modular, fast and universal

### Features

- Part of the SAUTER EY-modulo 5 system family
- 6 digital outputs
- Plug-in element for extending the modu525 automation station (AS)
- Power supply from modu525 AS
- Direct labelling on the front
- Can be equipped with a local operating and indicating unit



EY-IO550F001

### Technical data

Power supply		
Power supply		From modu525 AS via I/O bus
Power consumption <sup>1)</sup>		≤ 2.9 VA/1.6 W
Power loss		≤ 1.6 W
Current consumption <sup>2)</sup>		≤ 100 mA
Ambient conditions		
Operating temperature		0...45 °C
Storage and transport temperature		-25...70 °C
Admissible ambient humidity		10...85% rh, no condensation
Inputs/Outputs		
Digital outputs		6
Type of outputs		Relay (0-1), NO contacts, galvanically isolated
Load		24...250 V~/2 A
Switching frequency, mechanical		10 <sup>6</sup> cycles
Interfaces and communication		
Connection for modu6 (LOI)		6-pin, integrated
Connection, I/O bus		12-pin, integrated
Connection terminals		12 (0.5...2.5 mm <sup>2</sup> )
Construction		
Fitting		On top-hat rail
Dimensions W x H x D		42 × 170 × 115 mm
Weight		0.3 kg
Standards and directives		
Type of protection		IP 20 (EN 60529)
Protection class		I (EN 60730-1)
Environment class		3K3 (IEC 60721)
Software class A		EN 60730-1
CE conformity according to	Low-voltage directive 2006/95/EC	EN 60730-1, EN 60730-2-9
	EMC directive 2004/108/EC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Overview of types		
Type	Properties	
EY-IO550F001	I/O module, digital outputs (relays), modu550	

<sup>1)</sup> On the primary side of modu525 base station (230 V~)

<sup>2)</sup> Supply from modu525 base station



**Accessories****Local operating and indicating units (LOI)**

Type	Description
EY-LO630F001	16-LED indication, bi-colour
EY-LO650F001	6 switches, auto-0-I, 4 LEDs operation/indication
EY-LO650F002	3 switches, auto-0-I-II, 4 LEDs operation/indication

**Components**

Type	Description
0929360005	PCB relays (2 × pluggable electronic PCB with 3 relays, including connection terminals)

**Description of operation**

The modu550 I/O module is used to activate actuators such as contactors, valve drives or displays of operational systems, e.g. in HVAC engineering.

The I/O module has a total of 6 digital outputs comprising relays.

**Intended use**

This product is only suitable for the purpose intended by the manufacturer, as described in the “Description of operation” section.

All related product regulations must also be adhered to. Changing or converting the product is not admissible.

**Engineering notes**

The modu550 I/O module is generally comprised of two components. The baseplate in which the I/O bus system and the connection terminals are integrated and the actual I/O module electronics.

**Fitting/assembly**

The baseplate of the I/O module is fitted in a cabinet using a top-hat rail (EN 60715) and connected on the side directly to the I/O bus of the modu525 AS or modules. This work must only be carried out in the de-energised state.

The baseplate contains the “bus module”, which is responsible for power supply and continuous communication. This ensures that faults due to a failure or partial defect in the electronic component do not affect the function of other downstream modules.

Removing/inserting the I/O module electronics from/to the baseplate is possible while the AS is in operation.

To ensure plant safety and to avoid any faults at inputs or outputs, the I/O module electronics should only be removed or inserted while the base station is switched off.

The relays are installed into 2 pluggable PCBs with connection terminals, allowing them to be easily replaced.

**Labelling concept**

The I/O module can be labelled with a paper insert in the frontal transparent cap. There are specially perforated label sheets available for this purpose.

The labelling is usually carried out using texts generated from CASE Suite, and the labels are printed on normal A4 paper using commercial printers.

**Assigning modules to AS**

The I/O module electronics have their own connection without any pin coding so that only the correct baseplate can be used. The modu525 AS detects whether a module baseplate is plugged into the I/O bus. Baseplate type and module type assignment for the I/O modules on the AS are defined with CASE Suite. This information is permanently stored in the AS.

**LED indicator/function**

The I/O module is equipped with a system LED that indicates the operating statuses as follows:

**System LED**

LED I/O bus	Status	Description
No designation	Continuous green light	Module in operation
	Flashing green or red	Module not ready for operation
	Alternating green – red – off	Lamp test active (indicator type priority)
	No indicator	No power supply

## Digital outputs

Number of outputs	6
Type of outputs	Relays, normally-open contacts (0-I)
Load on outputs	24...250 V~/2 A resistive load
Processing cycle time	≤ 500 ms
Switching frequency	10 <sup>6</sup> cycles

Real feedback is only possible via digital inputs (BACnet COMMAND FAILURE).

The relay outputs can each be supplied with a voltage of a maximum of 250 V~ and loaded with 2 A. The plant devices are connected using screw terminals. This may only take place when the system is disconnected from the electrical supply.

Special protective measures allow the relay outputs to be safely separated from one another. This allows mixed operation with both 250 V~ and SELV/PELV circuits without mutual interference.

Defined relay statuses in the event of a module defect are guaranteed by an independent internal cut-off facility. This prevents the relays/outputs from flickering.

The outputs of the relay contacts adopt the defined status "0" (Open):

- when the power supply/communication on the I/O bus is interrupted,
- or, when the AS power supply fails.

## Channel and terminal assignment

Description modu550	Channel	Schematic	Terminals	
			In	Out
Digital output (relay)	0	R0	1	2
	1	R1	3	4
	2	R2	5	6
	3	R3	7	8
	4	R4	9	10
	5	R5	11	12

## Connection of local operating unit

The modu550 I/O module can be complemented with a modu630 local indicating unit (LOI) to allow actuated outputs to be displayed directly. The function corresponds to the standard EN ISO 16484 2:2004 for local override and indicating units. All outputs can also be actuated manually via the modu650 local operating units.

Two types are available:

- EY-LO650F001 with 6 switches (automatic mode "A", 0-I) with LED indicators
- EY-LO650F002 with 3 switches (automatic mode "A", 0-I-II) with LED indicators

The local operating unit can be installed and removed during operation (hot-pluggable) without affecting functions of the AS or I/O module.

Detailed information/functions of the LED actuation options can be seen in the PDS 92.081 for EY-LO 6\*\*.

If an incompatible operating unit is connected, this status is indicated by the flashing of all LEDs (red and yellow); there is no risk of the I/O module being destroyed.



### Note

Before inserting an indicating and operating unit, all switch positions (AUTO) must be checked to ensure that no undesired switching statuses are active. When the unit is removed, all outputs are operated with the automatic statuses of the I/O module.

In accordance with the standard, the local override and indicating units allow restricted operation of system components without involvement of the AS intended for the application.

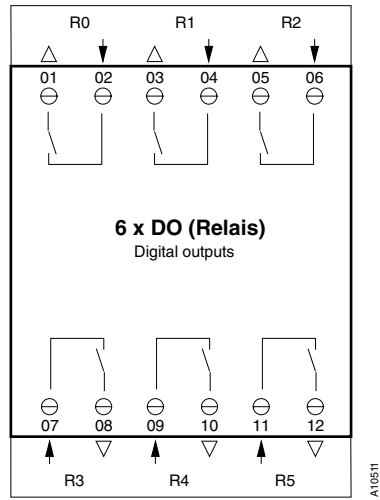
Outputs of the AS or the I/O modules in manual position may change their status briefly when the user program is downloading. The local operating unit can be used to actuate the relay outputs in the AS directly even without a user application (CASE Engine).

## Disposal

When disposing of the product, observe the currently applicable local laws.

More information on materials can be found in the Declaration on materials and the environment for this product.

**Connection diagram**



**Dimension drawing**

