

EY6LO00: Operating and indicating unit for I/O modules, modu600-LO

Features

- Part of the SAUTER modulo 6 system family
- Pluggable element for direct operation and visualisation of displays for the modu6** I/O modules
- Automatic detection of the current I/O module configuration
- Display of values and statuses of the inputs and outputs on an LCD colour display
- Detailed display of the individual inputs and outputs including labelling, type, status and graphics
- Simple 4-button operation
- LED indicator of I/O module modu6**-IO
- Local priority operation
- Ready for use without parameterising



EY6LO00F001

Technical data

Power supply

Power supply	From I/O module modu6**-IO
Current consumption	≤ 12.5 mA
Dissipated power	≤ 0,3 W

Ambient conditions

Operating temperature	0...45 °C
Storage and transport temperature	-25...60 °C
Ambient humidity	10...90% rh, no condensation

Indicators, display, operation

Resolution	240 × 240 pixels, colour LCD
Operation	Four buttons: Back/reject, Reverse/reduce, Forward/increase, Confirm

Interfaces and communication

Connection	4-pin, spring contacts
Protocol	Proprietary

Standards and directives

Type of protection	Connections: IP00 front, plugged in: IP30 (EN 60730-1)
Protection class	III
Environment class	3K3 (IEC 60721)

CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 50491-5-1, EN 50491-5-2, EN 50491-5-3
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Overview of types

Type	Features
EY6LO00F001	modu600-LO, operating and indicating unit for I/O modules

Manuals

Document number	Language	Title
D100386646	de	modu600-LO Bedienungsanleitung
D100397589	de	Systembeschreibung SAUTER modulo
D100408512	de	EY-modulo 6 – Best Practice I
D100408262	en	modu600-LO Operating instructions
D100402674	en	SAUTER modulo system description
D100410201	en	EY-modulo 6 – Best Practice I
D100408261	fr	modu600-LO Notice d'emploi
D100402676	fr	Description du système SAUTER modulo
D100410203	fr	EY-modulo 6 – Meilleures pratiques I



Description of operation

The modu600-LO operating device can be used to operate the modulo 6 I/O modules locally and to display their input and output signals. As required by DIN EN ISO 16484, the operating device offers independent local priority operation on the IO modules when the automation station is switched off or has failed. To do this, the IO modules must be supplied with 24 VDC via the modu601-LC supply module.

The module is hot-pluggable. It reads and accepts the configuration of the I/O module to which it is connected.

For each configured channel, the object description, signal type and object status are displayed. Digital inputs are represented graphically with a dot and digital outputs with a switch. Analogue inputs are represented with a progress bar (relative) and analogue outputs with a slider (relative).

The configuration of a channel is defined with CASE Engine and cannot be changed during operation. Output signals can be overridden. The override is stored and is not lost in the event of a power failure or restart if the operating device remains connected.

Overridden signals remain unchanged (overridden) when the modu600-LO is removed ¹⁾. After a restart or a power failure, the overridden state is restored.

No settings are transferred when the operating device is changed from one I/O module to another module. The settings are also not transferred when the change is made in a de-energised state.

If channels are not configured, it is possible to manually set the signal type and control the output signal on the operating device. However, this manual setting is not saved and is not retained in the event of a power failure or a restart.

Note



The modu600-LO supports the UTF-8 character set. Unknown characters such as Hebrew, Arabic and Asian characters are replaced by spaces. The supported characters are listed in the modu600-LO operating instructions.

Shared use with the modulo 6 app

The modulo 6 app is a smartphone application with which the inputs and outputs of the IO modules can be displayed and operated parallel to the modu600-LO. A Bluetooth® connection to the automation station is required for this. The local operating device does not have priority over the modulo 6 app. If the modu600-LO and the app are used simultaneously, the “last one wins” principle applies. The operating device can change or reset a signal overridden by the app and vice versa.

Intended use

The use of this product is only permitted in building automation in accordance with DIN EN ISO 16484. Other uses require the prior consent of the manufacturer.

The section “Description of operation” and all product instructions in this data sheet must be observed.

Modifying or converting the product is not permitted.

Improper use

The SAUTER modulo 6 system does not have functional safety and is not fail-safe. MTTF, MTBF and MTTR data is not available.

This product is not suitable:

- For safety functions
- As an emergency operating level according to the Machinery Directive 2006/42/EC.
A local emergency operation may have to be installed on the system side (EN ISO 13849-1 was not taken into account).
- In transportation equipment and storage facilities as per Regulation 37/2005
- As a measuring device as per EU Measuring Instruments Directive 2014/32/EU
- For use outside and in rooms with a risk of condensation

Engineering notes

Note



The modu600-LO may only be plugged in and operated by qualified personnel. Prevent access by laypersons.

¹⁾ This is a feature of modulo 6 firmware version 1.2.3 and higher

The I/O modules of the modulo 6 system family can be supplemented by the modu600-LO local operating unit. The modu600-LO enables the inputs and outputs in the I/O module to be visualised and operated.

The modu600-LO operating device can be installed or removed during operation (hot-pluggable) without affecting the functions of the automation station or the I/O modules. When removed during operation, the manual settings and overrides are not lost. Overridden output signals must be explicitly reset. Resetting is possible via the operating unit or via the modulo 6 app.

Note



Signal overrides set using a modu600-LO are not reset when the operating unit is removed. It is advisable to restrict access to the local operating level on site (including via mobile apps). Access security must be considered during the planning and risk assessment of the plant.

The modu600-LO operating device works without special commissioning or engineering. For this reason, a modu600-LO operating unit can also be used successively for different I/O modules.

NOTICE!



The modu600-LO local operating device must not be used as a maintenance or emergency stop switch for the system.

- ▶ Do not use the device for local emergency operation in dangerous situations.
- ▶ Switch off the system completely for maintenance work.

Note



With a separate power supply from the modu601-LC (separate I/O module supply module), operation is still possible via the local operating device if the automation station fails.

LED indicator of the modu600-LO

The LED indicator of the connected I/O device is transmitted unchanged to the LCD of the modu600-LO.

Status ²⁾	Indicator/display	Meaning
Continuous green		Module in operation
Continuous orange		Startup mode
Flashing orange		Configuration error
Rapid flashing orange		modu600-LO firmware update
Continuous red		Not configured
Flashing red		I/O bus communication error ³⁾ (iSEB)
Off→Green→Red		LED test sequence
Off		No power supply

Firmware update

Any available firmware updates of the modu600-LO are automatically initiated by the automation station after switching on. During the update, the screen remains black and the LED flashes rapidly orange.

Operation

The modu600-LO has four buttons (Back/reject, Reverse/reduce, Forward/increase, Confirm) and is based on an intuitive operating concept with a simple and intuitive navigation structure.

²⁾ LED flashing: 500 ms on, 500 ms off

LED flashing rapidly: 100 ms on, 100 ms off

LED test sequence: 1 second off > 1 second green > 1 second red

³⁾ The communication error display (flashing red) has priority, for example over the startup mode display (continuous orange)

Standard view

In the standard view of the LCD display, all inputs and outputs are shown graphically. After an input or output is selected, the channel designation and the current value appear in the middle of the display. Output values can be directly overridden here.

List view

A list view can be selected instead of the standard view. The list view shows all the I/O channels with the labelling defined in the project.

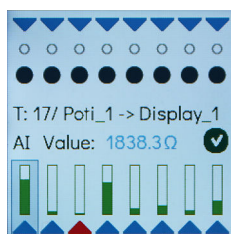
Detailed view

The detailed view provides additional information on a selected I/O channel. The designation, configuration and status details are displayed, as well as a graphic representation of the channel signal. The signal is displayed in real time as a graph in the detailed view for a period of five minutes.

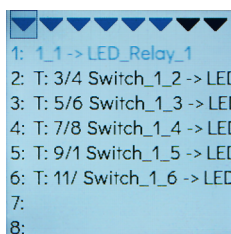
In this view, the outputs can be overridden manually or reset to automatic mode.

Info view

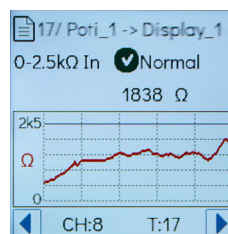
The info view shows the product information of the modu600-LO and the associated I/O module, for example the type, serial number, firmware version and production date.



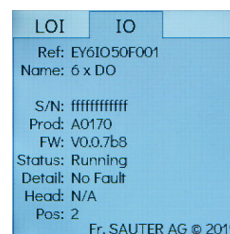
Standard view



List view



Detailed view



Info view

Button functions

Button	Function	Mode	Description
	Back	Navigation	Press key briefly: Back one level Hold key down: Info view or reset
	Backwards	Navigation	Press key: Back one position
		Value change	Press key briefly: One step smaller Hold key down: Multiple steps smaller
	Forwards	Navigation	Press key: One position forward
		Value change	Press key briefly: One step bigger Hold key down: Multiple steps bigger
	Confirm	Navigation	Press key briefly: Confirm selection Hold key down: List view or detailed view
		Value change	Press key: Confirm change

Detailed operating instructions can be found in the modu600 operating manual.

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.

Dimension drawing

All dimensions in mm.

