

EY6IO71: 8 x AO and 8 x DI/CI I/O module, modu671-IO

Features

- Part of the SAUTER modulo 6 system family
- Plug-in element for extending the modu660-AS and modu680-AS automation stations and modu6*2-LC link coupler
- Activation with a standard signal (0(2)...10 V) in operational systems, such as HVAC engineering
- Receiving digital inputs (alarm, status or pulse counter) in operational systems
- Eight digital inputs and eight analogue outputs
- Power supply from automation station (modu6**-AS), link coupler (modu6*2-LC) or supply module (modu601-LC)
- Can be equipped with a local operating and indicating unit (modu600-LO)



EY6IO71F001

Technical data

Power supply ¹⁾		
	Power supply	From AS or LC via I/O bus
	Power consumption	≤ 1 W
	Dissipated power	≤ 0,8 W
Ambient conditions		
	Operating temperature	0...45 °C
	Storage and transport temperature	-25...70 °C
	Admissible ambient humidity	10...90% rh, no condensation
Inputs/outputs		
Digital inputs (DI/CI)	Number of inputs	8
	Power supply for DI	Internal, ~13 V=
	Pulse counter ²⁾	≤ 50 Hz
Analogue outputs (AO)	Number of outputs	8
	Analogue	0(2)...10 V
	Load	≤ 2 mA
Interfaces and communication		
	Connection, LOI	4-pin
	Connection, I/O bus	7-pin, spring contact
	Connection terminals	4 x 8-pin spring-loaded plug-in connectors
	Earth connector	Spring contact against DIN rail
Construction		
	Fitting	On metallic DIN rail 35 x 7.5/15 as per EN 60715
	Dimensions W x H x D	55.7 (3 HP) x 100 x 59 mm
	Weight	130 g
Standards and directives		
	Protection type (as per EN 60730)	Connections and terminals:IP00 Front in DIN cut-out:IP30
	Protection class	I (EN 60730-1)
	Environment class	3K3 (IEC 60721)
	Software class ³⁾	A (EN 60730-1, Appendix H)
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

¹⁾ Measured values without accessories

²⁾ 50 Hz only with PC module, otherwise 5 Hz

³⁾ The product is not suitable for safety functions



Overview of types

Type	Features
EY6IO71F001	8 x AO and 8 x DI/CI I/O module

Accessories

Type	Description
EY6LO00F001	Local operating and indicating unit for I/O modules

Manuals

Document number	Language	Title
D100397589	de	Systembeschreibung SAUTER modulo
D100408512	de	EY-modulo 6 – Best Practice I
D100402674	en	SAUTER modulo system description
D100410201	en	EY-modulo 6 – Best Practice I
D100402676	fr	Description du système SAUTER modulo
D100410203	fr	EY-modulo 6 – Meilleures pratiques I

Description of operation

The modu671-IO is an I/O module for extending the modu660-AS and modu680-AS automation stations and the modu612-LC link coupler.

The modu671-IO serves the following purposes in operational plants (e.g. in HVAC):

- Activation via standard signal (0(2)...10 V)
- Acquisition of digital status and alarm inputs
- Acquisition of digital counter pulses

The module provides eight analogue outputs and eight digital inputs.

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.

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
- in transportation means and storage facilities as per Directive 37/2005
- as a measuring device as per EU Measuring Instruments Directive 2014/32/EU
- for use outside and in rooms with the risk of condensation

Fitting notes

Note

Only qualified electricians are permitted to fit and connect the module. Prevent laypersons from accessing it.

The modu671-IO is a module that is connected frontally on the DIN rail. It is not necessary to slide it in from the side. The connection between the modules is made via spring contacts on the side. The modules must be pushed together on the DIN rail in such a way that the spring contacts ensure that the signal cable is connected to the I/O bus system.

The spring contacts of the last module on the right side must be covered by the bus cover provided with the automation station (AS).

All external power supplies must have safe, undamaged insulation.



Note

The ground terminal must not be earthed.

For examples and procedures for problem-free installation and wiring, see the manual “EY-modulo 6 – Best Practice I”

Assignment to the automation station (AS)

The type and position of the I/O module in the system are defined using CASE Suite. This information is stored permanently in the AS.

If the configuration with CASE Suite does not match the physical arrangement of the module, this is indicated by the system LED of the module.

LED indicators

The I/O module is equipped with a system LED. The various operating statuses are displayed as follows:

Status	Description
Continuous green	Normal operation
Continuous red	Not configured
Flashing red	I/O bus communication error
Continuous orange	Startup mode
Flashing orange	Configuration error
Off→Green→Red	LED test run
Off	No power supply

Digital inputs (DI/CI)

Number of inputs	8
Type of inputs	Potential-free contacts, connected to ground Opto-coupler Transistor (open collector)
Pulse counter ⁴⁾	≤ 50 Hz
Pulse status	> 4 ms
Protection against external voltage	± 30 V= / 24 V~
Output current	≤ 1.5 mA
Refresh rate	60 ms

Pulse counters (CI with DI)

At the digital inputs, signals of potential-free contacts, opto-couplers or transistors with an open collector can be connected. The maximum pulse frequency may be 50 Hz.

The de-bounce time can be configured so that switching contacts are correctly detected (CASE Suite: filter setting) (0...100 ms). Pulses can be captured on the falling or rising edge, or on both edges. The minimum pulse duration should be 4 times the de-bounce time.

Analogue outputs (AO)

Number of outputs	8
Type of outputs	Analogue outputs 0(2)...10 V= < 2 mA (source) per output Return cable connected to ground
Time constant	30 ms
Refresh rate	60 ms
Resolution	2 mV

The output voltage is taken from between an output terminal (a8...a15) and the related ground terminal.

The outputs are designed as push-pull outputs with active sink capability (> 1 V).

Every output can be subjected to a load of 2 mA.

A standard or default value can be defined in CASE Engine. This value applies if the module is supplied with power but the station is out of operation.

⁴⁾ 50 Hz only with PC module, otherwise 5 Hz

**CAUTION!**

The analogue outputs (AO) are not protected against applied DC or AC voltage. However, there is protection against short circuits.

Technical specification of the inputs and outputs**Digital input (DI/CI)**

Binary input	Switching threshold high "0"	Switching threshold low "1"	Switching hysteresis	Pulse counter
Digital input (DI) ⁵⁾	4 V	1 V	0.4 V	≤ 50 Hz ⁶⁾

Analogue output (AO)

Range of adjustment	Resolution	Accuracy
0(2)...10.5 V	2 mV	± 0.02 V

Channel and terminal assignment**Digital input for pulse counter (CI)**

Channel	Schematic	Terminals	
		Signal	GND
0	d0	2	1
1	d1	4	3
2	d2	6	5
3	d3	8	7
4	d4	10	9
5	d5	12	11
6	d6	14	13
7	d7	16	15

Analogue output (0...10 V)

Channel	Schematic	Terminals	
		Signal	GND
8	a8	17	18
9	a9	19	20
10	a10	21	22
11	a11	23	24
12	a12	25	26
13	a13	27	28
14	a14	29	30
15	a15	31	32

Connection of the local operating and indicating unit (LOI)

The modu600-LO LOI can be added to the modu671-IO. The LOI enables the display and direct control of the positioning signals and display of the inputs.

**Note**

The modu600-LO does not store any override values. When the unit is removed, all outputs are operated with the automatic values of the AS or the I/O module. When an indicating unit is inserted, the signals remain unchanged.

For more information on the control function and display, see product data sheet 91.141 for the modu600-LO.

LOIs allow limited operation of plant components without the intervention of the AS intended for the application. Outputs of the I/O modules in manual operation may change the value briefly when the user program is downloading. The LOI can be used to actuate the analogue outputs in the AS directly even without a user application (CASE Engine).

⁵⁾ Between 1 and 4 V the switching transitions are not defined.

⁶⁾ 50 Hz only with PC module, otherwise 5 Hz

With the modu601-LC module for separate I/O module supply, the I/O modules can be supplied independently of the station, so that the signals can continue to be displayed and controlled in the event of the absence, failure or soft reboot of the station.

Note



The modu600-LO LOI is not suitable to be used as an emergency operating device as per Machine Directive 2006/42/EU.

Standard EN ISO 13849-1 has not been considered. If applicable, a local emergency operating device must be installed on the plant side.

Access security

CAUTION!



Priority operating units can lose their priority function.

- ▶ Limit the access to the local operating level (incl. via apps) on site.
- ▶ Consider the access security during the planning and risk assessment of the plant.

Labelling concept

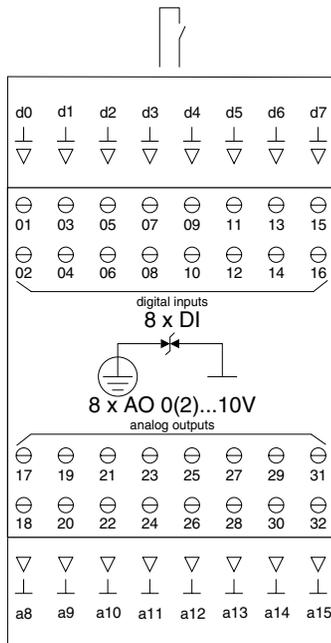
The LED display of the modu600-LO shows the individual channels as configured with CASE Suite.

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

All dimensions in millimetres.

