

Product and Applications Description

The universal I/O module is a N-system DIN-rail mounted device. Besides the contacting system for the data-rail it provides an EIB connection block for the connection to the bus. The module requires a 24V direct or alternating current external voltage supply (6EP1 331-1SH02 LOGO!Power). Two Universal in-/outputs are available, allowing to use each terminal as binary or analog in- or output, thus causing the existence of 4 operating modes for each universal input/output fundamentally different from each other:

- binary input
- binary output
- analog input
- analog output

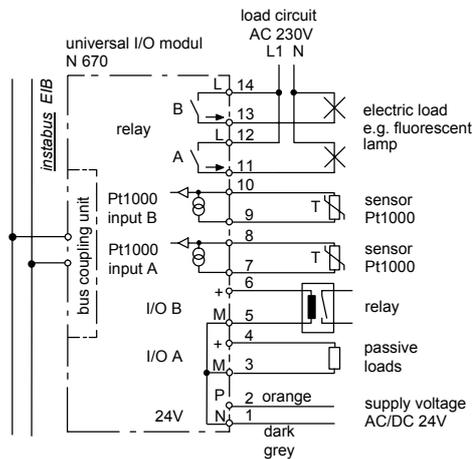
2 inputs for Pt1000 two-wire operated sensors are available for temperature measuring. Furthermore 2 performance relays with the appropriate switching- and force guidance objects are available.

Additional Informations

<http://www.siemens.de/gamma>

Note: If the application program is not loaded completely by the ETS, you had better interrupt the 24 V voltage supply of the I/O-module during the loading interval.

Example of Operation



Technical Specifications

Power supply

- bus voltage: via bus line
- external module supply 24 V AC/DC $\pm 10\%$, max. 100 mA (depending on the load) DC reverse voltage protection available

WARNING

The bus voltage mustn't be used for the 24 V supply of the module. The external 24 V module supply must be equipped with a basic insulation for 250 V. The connection block "N" of the external module supply is connected with the mass connection blocks "M" of the Universal terminals. If a number of modules are fed by alternating current from a single transformer take care that the phases of the connection blocks 1 and 2 are equally connected if in- outputs or Pt1000 sensors of different modules are galvanically connected.

In-/ Outputs

- universal in-/outputs
 - number: 2
- binary respectively analog input
 - min. input voltage: 0V
 - max. input voltage: 10 V
 - input resistance: 25 k Ω

WARNING

Take care that the terminals are polarised correctly. The input voltage range must not be exceeded!

- binary respectively analog output
 - for passive loads and relays
 - min. output voltage 0 V
 - max. output voltage: 10V
 - accuracy: $\pm 50\text{mV}$, resolution approx. 15 mV
 - permanent output current: max. 10 mA
 - limited short-circuit strength
- Pt1000 inputs
 - number: 2
 - temperature range: $-25\dots+45^\circ$
 - accuracy: $\pm 0,5\text{ K}$
 - resolution: 0,1 K

Relay outputs

- number: 2 outputs (volt-free contacts)
- rated voltage: AC 230 V, 47...63 Hz
- rated current: 10 A resistive load
- switching current at AC 230 V: 0.01...10 A resistive load
- switching current at DC 24 V: 10 A resistive load 4 A inductive load (L/R = 7 ms)
- switching characteristic: set in parameter list according to application program

Switching power at AC 230 V

- at incandescent lamp load: max. 1000 W
- at fluorescent lamp (FL) load:
 - uncorrected FL, $\cos \phi 0,5$: max. 500 VA
 - parallel corrected FL, $\cos \phi 1$ (at Ctot $\leq 14\ \mu\text{F}$): 2 x 58 W or 3 x 36 W or 6 x 18 W
 - twin-lamp circuit, $\cos \phi 1$: max. 1000 W
 - OSRAM ECG for 58 W FL: max. 10 units
 - OSRAM ECG for 36 W FL: max. 15 units
 - OSRAM ECG for 18 W FL: max. 15 units

WARNING

If 230 V-loads are connected the terminal blocks 12 and 14 have to be connected to the same phase.

Connections

- load circuit and external power supply (connection block 1 and 2, 11-14), physical: strip insulation for 9...10 mm permissible conductor types/cross sections:
 - 0,5 ... 2,5 mm² single core or flexible conductor, 8 mm ultrasonically compacted
 - 0,5 ... 2,5 mm² flexible conductor with terminal pin, crimped on gas tight
 - 0,5 ... 1,5 mm² flexible conductor with connector sleeve
 - 1,0 and 1,5 mm² plain flexible conductor
- Universal in- / output and PT1000-inputs (connection blocks 3 – 10) strip insulation for 9...10 mm permissible conductor types/cross sections:
 - 0,5 ... 1,5 mm² single core
 - 0,5 ... 1,5 mm² flexible conductor with terminal pin, crimped on gas tight
 - 0,5 ... 1,5 mm² flexible conductor with connector sleeve
 - 1,0 and 1,5 mm² plain flexible conductor
- load circuit, electrical:
 - plain flexible conductor, min. 1 mm²: current carrying capacity max. 6 A
 - all other conductors, min. 1,5 mm²: current carrying capacity max. 10 A
 - The load circuits must be protected with a 10 A miniature circuit breaker A or B characteristic

WARNING

When looping through the L-conductor (connection blocks 12 and 14), take care that the maximum connection current of 10 A (as governed by the maximum permissible printed conductor load) is not exceeded!

- Bus line
 - pressure contacts on data rail
 - screwless bus connection block 0,6...0,8 mm single core
 - remove approx. 5mm of isolation

Physical specifications

- N-system DIN-rail mounted device, width 4 SUs
- weight: approx. 160 g

Electrical safety

- protection (according to EN 60529): IP 20

Environmental specifications

- ambient temperature operating: $-5\dots+45^\circ\text{C}$
- ambient temperature non-op.: $-25\dots+70^\circ\text{C}$
- relative humidity (non-condensing): 5 % to 93 %

Location and Function of the Display and Operator Elements

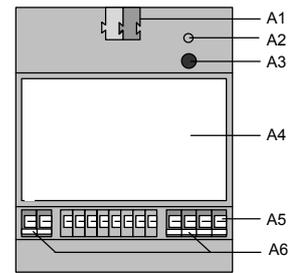


Figure 1: Location of the display and operator elements

- A1 bus connection block screwless
- A2 LED for indicating normal operating mode (LED off) and addressing mode (LED on); upon receiving the physical address the device automatically returns to normal operating mode
- A3 Learning button for switching between normal operating mode and addressing mode for receiving the physical address
- A4 Type plate
- A5 Screwless plug-in terminals for connecting load circuits
- A6 Test sockets for observing the voltage

Mounting and Wiring

- The device may be used for permanent interior installations in dry locations within distribution boards or small casings with DIN rail EN 60715-TH35-7,5.

WARNING

- The device may be built into distribution boards (230/400 V) together with appropriate VDE-devices.
- The device must be mounted and commissioned by an authorised electrician.
- A safety disconnection of the device must be possible. Especially if the device is connected to different phases.
- Free DIN rail areas must be covered with covers, order no. 5WG1 192-8AA01.
- The prevailing safety rules must be heeded.
- The device must not be opened.
- For planning and construction of electric installations, the relevant guidelines, regulations and standards of the respective country are to be considered

If the connection is established via bus connection blocks (data-rail not installed) the contacting system towards the data-rail has to be covered by removing the guide top e.g. with a screw-driver and afterwards snapping on the insulation top to ensure a sufficient insulation towards the DIN-rail.

For mounting the I/O modules (and all other DIN rail devices) the usually employed adapter is not necessary. The bus voltage is forwarded from the bus connection block to the data rail.

Removing the guide top (figure 2)

- The guide top (D3) encloses the contacting system (D2) on the back side of the universal module N 670 (D1)
- Insert the screw-driver between the DIN-rail mounted device (D1) and the guide top (D3) and pull out the guide top.

Snapping on the insulation top (figure 2)

- Stick the insulation top (D4) onto the contacting system and snap it on by pressing.

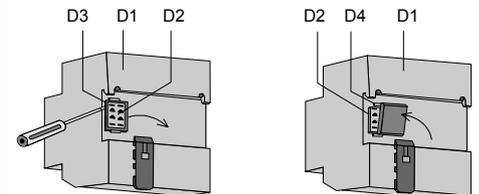


Figure 2: covering the contacting system

General Notes

- Any faulty devices should be returned to the local Siemens office.
- If you have further questions about the product, please contact our Technical Support:

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