

DESIGO™ I/O modules

## Positioning modules

**PTM1.2Y10S**  
**PTM1.4Y10S**  
**PTM1.2Y10S-M**

with DC 0...10V output signals, and storage of positioning value

**Signal converters for connection to P-bus, with independent outputs delivering continuous DC 0...10 V positioning signals and storage of positioning values if transmission is faulty. Three versions:**

- double module
- quadruple module
- double module with manual operation

### Use

For use with equipment that is controlled by DC 0...10 V signals or that is able to handle such signals, for example:

- air damper or valve actuators
- modulating/three-position converters
- analog indication and recording instruments
- interfacing with other systems using the DC 10 V signal, especially for the transmission of:
  - set values
  - sensor values
  - compensating variables

## Functions

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- Conversion of digital P-bus signals delivered by the automation station to continuous DC 0...10 V positioning signals for the plant.
- The output signals are indicated by signal lamps. The higher the output voltage, the brighter the light.
- Manual operation with positioning module PTM1.2Y10S-M:
  - AUTOMATIC: the positioning signal is delivered by the automation station
  - MANUAL: the DC 0...10 V signal assumes the value set at the setting unit

### Behaviour in the event of fault

- Storage of positioning value:  
if data transmission is faulty, that is, when there is no correct P-bus telegram from the automation station within 4 seconds, the following statuses can be preselected via the automation station:
  - the output will change to 0, even if no preselection has been made (basic value)
  - the output will assume a preselected value of between 0 and 10 V
  - the output will maintain the value transmitted last
- In the event the AC 24 V operating voltage at the I/O compact unit fails, the output signal will always change to 0. When power is restored, the signal will stay at 0 until the next valid telegram transmits some other value.

### Note

When using the positioning modules together with the earlier process units PRV1 and PRU1, the positioning output will always change to 0 should transmission be faulty.

## Type summary

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Positioning module with two outputs	<b>PTM1.2Y10S</b>
Positioning module with four outputs	<b>PTM1.4Y10S</b>
Positioning module with two outputs and manual operation	<b>PTM1.2Y10S-M</b>

### Delivery

Base and electronic module are delivered together but in separate boxes that are attached to one another.

### Accessories

General accessories for the I/O modules must be ordered separately. For details, refer to data sheet N8105.

## Equipment combinations

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### Automation stations

Basically, the I/O modules can be connected to any automation station with P-bus if the automation station supports the I/O functions on the software side. Refer to document Z8102, "I/O module system"

### Field units

Any units of the Landis & Staefa product ranges can be connected if their signals are compatible with the module's inputs and outputs. It is also possible to use products of other manufacture if their signals are compatible and if they satisfy the relevant safety requirements.

## Technical design

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### Switch-on behaviour

After power is supplied to the module (BEZ = reference voltage via P-bus line DC +24 V, and G = system potential AC 24 V), the following statuses will be attained:

- after 0.5 seconds, the I/O functions will be ready to receive a telegram
- after receive ready, the analog outputs will be stable

### Short-circuit protection

The DC 0...10 V positioning outputs are short-circuit-proof.

**Note**

The whole functionality of the I/O module comprises the module itself (hardware) and handling of the signals in the automation station (software). For a full understanding of the scope of module functions, the relevant process sequences and possible choices available when configuring the user program must be taken into consideration.

For the technical features common to all I/O modules, refer to document Z8102, "I/O module system".

**Mechanical design**

Modular unit with plastic casing, consisting of terminal base and electronic module, which are plugged onto the I/O bar. The signals and voltages are picked up from contacts on the I/O bar.

The connecting terminals of the I/O modules arranged on the I/O bar are used in place of the block terminals for external wiring usually found in the control panel. They comply with the relevant standards and regulations and provide the test terminal function. Also, they can be fitted with plant-specific labels.

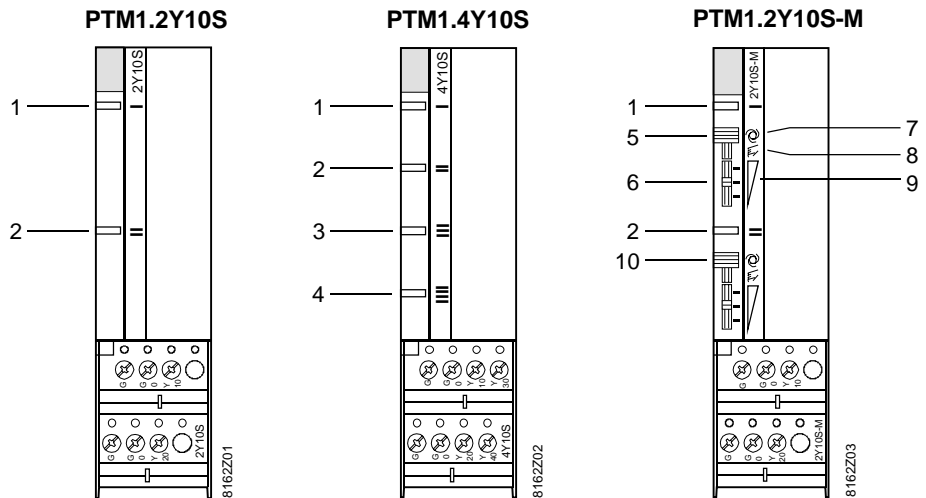
Transparent module front for insertion of the plant-specific module labels. The specifically prepared and perforated labels are marked with the help of the engineering tool for the building automation and control system. The space for the address plug and the signal lamps are also on the front of the module. The module front of the PTM1.2Y10S-M also carries the elements for manual operation.

All I/O modules use the same accessories which are shown on data sheet 8105.

**Note**

For a more detailed description of the module's mechanical design, refer to document Z8102, "I/O module system".

**Front views**



- 1...4 Signal lamps for positioning outputs I...III
- 5 AUTOMATIC / MANUAL slide switch for positioning output I
- 6 Manual setting unit for DC 0...10 V output signal
- 7 Slide switch position AUTOMATIC
- 8 Slide switch position MANUAL
- 9 Symbol for DC 0...10 V working range
- 10 AUTOMATIC / MANUAL slide switch for positioning output II (the other elements are the same as those for positioning output I)

## Engineering notes



The document Z8102, "I/O module system", contains system-related engineering know-how. It should be studied before reading the following sections while paying special attention to the information relating to safety.

### Correct use

Within the overall system, these I/O modules must always be used on applications as described in document Z8102, "I/O module system". The module-specific characteristics and features given in the brief description on the front page and in the chapters "Use", "Engineering notes" and "Technical data" of the present data sheet must also be taken into consideration.



The sections of this chapter identified by a warning triangle contain additional requirements and restrictions relevant to safety. They must be observed to ensure the safety of persons and objects.



### Field units

The units and systems connected must satisfy the requirements for **safety extra-low voltage** (SELV) or **protection by extra-low voltage** (PELV) as per HD 384.



### Positioning outputs

The positioning outputs are **not galvanically separated** from the system's electronics.



### Manual switch

The module's manual switch function must never be used for safety shutdown.

### Wiring of G0 at the PTM1.4Y10S module

To avoid inadmissible voltage drops over G0, the G0 wires for the outputs Y30 and Y40 must only be connected to the module's G0 terminals (right beside Y10 or Y20, refer to "connection diagrams").

## Fitting notes

Please refer to document M8102, "I/O modules and P-bus".

Instructions for fitting the I/O module on mounting rails and on the I/O bar are printed on the packing.

## Commissioning notes

Please refer to document Z8102, "I/O module system".

## Technical data

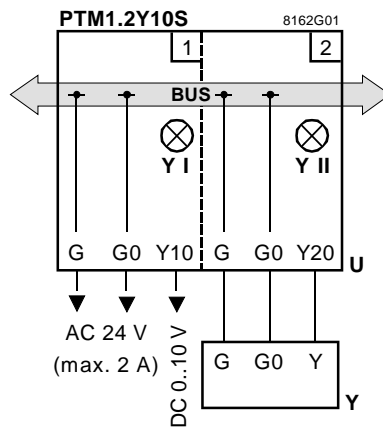
Power supply	Operating voltage	AC 24 V ± 20 %
	Safety extra low voltage (SELV) or protection by extra-low voltage "PELV" as per	HD 384
Frequency	50 Hz or 60 Hz	
	Power consumption	3 VA
	I/O module power supply via P-bus Load units	DC 24 V (against G0) 1 (12.5 mA each)
Output signal	Voltage	DC 0...10 V
	Current	1 mA max.
	Overrange	DC 10.66 V
	Resolution	10.4 mV
Line lengths	Perm. line lengths	300 m max.
	Min. wire dia.	0.6 mm
CE conformity	In compliance with EU directives Electromagnetic compatibility	89/336/EWG

### Note

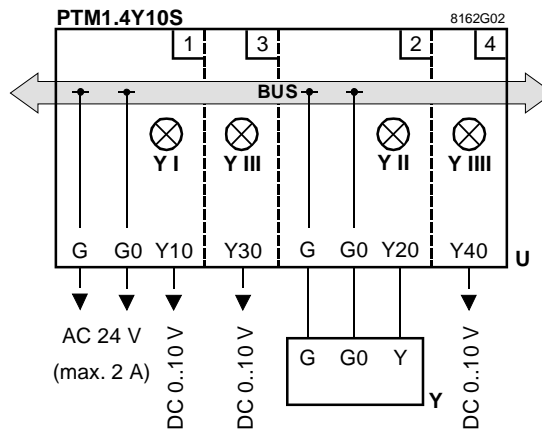
For technical data common to all I/O modules, refer to document Z8102, "I/O module system", and for dimensions refer to document M8102, "I/O modules and P-bus".

## Connection diagrams

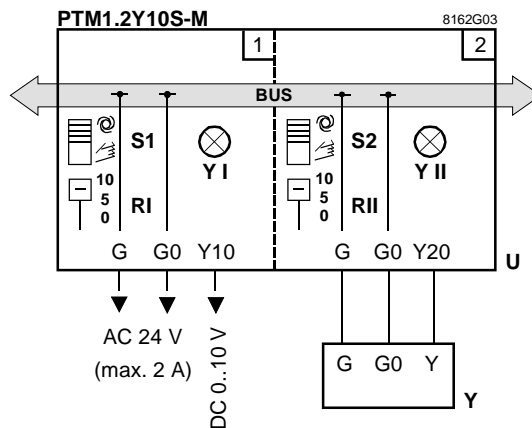
Double positioning module



Quadruple positioning module



Double positioning module with manual operation



- U** Positioning module
- Y** Actuator with DC 0...10 V control input
- BUS** I/O bar
- G** Operating voltage AC 24 V for actuators (2 A max.)
- G0** System neutral of operating voltage
- Y10...Y40** Positioning signals DC 0...10 V

