DESIGO™ I/O modules

**Measured value module**

PTM1.2U10

for continuous DC 0...10 V input signals

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**Use**

The measured value module is used to acquire DC 0...10 V measuring signals. In the HVAC field, this type of signal is delivered by the following units:

- active Siemens sensors, such as humidity, pressure, differential pressure and frost protection sensors
- actuators that give position signals
- measuring converters of other manufacture
- shift controllers and setting units

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**Functions**

- Measured value conversion of analog DC 0...10 V measuring signals from the plant to digital P-bus signals for handling by the automation station.
- Identification of interruptions at sensors.
**Type summary**

| Measured value module | PTM1.2U10 |

**Delivery**

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

**Accessories**

For general accessories that are used in connection with the I/O modules, refer to data sheet N8105. Such accessories must be ordered separately.

**Equipment combinations**

**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 Siemens 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**

**Notes**

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 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 the external wiring usually installed 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 is also on the front of the module.

All I/O modules use the same accessories, which are shown on data sheet N8105.

**Note**

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

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 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.

The insulation resistance of the connected measuring sensors must comply with the requirements for safety-extra-low voltage (SELV) or protection by extra-low voltage (PELV) as per HD 384.

The measured value inputs are not galvanically separated from the system’s electronics.

Line lengths exceeding 300 m at the measured value input are permitted, but shielded cable will be required to reduce humming.

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.

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: 0.1 VA plus sensor current with active sensors
- I/O module power supply: DC 24 V (against G0)
- Load units: 1 (12.5 mA each)

Measured value inputs
- Input signal: DC 0...10 V
- Overrange: ±11.30 V
- Underrange: ±1.30 V
- Input current: 0.1 mA max.
- Resolution: 3.125 mV = 0.3 ‰
- Permissible input voltage: DC ±20 V max.

Line lengths
- For permissible line lengths and cross-sectional areas, refer to document Z8102, "I/O module system"
- Min. dia. of wire: 0.6 mm
- 300 m max.

CE conformance
- In compliance with the directives of the European Union
- Electromagnetic compatibility: 89/336/EEC

Conformance
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- Electromagnetic compatibility: 89/336/EEC

Connection diagram

U Measured value module PTM1.2U10
B Measuring sensor with active DC 0...10 V measuring signal
BUS I/O bar with P-bus
G AC 24 V supply for sensor
M Measuring neutral
U1, U2 Measured value