

# Z-PID

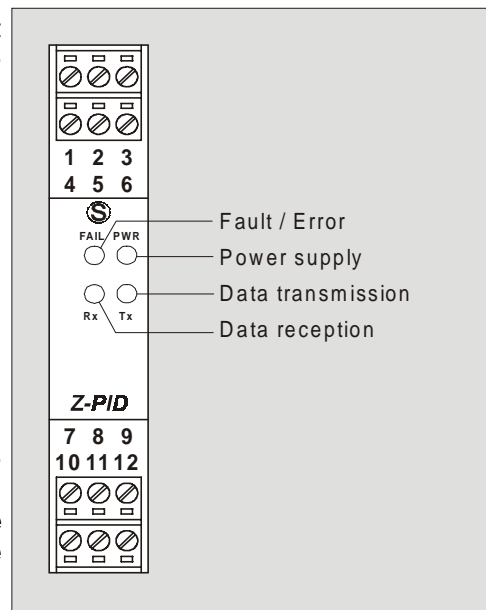
## ANALOGUE IN-OUT MODULE WITH PID REGULATOR / RS485

Used for interfacing transducers and instruments with different analogue signal standards to all of the control systems which are able to communicate with the transmission protocol MODBUS RTU through the RS485 serial interface.

The universal input stage allows for the following signals to be accepted:

- Thermocouple J, K, R, S, T, E, B and N
- Thermo-resistance Ni100 - PT100 3 / 4 wire
- Signal in ohm (potentiometer)
- Signal in current : up to 20 Ma
- Signal in voltage : up to 10 V

This module comprises of a 0/4..20 mA analogue output for the controlling of the regulation duplex cable by means of the PID regulator which is integrated with the instrument. **The excludability of the PID control allows for the module to be used as a combination of an input and output analogue which are independent form each other.**



The wiring of the power supply and serial bus is facilitated by the use of a support bus that can be lodged within the DIN guide. Such a system also allows for hot swapping, that is, the insertion and extraction of the module from the bus without the interruption of the communication nor the power supply to the remaining part of the system.

Frontal signalling LEDs for: presence of power supply, setting error, out-of-scale and faulty sensor,

### TECHNICAL DATA

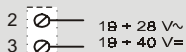
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- Power supply : 19 - 40 Vcc / 19 - 28 Vca - 50/60 Hz, power consumption max. 2,5W
- Input galvanised separation ( the remaining circuits are at low voltage ): 1500 Vac
- Interface : serial RS485 2 wire with settable velocity : 4800, 9600, 19200, 38400, 57600 baud
- Communication protocol : MODBUS RTU
- Communication time : < 20 ms (@ 38400 baud)
- Connection distance : up to 1200 m
- Sampling time : 300 ms
- Multi-scale universal input :

Thermocouple	Thermal resistance	Potentiometer	Voltage (bipolar)	Current (bipolar)
J : -200 / +1000 °C K : -200 / +1300 °C R : -50 / +1750 °C S : -50 / +1750 °C T : -200 / + 400 °C E : -150 / +800 °C B : 0 / +1800 °C N : -200 / +1300 °C	Pt100: -200 / +650 °C  Ni100: -60 / +180 °C	0 / 3,5 kOhm  0 / 8 kOhm  0 / 15 kOhm	0 / 50 mV  0 / 200 mV  0 / 2 V  0 / 5 V  0 / 10 V	0 / 20 mA

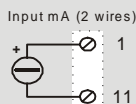
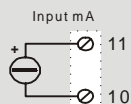
- Input resolution : 0,1 °C for thermocouple and thermal resistance, 10000 points for resistance, 10000 bipolar points for current and voltage
- Input impedance :100 ohm for current input, 1 Mohm for voltage input
- Precision :look at manual instruction
- Voltage input protection : 60 V continuous
- Out : 0/4..20mA non isolated from the input circuit with identification of interrupted or faulty duplex cable
- Output resolution : 4000 / 3200 points
- Transducer power supply : min. 18Vdc 20mA
- For further information make reference to page 2.

**POWER SUPPLY**

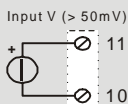


Power voltage must be in a range from 19 to 40 Vdc (indifferent polarity), from 19 to 28 Vac. **Upper limits must be exceeded, if it happen there could be damage for module.** It is necessary to protect power source from possible module's failure by fuse correctly dimensioned.

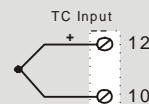
**CURRENT INPUT**



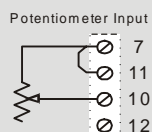
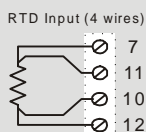
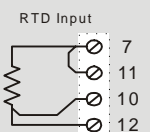
**VOLTAGE TENSION**



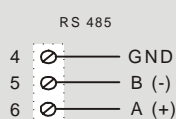
**THERMOCOUPLE INPUT**



**RTD / POTENZIOMETER INPUT**



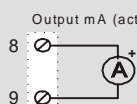
**SERIAL INTERFACE**



**BUS SUPPORT DIN TYPE**

The connection, for serial interface and feed of the module, is also situated on the connector on the instrument bottom. This connector allows the connectin by bus through the support that must be installed in the DIN guide.

**CURRENT OUTPUT**

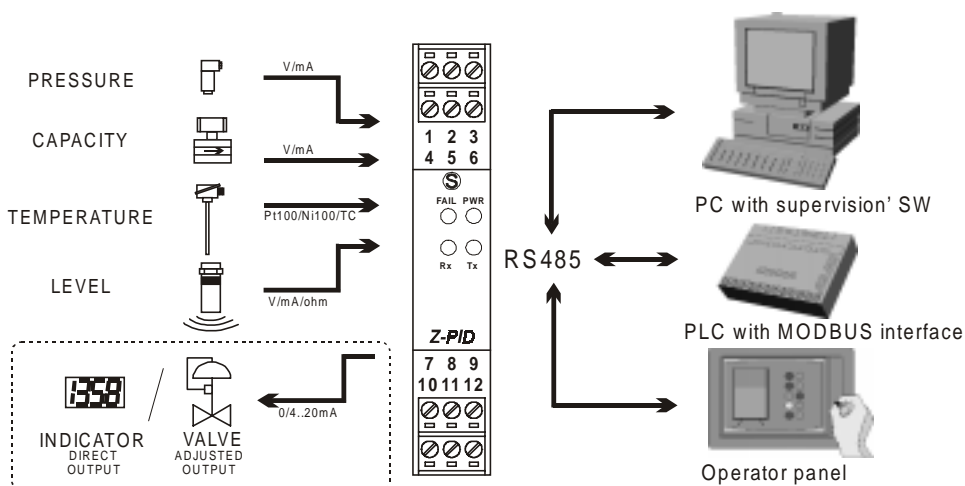


**PROGRAMMING**

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All of the settings of the module, such as the type of input, setting of the digital filters, velocity of the serial interface, address of the module, etc. can be configured by means of the appropriate Z-PROG software.

**EXAMPLES**



TR AUTOMATYKA Sp. z o.o.

ul. Lechicka 14  
02-156 Warszawa  
email: biuro@trautomatyka.pl

tel.: +48 22 886 10 16  
fax: +48 22 846 50 37