PT1000 Module

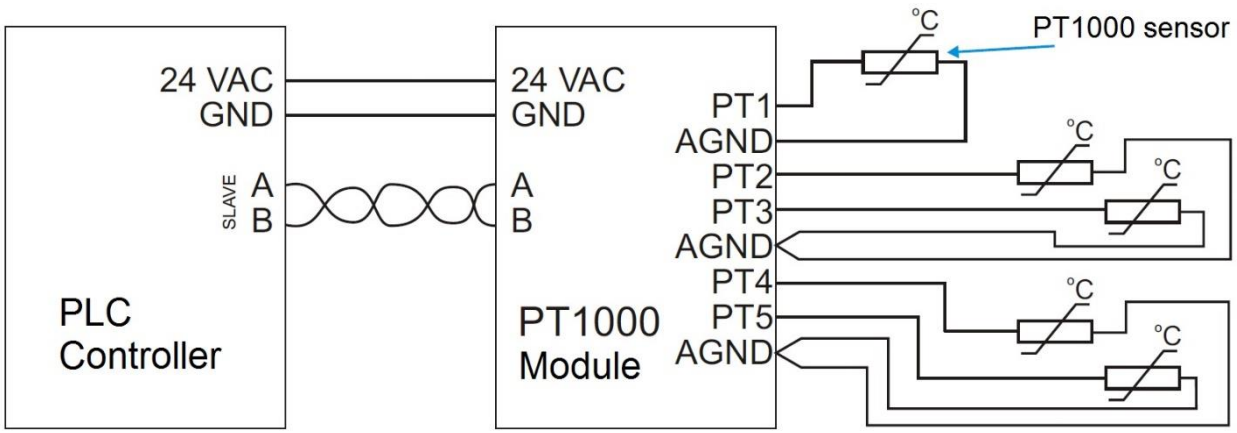
1. Technical data

- Dimensions: 35 x 108 x 59mm
- Mounting: TS35 rail
- Power supply: 24 V AC
- Inputs: - PT1000: 5 pcs
- Current source: 1 mA
- Measuring range: -50..130 °C
- Resolution of measurement: 0,2 °C
- Communication: RS-485 Modbus RTU
- Operating temperature: -20..50 °C

2. Description

Extension module for connecting five additional PT1000 temperature sensors to the PLC controller.

3. Scheme

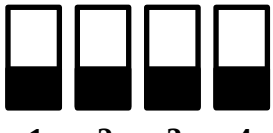
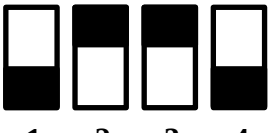
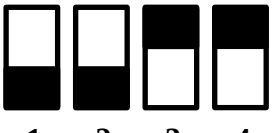
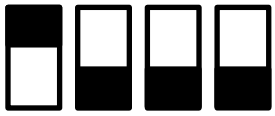
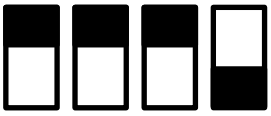
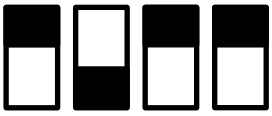
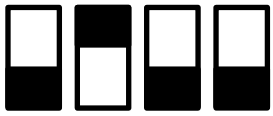
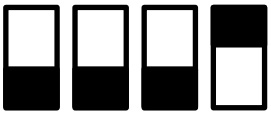
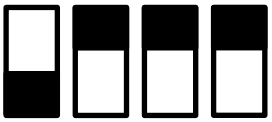
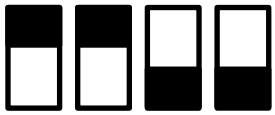
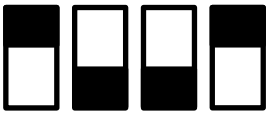
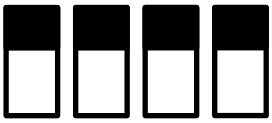
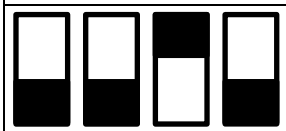
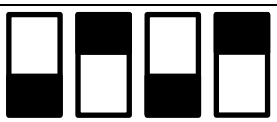
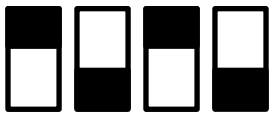
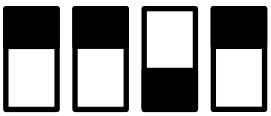


4. Terminals

24 VAC – power supply 24 VAC
GND – power supply ground
A, B – RS-485 communication lines
PT1-PT5 – sensors inputs
AGND – sensors ground

5. Operation and configuration

Modbus communication address is determined using a 4-section switch located on the underside of the module. Jumpers allow you to set the address in the range of 16 - 32 according to table:

Setting	Address	Setting	Address	Setting	Address
	16		22		28
	17		23		29
	18		24		30
	19		25		31
	20		26		
	21		27		

Settings of the serial communication RS-485:

Speed	9600 bps
Parity bit	none
Stop bit	2

To read the status of the PT1000 inputs use command 0x03 (Read Holding Registers).

Map of the Modbus registers:

Address	Description	Format
0x0000	Reading input PT1	Constant positional. Eight the youngest bits are the fractional part, the next seven bits are integer part, one sign bit. Example: The registry value 0x15C9 should be interpreted as 0x15 degrees and 0xC9 / 0x100 fractional part, decimal 21 and 201/256 = 21,7852 °
0x0001	Reading input PT2	as described above
0x0002	Reading input PT3	as described above
0x0003	Reading input PT4	as described above
0x0004	Reading input PT5	as described above
0x1000	Reading input PT1	To tenths of a degree (x10). Example: The registry value 0x00DB = 219 should be interpreted as 21,9 °C
0x1001	Reading input PT2	as described above
0x1002	Reading input PT3	as described above
0x1003	Reading input PT4	as described above
0x1004	Reading input PT5	as described above
0x2000	Reading input PT1	To hundredths of a degree (x100). Example: The registry value 0x0893 = 2195 should be interpreted as 21,95 °C
0x2001	Reading input PT2	as described above
0x2002	Reading input PT3	as described above
0x2003	Reading input PT4	as described above
0x2004	Reading input PT5	as described above

When the sensor is not connected to the input, value of the register containing the status of the input will be read as the minimum possible value of 0x8000 = -32768.