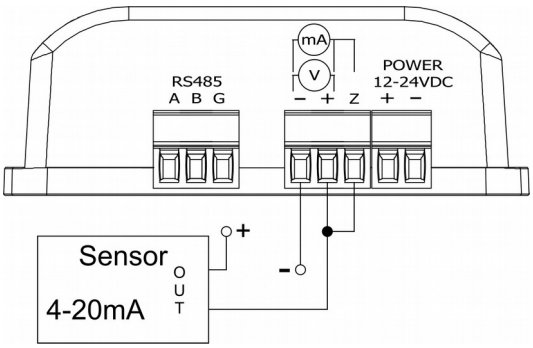
Analog input converter

LAN/RS485

NANO Analog Input POE

Current output sensor (0-20mA or 4-20mA)



5 Module construction

5.1 General features

The general view of the Nano Analog PoE module is shown below.

General appearance of the module

The module supports the following types of sensors:
- sensors with voltage output 0-5V
- sensors with voltage output 0-10V
- sensors with current output 4-20mA
- sensors with current output 0-20mA.

The user can configure the method of transformation the measured value by using the function of conversion of the measured value (mathematical function), setting the range of the sensor and unit selection.

Communication with the module is done via LAN and RS485 (Modbus RTU)

The following communication options are available:

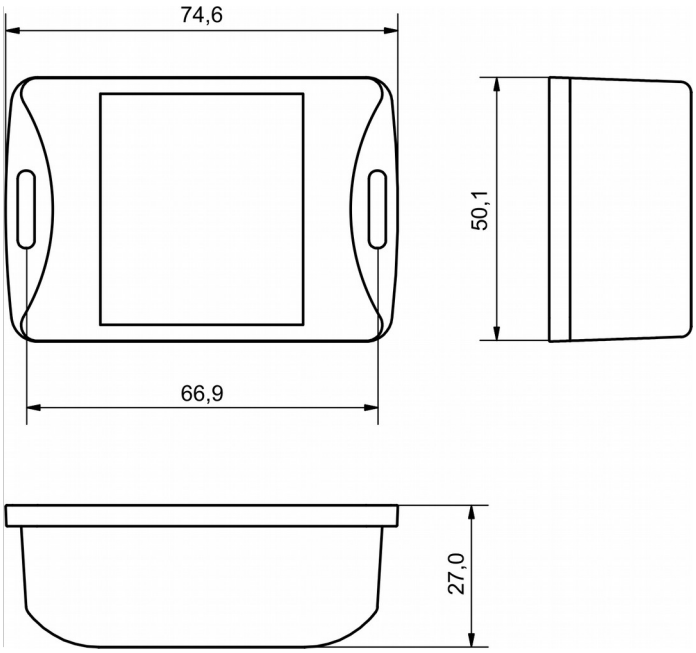
- embedded web server, using a standard internet browser (preferred browsers are MOZILLA FIREFOX, OPERA, CHROME),
- windows / linux command line programs
- HTTP protocol
- Modbus TCP protocol
- Modbus RTU protocol
- SNMP protocol
- own application via TCP protocol (shared protocol)
- MQTT to Inveo server protocol

The module is equipped with an LED display on which the currently measured value is displayed.

5.2 Technical data

Power supply: 10-24VDC or PoE IEEE 802.3af
Power consumption: max 1,5W

Weight: 60g
Distensions: height: 27 mm; width: 74.6 mm; length: 50.1 mm



Port Ethernet

Speed 10Mb/s
PoE compatible with the standard IEEE802.3af

Port RS485

Supported protocol: Modbus RTU
Transmission speed: 1200,2400,4800,9600,19200,38400,57600 bps
Parity: None, Odd, Even, Mark, Space, 2 Stops

Input

1 analog input configured with a jumper (voltage / current) and programmatically
Frequency of measurement: 4Hz
Transducer resolution: 17 bit

Input parameters in current mode:

Measurement range: 0-20mA or 4-20mA
Maximum input current: 25mA
Input impedance: 200R
Measurement error: <0,8%

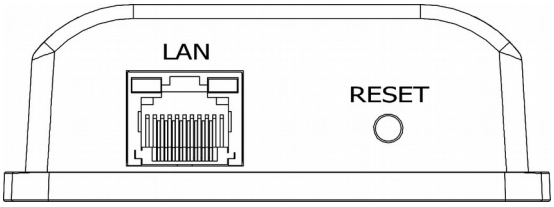
Input parameters in voltage mode:

Measurement range: 0-5V lub 0-10V
Maximum input voltage: 12V
Input impedance: 60k
Measurement error: <0,5%

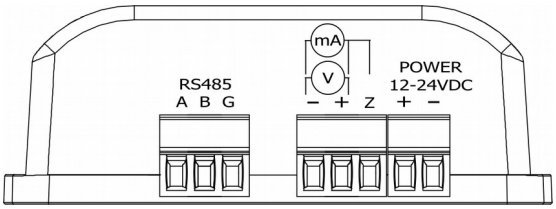
5.3 Description of the module connectors

The module is equipped with the following connectors:

- **LAN** – connection of LAN and power PoE IEEE 802.3af
- **RESET** – a switch to enabling the DHCP, schecking the current IP address and restoring the module to the factory settings.

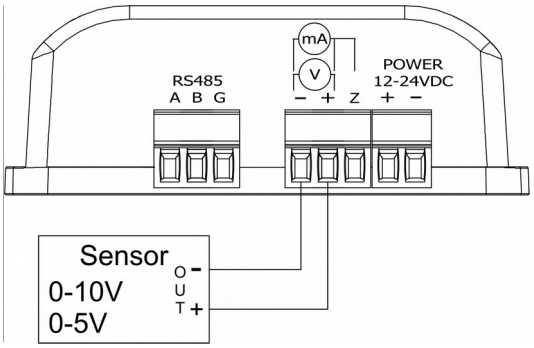


- **SENSOR –** disconnectable screw connection for sensor connection
- **RS485** – MODBUS RTU communication connection
- **POWER –** power connection. An additional power connection used in the event of a PoE power failure. Power supply voltage 12-24VDC.

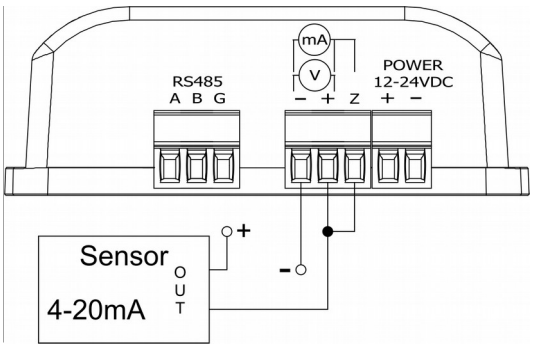


5.4 Sensor connecting schematics

Voltage output sensors (0-10V or 0-5V)



Current output sensor (0-20mA or 4-20mA)



Nano Temperature Sensor POE

Nano Temperature Sensor

Soft >= 1.21

5 Construction of the device

5.1 Nano Temperature Sensor PoE

Technical data:

Power supply::

PoE: 33-57V POE IEEE 802.3af
DC: 10-24VDC (screw terminals 3,5mm)
Power consumption: max 1,5W

Inputs:

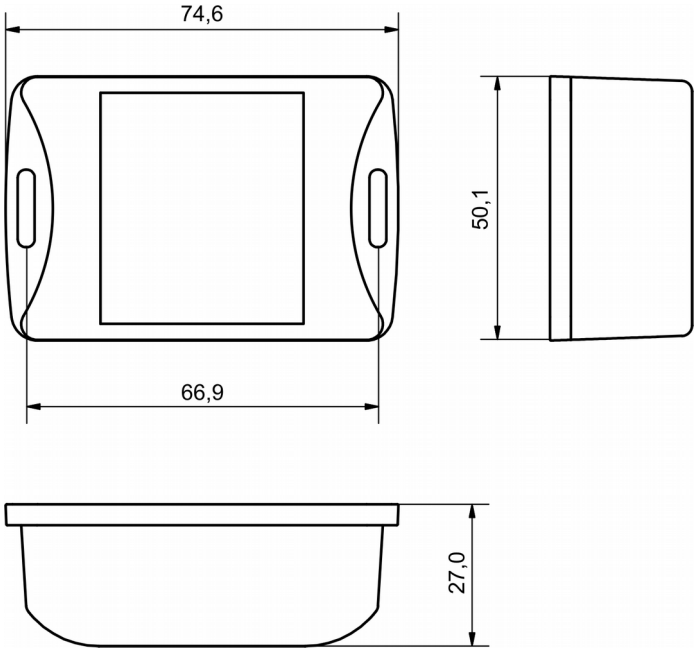
1 input: input type: 1-wire bus
type of sensor: DS18B20
temperature measured: -55°C do +125°C
screw connection

Communication:

1 port Ethernet: 10Mbps
PoE IEEE 802.3af

Housing:

IP Code: 30
Dimensions:



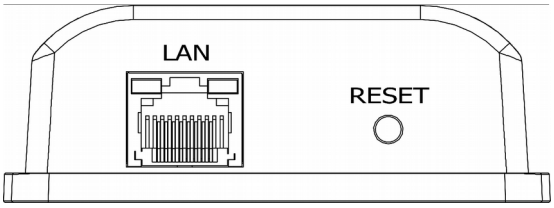
General features:

The device has a 7-segment display.

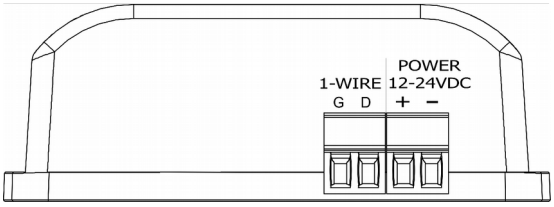
There are several ways to communicate with the module:

- using built in WWW server via any web browser,
- Windows / Linux command line programs,
- MODBUS TCP protocol,
- SNMP protocol,
- MQTT Inveo protocol,
- User application – TCP protocol available for user.

Description of the module connectors:



- **LAN** – LAN connection and PoE IEEE 802.3af power supply,
- **RESET** – switch used to enabling DHCP service, checking the current IP address and restoring the module to the factory settings.



- **1-WIRE –** screw connection for connection of the temperature sensor,
- **POWER –** power connector. An additional power connector used in the event of a PoE power failure. Supply voltage 10-24VDC.

Nano Temperature Sensor

Technical data:

Power supply:

The module is adapted to 12-24VDC power supply.
Power is supplied through the PoE adapter.

Inputs:

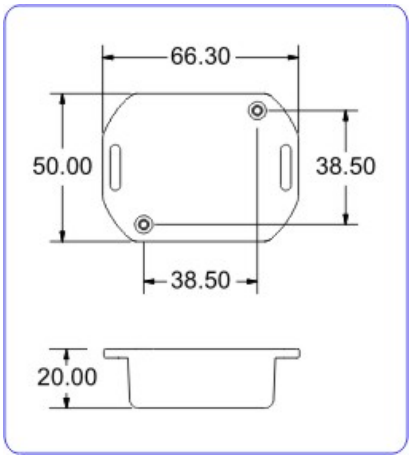
1 input:	input type: 1-wire bus
	type of sensor: DS18B20
	temperature measured: -55°C do +125°C
	screw connection

Communication:

1 port Ethernet:	10Mbps
	passive PoE 12-24VDC power supply

Housing:

IP Code: 30
Dimensions:



General features:

The device has two LEDs. LEDs indicate power supply and temperature reading.

There are several ways to communicate with the module:

- using built in WWW server via any web browser,
- Windows / Linux command line programs,
- MODBUS TCP protocol,
- SNMP protocol,
- MQTT Inveo protocol,
- User application – TCP protocol available for user.

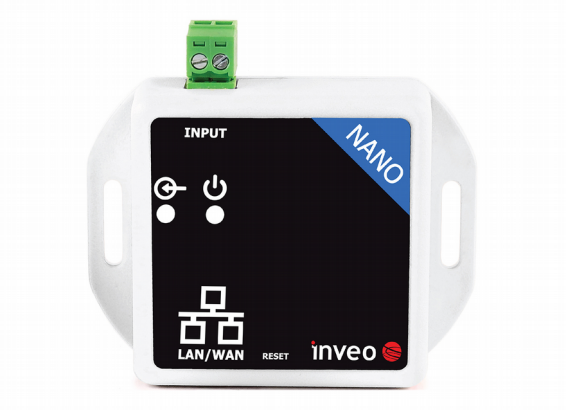
Description of the module connectors:

- **LAN** – LAN network and Passive PoE power supply,
- **RESET** – switch used to enabling DHCP service and restoring the module to the factory settings.
- **1-WIRE –** screw connection for connection of the temperature sensor.

The Digital Input Module

Nano Digital Input PoE

Nano Digital Input



Soft >= 1.21

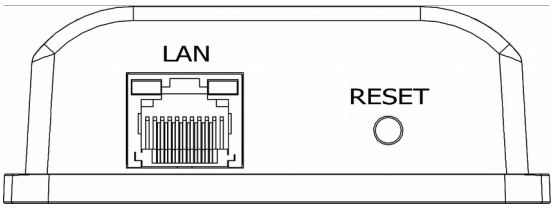
General features:

The device has a 7-segment display signaling the current input status (**ON** or **OFF**).

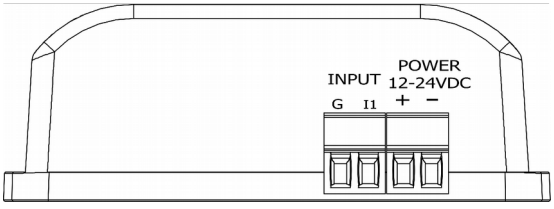
There are several ways to communicate with the module:

- using built in WWW server via any web browser,
- Windows / Linux command line programs,
- MODBUS TCP protocol,
- SNMP protocol,
- HTTP protocol,
- MQTT Inveo protocol,
- User application – TCP protocol available for user.

Description of the module connectors:



- **LAN** – LAN connection and PoE IEEE 802.3af power supply,
- **RESET** – switch used to enabling DHCP service, checking the current IP address and restoring the module to the factory settings.



- **INPUT –** digital input NO, dry contact,
- **POWER –** power connector. An additional power connector used in the event of a PoE power failure. Supply voltage 10-24VDC.

5.2 Nano Digital Input

Technical data:

Power supply:

The module is adapted to 12-24VDC power supply.
Power is supplied through the PoE adapter.

Inputs:

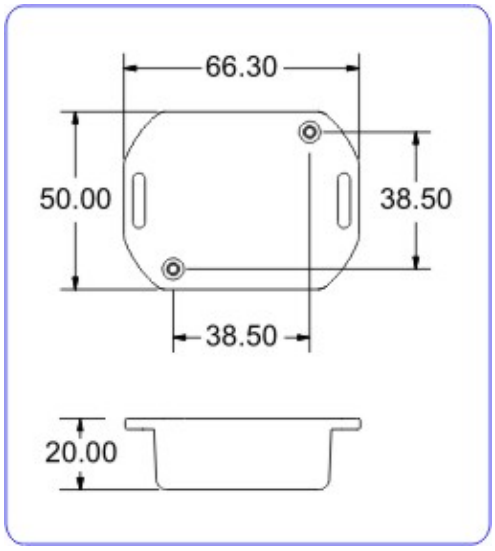
1 input: Input type – dry contact NO
Counter max value: 4 294 967 296
Max input frequency: 1000Hz

Communication:

1 port Ethernet: 10Mbps
passive PoE 12-24VDC power supply

Housing:

IP Code: 30
Dimensions:



General features:

The device has two LEDs. LEDs indicate power supply and input status.

There are several ways to communicate with the module:

- using built in WWW server via any web browser,
- Windows / Linux command line programs,
- MODBUS TCP protocol,
- SNMP protocol,
- HTTP protocol,
- MQTT Inveo protocol,
- User application – TCP protocol available for user.

Description of the module connectors:

- **LAN** – LAN network and Passive PoE power supply,
- **RESET** – switch used to enabling DHCP service and restoring the module to the factory settings,
- **INPUT –** digital input NO, dry contact.

The Relay Output Module

Nano Relay Output PoE

Nano Relay Output

Soft >= 1.21

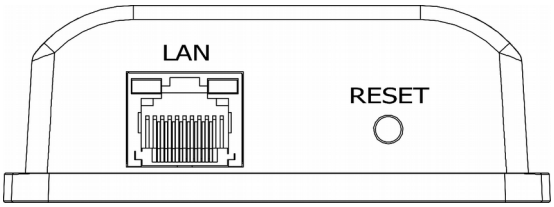
General features:

The device has a 7-segment display signaling the current input status (**ON** or **OFF**).

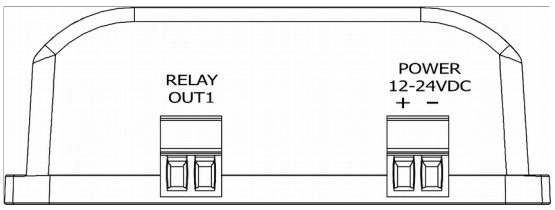
There are several ways to communicate with the module:

- using built in WWW server via any web browser,
- Windows / Linux command line programs,
- MODBUS TCP protocol,
- SNMP protocol,
- HTTP protocol,
- MQTT Inveo protocol,
- User application – TCP protocol available for user.

Description of the module connectors:



- **LAN** – LAN connection and PoE IEEE 802.3af power supply,
- **RESET** – switch used to enabling DHCP service, checking the current IP address and restoring the module to the factory settings.



- **OUTPUT –** relay connector NO,
- **POWER –** power connector. An additional power connector used in the event of a PoE power failure. Supply voltage 10-24VDC.

5.2 Nano Relay Output

Technical data:

Power supply:

The module is adapted to 12-24VDC power supply.
Power is supplied through the PoE adapter.

Outputs:

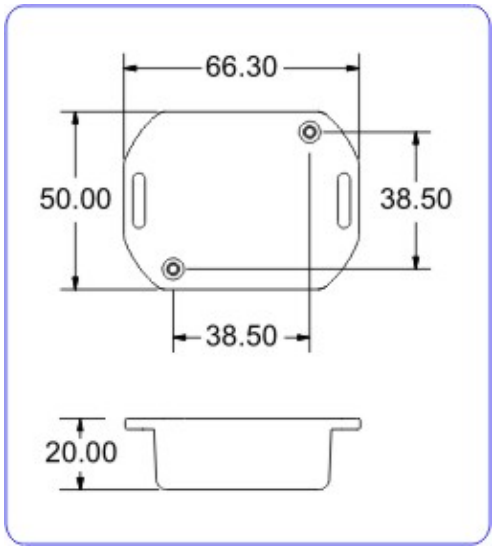
1 output: Output type: relay NO
Max current: 1A @ 30VDC
Engage time: 10ms,
Disengage time: 5ms,

Communication:

1 port Ethernet: 10Mbps
passive PoE 12-24VDC power supply

Housing:

IP Code: 30
Dimensions:



General features:

The device has two LEDs. LEDs indicate power supply and input status.

There are several ways to communicate with the module:

- using built in WWW server via any web browser,
- Windows / Linux command line programs,
- MODBUS TCP protocol,
- SNMP protocol,
- HTTP protocol,
- MQTT Inveo protocol,
- User application – TCP protocol available for user.

Description of the module connectors:

- **LAN** – LAN network and Passive PoE power supply,
- **RESET** – switch used to enabling DHCP service and restoring the module to the factory settings,
- **OUTPUT** – relay connector NO.