[ENG] NetPing IO R401, User Guide

Содержание

[ENG] [R401] 1. Introduction

This guide will help you get acquainted with the specialities and features of the **NetPing IO R401,** get an idea of its functionality and technical characteristics and prepare the device for operation.

This User Guide is designed for network administrators and users, who set up or operate the device. To work with the device properly, a user must have an idea about the principles of building and functioning of local networks as well as possess the next knowledge and skills:

- Basic knowledge in the area of local and global networks;
- Basic knowledge in the area of architecture and principles of work of TCP/IP networks;
- Basic knowledge in the area of architecture and principles of work of Ethernet networks.

[ENG] [R401] 2. Limitation of Liability and Copyright

Limitation of Liability and Copyright

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[ENG] [R401] 3. Connectors and Indication Elements

The front panel of the NetPing IO R401 device is shown in this image:
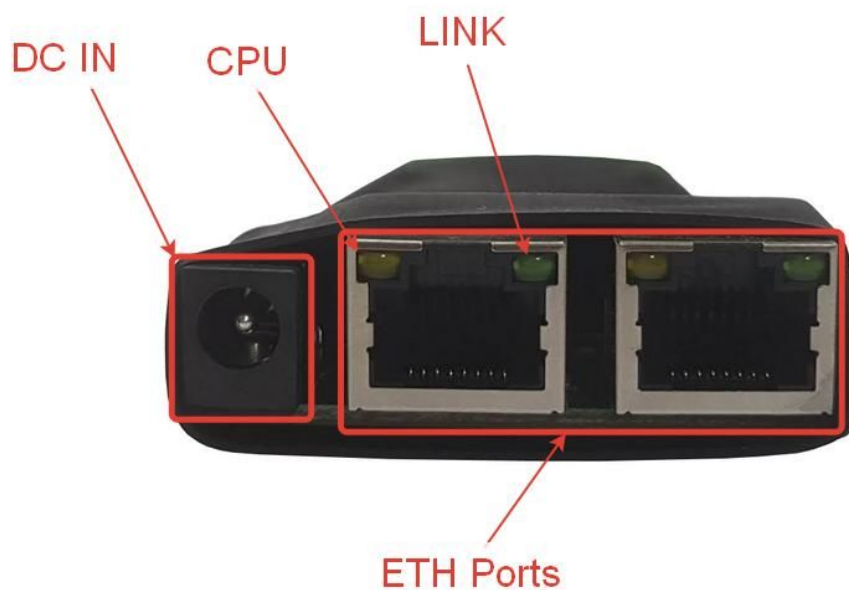
There are two Ethernet 10/100-BASE-TX connectors on the front panel of the device. The device can be connected to the Ethernet network using any of these connectors. The second connector can be used to connect any network devices including other NetPing devices.

Connectors and indication elements:

Element	Function
DC IN	12V power connector

Element	Function
Eth ports	2x 100 BASE-TX Ethernet
CPU	An indicator of the device operation. The indicator flashes when it transmit packets to the network. Fast flashing occurs when the device is reset to initial (factory) settings
LINK	An indicator of the device operation. It flashes when it receives packets.

The back panel of the NetPing IO 254R301 device is shown in this image:
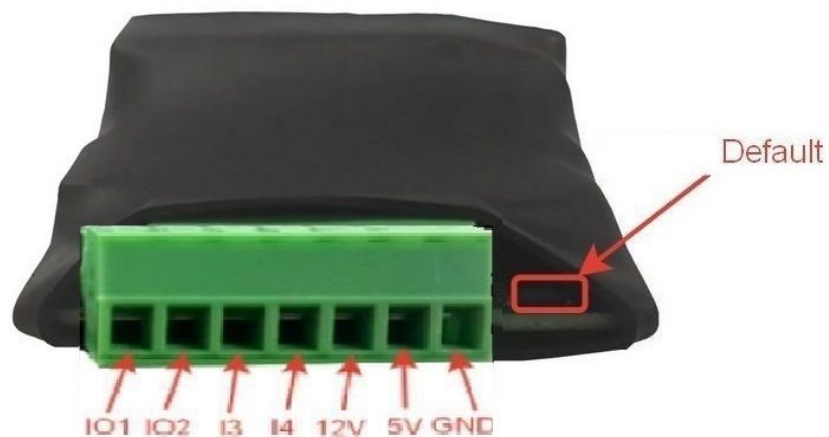
Element	Function
IO1...2	Input/output lines
I3...4	Input lines
12V	External sensors power output 250mA
5V	External sensors power output 250mA
GND	Ground
Default	Reset button to the factory settings. In order to reset you need to turn on the device with the button held down, wait until the CPU indicator stops flashing and release the button.

[ENG] [R401] 4. Installation and Connection

In order to connect the device follow these steps:

1. Remove the device from its packaging.

2. Connect the devices which you need (see «Connection of sensors» section).

3. Connect the power supply unit to the power connector.

4. Insert the power supply unit into an electrical socket. The power indicator will light up.

5. Insert the Ethernet-cord into any Ethernet-connector of the devicer, connect it to the switch or directly to the network card of the computer.

6. IP address was set by default. Fot the initial setting of the device make sure that the address of your computer is located in the same IP-subnet as the address of the device. For example, the address which is set on the computer can be 192.168.0.11 mask 255.255.255.0.

7. For the initial configuration of the device parameters using the web-interface, make sure that the device responds to the ping command at its IP address.

```
C:\>ping 192.168.0.100

Обмен пакетами с 192.168.0.100 по 32 байт:

Ответ от 192.168.0.100: число байт=32 время<1мс TTL=128
Ответ от 192.168.0.100: число байт=32 время<1мс TTL=128
Ответ от 192.168.0.100: число байт=32 время<1мс TTL=128
Ответ от 192.168.0.100: число байт=32 время<1мс TTL=128

Статистика Ping для 192.168.0.100:
    Пакетов: отправлено = 4, получено = 4, потеряно = 0 (0% потерь),
Приблизительное время приема-передачи в мс:
    Минимальное = 0мсек, Максимальное = 0 мсек, Среднее = 0 мсек
```

8. In order to configure the device, open the web-interface of the device using this address http://192.168.0.100 with the help of a browser (it is recommendable to use the latest version of Google Chrome). In order to authorize, use:

- **Login:** visor
- **Password:** ping
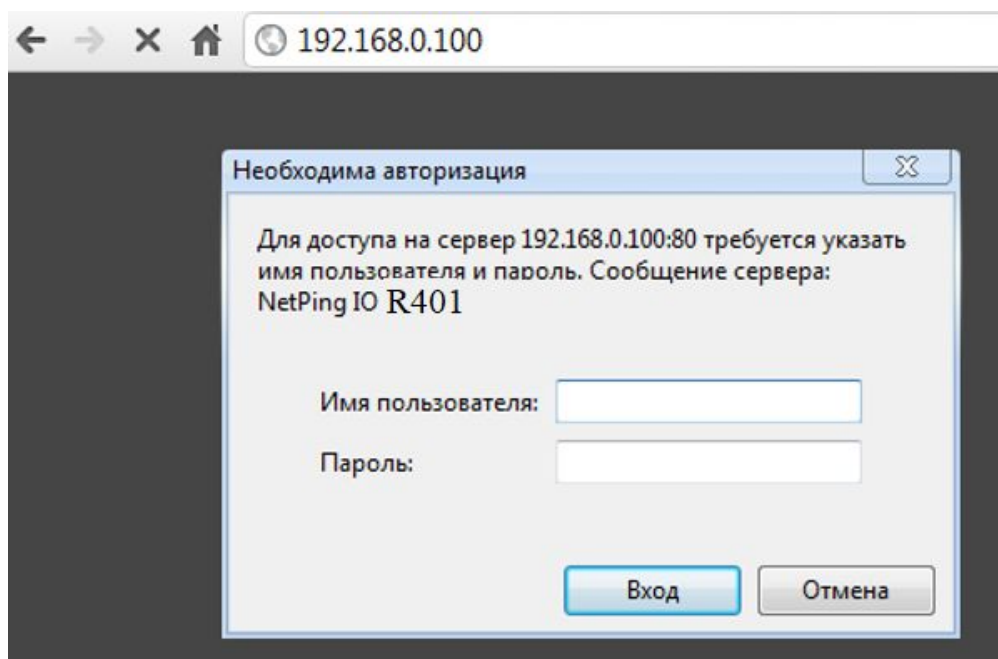
Further configuration of the device is carried out in the web-interface of the device.

> Attention! The description of the web-interface can be found in a separate document DKSF 561.X IU, where X — the number of a firmware version of the device, which description you use.

[ENG] [R401] 5. Connection of sensors

> It is strictly prohibited to connect sensors and external modules to the Netping devices with power on!

> The configuration of the device and receiving notifications from the sensors are in the document "Firmwear description».

Sensors of the "Dry Contact" type

The sensors of the 1-Wire model range are connected with 1-wire plugs RJ12 with the possibility to use extension cords and splitters. The maximum loop length of 1-wire network, connected to one connector is restricted to 50 meters. It is possible to connect up to 8 temperature sensors and 4 humidity sensors in total at the same time.

Sensors of the "dry contact" type include a door sensor etal, opening button sensors and other the pricipal of functionality is based on the closing/opening of the conductor. The sensor is connected to the IO1 ... 2 or I3 ... 4 lines of the device according to the table. The order in which the wires are connected does not matter.

Loop	Terminal
The first wire	One of the lines IO1...2 or I3...4
The second wire	GND

> Attention! The sensors of the "dry contact" type: a supply volyage sensor 995S2, a liquid sensor and other are connected to IO1...2 lines of the device or to input lines. You can conect any 4 sensors from this set.

> Attention! The corresponding IO-line must be switched to the "input" mode in the device settings.

The maximum allowed loop lenght is 100 meters.

Connection of the Liquid sensor (mod.2605)

The number of connected liquid sensors is resricted by free IO-lines and input lines of the device. When you carry out the connection, by guided by the colour of the heat shrink tubing at the end of the wire.

Coloured cable	Terminal
Black	GND
Red	+5V
Green	One of the lines IO1...2 or I3...4

NetPing IO R401

IO1	IO2	I3	I4	+12V	+5V	GND

6p6c

VT592

4p4c

Black	- Connect the wire to GND terminal
Red	- Connect the wire to +5V terminal
Green	- Connect the wire to one of the terminals IO 1...2 or I 3...4
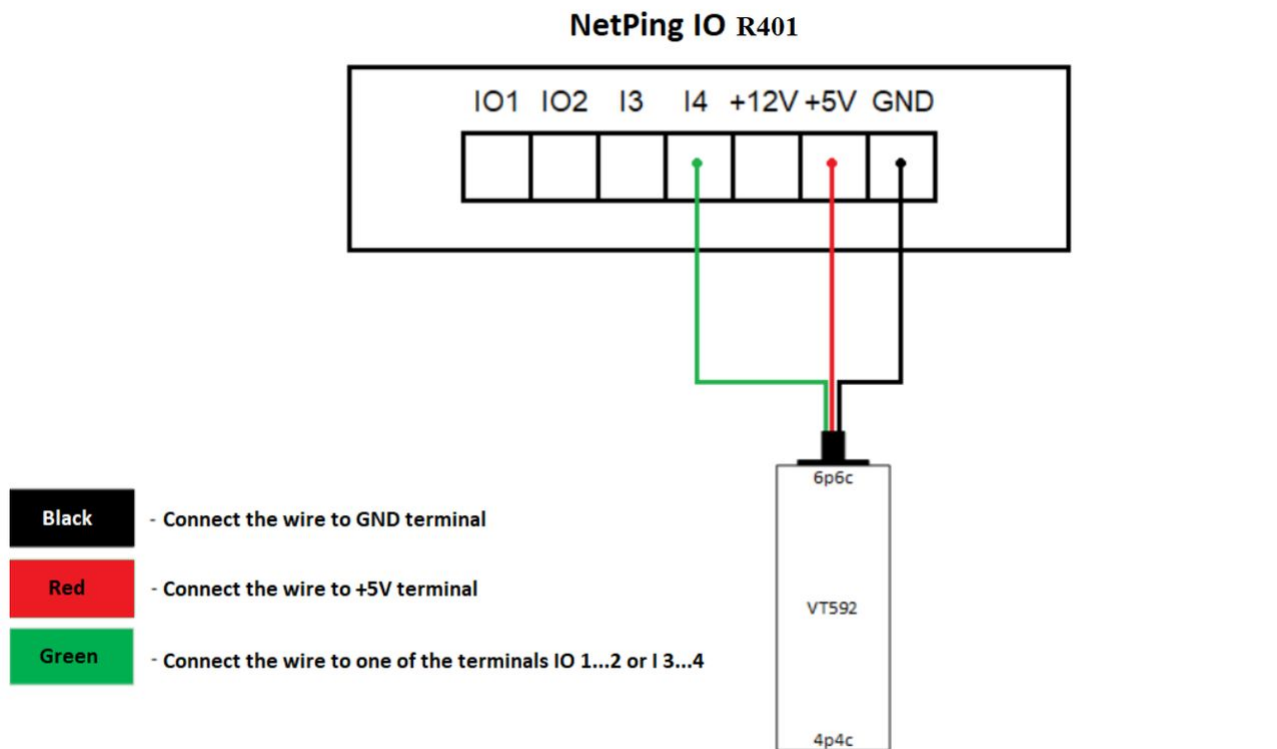
While connecting the sensor:

- "1" — norm;
- "0" — alarm.

> Attention! The corresponding IO-line must be switched to the "input" mode in the device settings.

The sensor is supplied with a 2 m connection cable. You can extend the length of the cable using Cable 4 extenders, 4m, which are connected in series into each other, or independently using any wire with a cross section of at least 0.4 mm^2 . The maximum permissible loop length is 100 meters.

The sensor has two connectors on different sides 6p6c for connecting to the monitoring device and 4p4c for connecting to the sensitive cable.
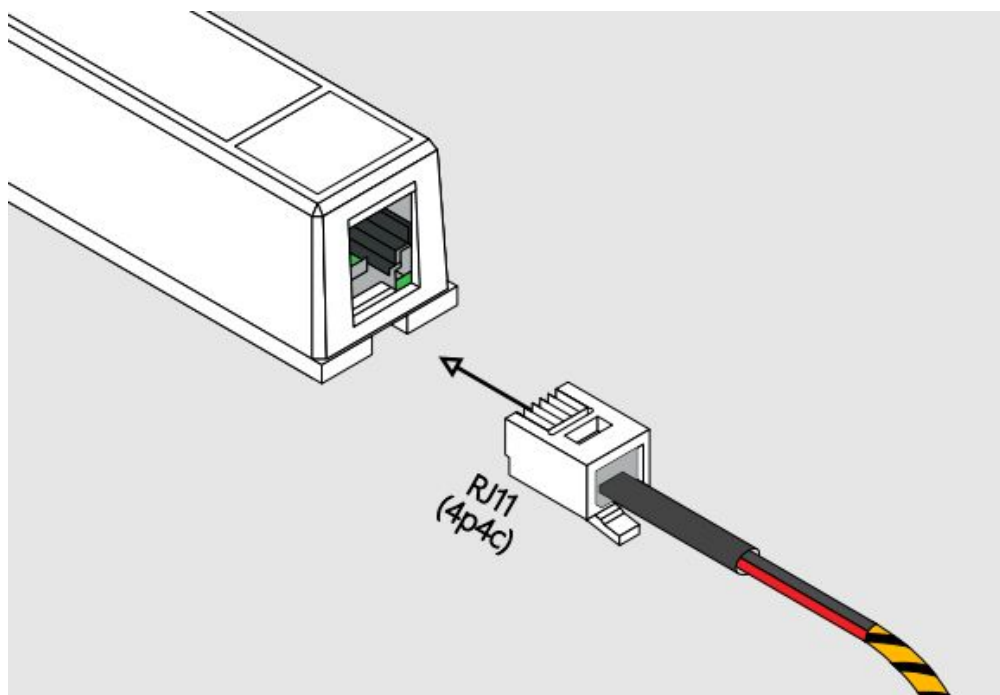
NetPing Supply Voltage Sensor 995S2

NetPing Supply Voltage Sensor is connected with a tree-wire line in accordance with the table.

NetPing IO R401

| IO1 | IO2 | I3 | I4 | +12V | +5V | GND |

Black – Connect the common wire to GND terminal

Red – Normally closed (NC)

White – Normally open (NO)

995S1

The pair of wires for connection is chosen in accordance with a necessary signal while the voltage is present/absent in the network. It is allowed to connect all three wires.
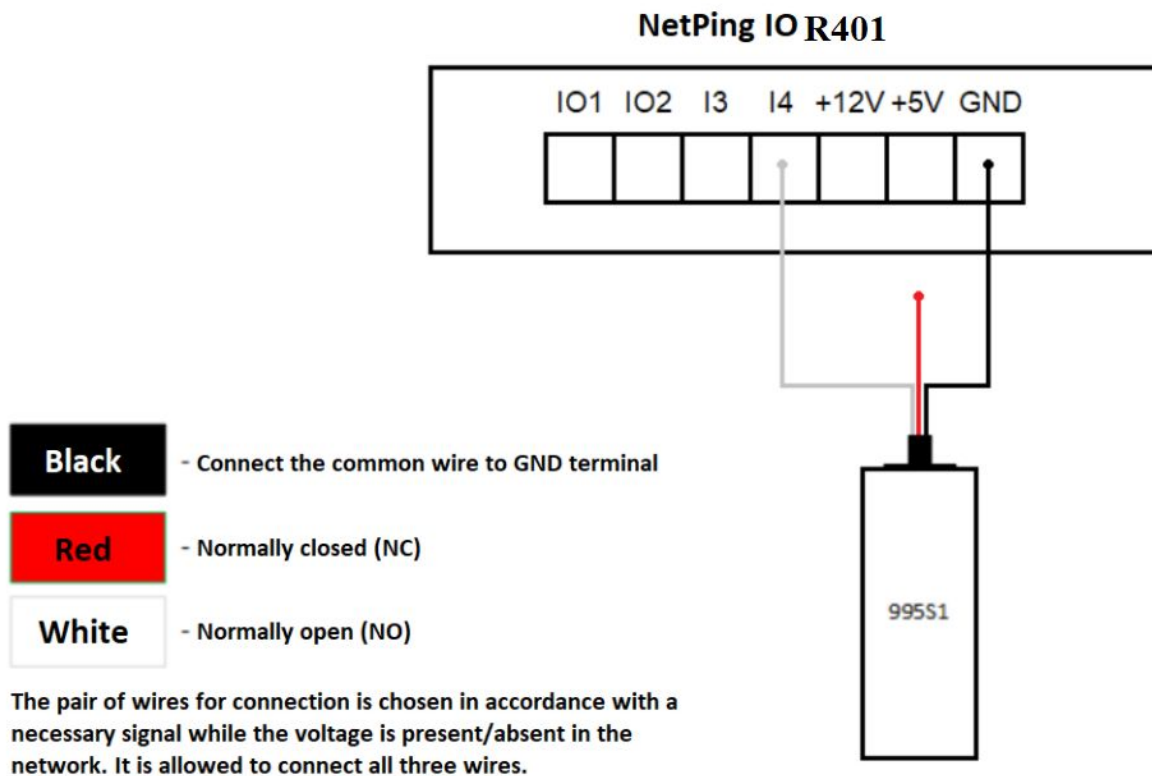
Coloured cable	Terminal
Black (common)	GND
Red (Normally closed contact)	One of the lines IO1...2 or I3...4
White (Normally open contact)	One of the lines IO1...2 or I3...4

> The sensors of the "dry contact" type: a supply volyage sensor 995S2, a liquid sensor and other are connected to IO1...2 lines of the device or to input lines. You can conect any 4 sensors from this set.

> Attention! The corresponding IO-line must be switched to the "input" mode in the device settings.

The sensor is supplied with a non-detachable cable with a lug at the ends. You can extend the length of the cable using Cable 4 extenders, 4m, which are connected in series into each other, or independently using any wire with a cross section of at least 0.4 mm^2. The maximum permissible loop length is 100 meters.

PIR detector (mod.M105-1E)

PIR detector is connected with a four-wire line in accordance with the table.

Cable (coloured)	Cable (flat)	Terminal
Green	Marked (red) wire	One of the lines IO1...2 or I3...4
White	The first wire after the marked one	GND
Black	The second wire after the marked one	GND
Red	The third wire after the marked one	+12 V

> Attention! The sensors of the "dry contact" type: a supply volyage sensor 995S2, a liquid sensor and other are connected to IO1...2 lines of the device or to input lines. You can conect any 4 sensors from this set.

> Attention! The corresponding IO-line must be switched to the "input" mode in the device settings.

The sensor is supplied with a non-detachable cable with a lug at the ends. You can extend the length of the cable using Cable 4 extenders, 4m, which are connected in series into each other, or independently using any wire with a cross section of at least 0.4 mm^2. The maximum permissible loop length is 100 meters.

External NetPing AC/DIN socket

The number of connected NetPing AC/DIN sockets is restricted only by the number of free IO-lines.

When you connect the socket, you will use all the wires, except the brown (white) one. The IO-line to which the NetPing AC/DIN socket is connected should be put into the "Input" state. When the state is "log. 0 "on the IO-line at the socket there will be 220 V - the load will be turned on. When the state is "log. 1 "on the IO-line, the socket will be withour power, the load will be disconnected.

> Attention! The brown (white) wire is not used and should be left disconnected.

The management of external sockets from IO-lines:

| Coloured cable	Terminal
Red	+5V
Black	GND
Blue (green)	One of the IO1...2 lines

Buzzer (mod.STD-3025)

Coloured cable	Terminal
While	One of the IO1...2 lines (in the «output» mode, log. 1)

Coloured cable	Terminal
Coloured	GND

A logic level on the line in the "output" mode used for power supply will control the operation of the buzzer. When log. 1 - the beacon is active, at log. 0 - the beacon is off.
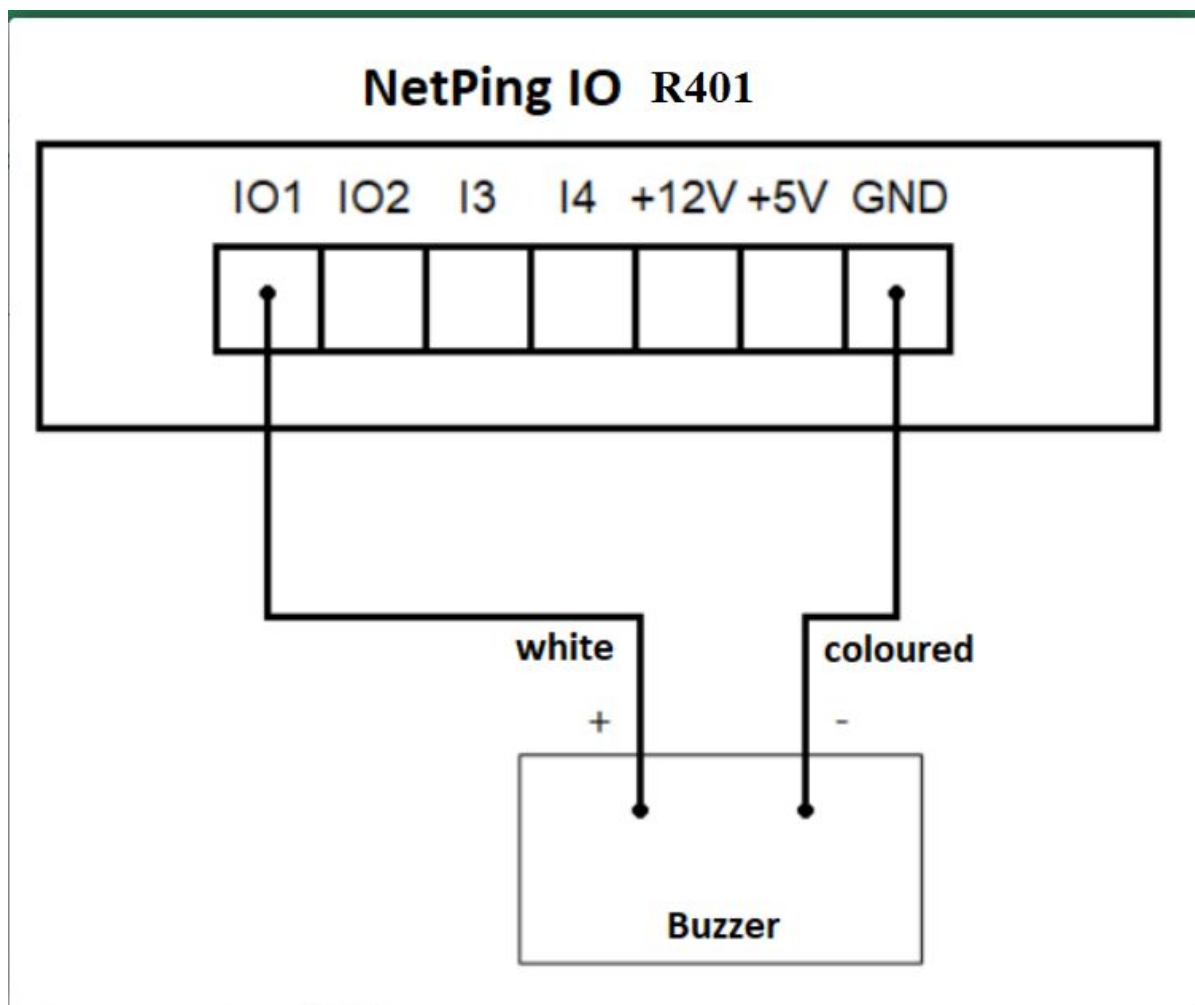
The sensor is supplied with a non-detachable cable with a lug at the ends. You can extend the length of the cable using Cable 4 extenders, 4m, which are connected in series into each other, or independently using any wire with a cross section of at least 0.4 mm^2. The maximum permissible loop length is 100 meters.

Airflow sensor + GRID 120 * 120 * 10mm NC

This sensor is a "dry contact" type sensor, so the order of connecting wires does not matter. The number of connected sensors is restricted only by the number of free IO1...2 and I3...4 lines.

Cables	Terminal
The first wire	One of the lines IO1...2 or I3...4

Cables	Terminal
The second wire	GND

Depending on the input (IO1 ... 2 or I3 ... 4) which the sensor is connected to on the terminal block, it is displayed on that channel IO1 ... 2 or I3 ... 4 in the device web interface.

Attention! The corresponding IO-line must be switched to the "input" mode in the device settings.

The sensor is supplied with a non-detachable cable with a lug at the ends. You can extend the length of the cable using Cable 4 extenders, 4m, which are connected in series into each other, or independently using any wire with a cross section of at least 0.4 mm^2. The maximum permissible loop length is 100 meters.

[ENG] [R401] 6. Using IO Lines for Managing External Devices (in the «Output» Mode)

Input-Output (IO1-IO2) lines of the device can be used both for the operation in the "input" and "output" modes for managing external devices in contrast with Input lines (I3-I4) which function only in the "input" mode.

The configuration of IO-lines for operation in "input" or "output" modes is carried out via the managing web-interface of the device or via the URL-encoded commands. Both IO lines can be configured independently from each other.

IO-lines can be controlled using SNMP commands, URL-encoded commands, via the web interface, or via SMS commands (for devices with a built-in GSM modem).

The example of application:

- remote reboot of servers - an imitation of pressing down the Reset button;
- remote management of the buzzer, light, a fan;
- management of an electric lock, electric gate at a remote object;
- management of the elements of a «smart house»: watering plants, opening-closing of blinds, a water pump, a heating boiler, electric heaters and so on;
- remote management of a power plant (a diesel generator, a gas generator).

> Attention! Correct electrical coordination of the IO lines is required when connecting external executive devices.

> Attention! IO lines are not galvanically isolated from the device! When you use relays that switch 220 V circuits, remember about electrical safety. All operations must be carried out by specialists with the appropriate qualifications and permission to work with this voltage.

It is possible to use auxiliary relays with the supply voltage from an external 12V source. A controlled NetPing AC/DIN socket can be used to connect to IO lines. We can also recommend ready-made relay assemblies that can be connected to our devices, for example a power relay (see the compatibility of this relay with the NetPing device model on the relay page of the website).

To get more information, please contact technical support support@netpingdevice.com

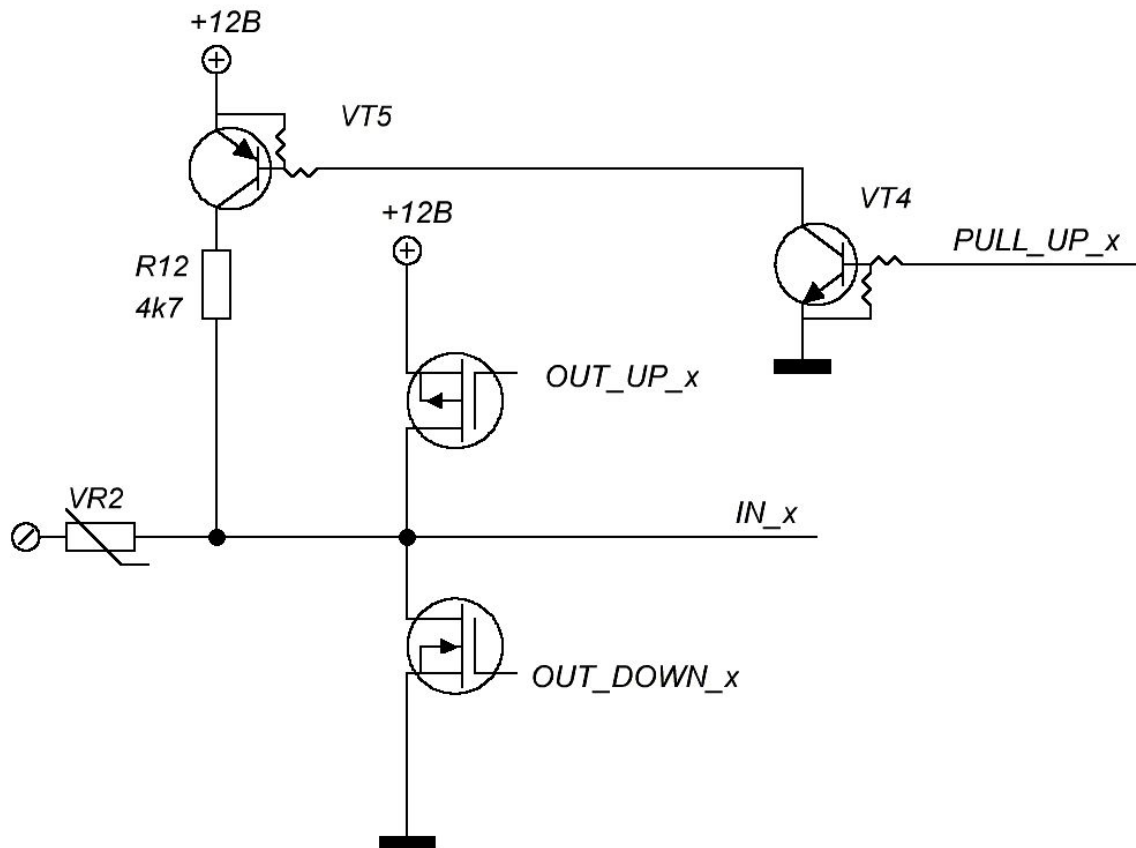## Electrical parameters of IO lines (IO1- IO2)

In the «output» mode:

- the voltage of logic «1»: +12 V, the resistance: 4,7 kOhm;
- the voltage of logic «0»: 0 V, the current is up to 200 mA.

The total output current IO must not exceed the maximum current of the 12V power supply output (250mA).

In the «input» mode:

- the voltage of the logic «1»: > 8,2 V;
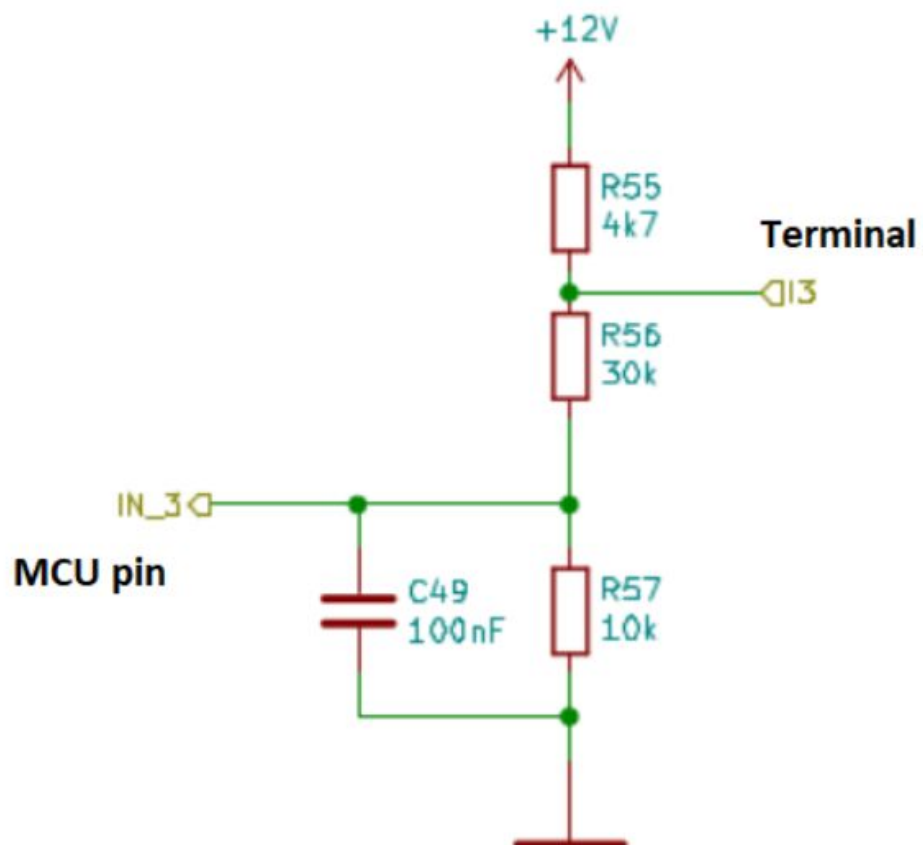- the voltage of the logic «0»: < 3,5 V.

Equivalent circuit

Electrical parameters of input lines (I3–I4)

- the voltage of logic «1»: > 8,2 V;
- the voltage of logic «0»: < 3,5 V.

Equivalent circuit

[ENG][R401] 7. Resetting Settings to Default Values

To reset parameters you have to do following steps:

- switch off the power;
- press and hold down Default button
- switch on the power;
- wait for 10 seconds (the CPU indicator will blink);
- release the Default button.

If you follow the steps successfully, the LED will blink, indicating the reset of the parameters

By default, the device has the following parameters:
Username: **visor**
Password: **ping**
IP-address: **192.168.0.100**
The musk of the subnetwork: **255.255.255.0**
Gate: **не установлен**
SNMPcommunity: **SWITCH**
MAC-address: **00 a2 xx xx xx xx**
Here xx xx xx xx corresponds to the serial number of the device. Thus, all devices after production have unique MAC addresses.

After resetting the parameters to the default values, it is necessary to carry out the initial configuration of the device.

[ENG] [R401] 8. Additional Documents and Links

The page of the device on the manufacturer`s website:

The official website of the manufacturer: http://www.netpingdevice.com

The contacts of the technical support: support@netpingdevice.com

Phone: +886-2-23121582

Email: support@netpingdevice.com

[ENG] [R401] 9. Warranty Obligations

The Manufacturer guarantees normal operation of the product within 24 months from the date of purchase if a Buyer follows operating and storage conditions. Manufacturer warranty applies only to failure of a device which occurred because of defects in manufacturing process of products and components used. If during a warranty period the manufacturer receives a notice of such defects, it will repair or exchange the product by its own discretion. If the manufacturer is unable to repair or replace a flawed item during a period of time determined by the current legislation, the manufacturer according to a customer's wish can return the amount paid for the product at the time of purchase. The manufacturer provides a limited warranty on firmware and device configuration software. In case of detecting any errors in the software which became known to the manufacturer on its own or from a customer, the manufacturer will fix these errors within a reasonable time and provide an update to the customer. Only the errors that block normal use of the device at conditions and for performing functions described in this User Guide are a subject to mandatory fix. This warranty does not apply to cases when defects appear because of: a misuse of a device, any modifications of a device without a written permission of the manufacturer, opening up a device (a warranty sticker on the case of a device is damaged) except cases foreseen by this description; repairing by unauthorized personnel, using or storing a device out of the range of allowable temperature and humidity, pressure, a software modification, and the reasons, listed below:

- A device failed because of the problems in a public electric network (power fluctuations and surges, overloading, etc.);
- A device failed because of having liquid inside;
- A device failed as a result of extreme temperatures;
- A device failed because of mechanical damage;
- A device failed because of connecting a power supply unit with invalid output voltage or a defective power supply unit;
- There are foreign objects, insects, etc inside the enclosure;
- During operation the voltage bigger than the allowable voltage range by the Ethernet standard has been supplied to the ports of a device (it is actual for the devices with built-in Ethernet ports).

[ENG] [R401] 10. Operation Conditions and Storage

This device is designed for continuous round-the-clock operation only in closed spaces. In operating conditions the device is resistant to air temperature from -30°C up to+50°C and relative humidity from 5 up to 95% with the temperature of 25 °C (without moisture condensation). Protect the device from direct moisture and sunlight.

The design of the device provides for reliable continuous operation during a long time without the need for special maintenance. The advanced functionality of remote setting and configuration allows you to change any parameters remotely and centrally for a large number of devices.

The storage of the devices is carried out at the temperatures from -40 up to +70 °C.

The content of dust, vapors of acids and alkalis, corrosive gases and other harmful impurities that cause corrosion should not exceed the content of corrosive agents for type 1 atmosphere in storage rooms.

Attention! The device must be connected to a power socket with a grounding prong or a hole that accepts the pin on the socket and connects to a grounding conductor. Grounding must be done in accordance with «Safety Rules for Working with Electrical Equipment». Failure to comply with this rule is a violation of the operating conditions of the device and can be dangerous to human life and harm other devices!