



[ENG] NetPing 8/PWR-220 v4/SMS, User guide

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Developer and manufacturer:

NetPing east Co Ltd.

[8PWR] Introduction

This user guide helps to become familiar with an operation of a **Netping 8/PWR-220 v3/SMS** device and get an idea about its functionality and technical specifications as well as prepare a device for an operation.

A User Guide is designed for network administrators and users, who set up or operate a device. To work with a 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.

[8PWR] Device Overview

In this section a purpose of a NetPing 8/PWRv3/SMS device is described as well as its appearance.

Purpose of a Device

A NetPing 8/PWRv3/SMS device is an IP PDU device on 8 independently managed power supply channels, divided into two groups with four channels. A device's peculiarity is having two independent power supply inputs. Each input allows to provide a power supply to one or both groups of 4 output channels. Switching channels between power supply inputs can be done by a command from a web-interface of a device, from an SNMP interface of a device, with the help of SMS-message or automatically when a power supply disappears on a main input.

Appearance

A device is designed in standard dimensions for installation in a 19" rack. A height of a device is 1U. Inputs and output power supply channels are on a front and back panels of a device. Fasteners for mounting in a rack ("ears") can be bolted to NetPing 8/PWRv3/SMS both front and back, which gives a possibility to mount a device in a rack by any side. An appearance of device is shown on the pictures.

Front panel:



Back panel:



[8PWR] Sockets and Indication Elements

GSM Slots

There are **GSM ANT** sockets on a front panel on the left to connect an external antenna and a **SIM Card** slot to install a SIM card.



LAN Sockets



Ethernet 10/100 BASE-T port. A device has two such ports: one on a front panel and another one on a back panel. Together they form a dual port Ethernet-switch. One port is used for a network connection, another one is used for additional equipment connection (another NetPing device, administrator's laptop, etc.), which gives an opportunity to avoid installing of an additional switch on a remote site. The ports are equivalent, anyone can be used for a network connection.

Important! Connecting both ports to an Ethernet switch with a disabled STP protocol will cause to creation of a loop in an Ethernet segment.

The Ethernet ports have two LEDs. A left one is **CPU**, its glowing means that a device is turned on, its blinking means transferring packages to a network. A right one is **Link**, its lighting means having "link" on this port, its blinking means receiving packages from a network.

RS485 Socket

An RS485 socket is used to connect RS485 devices. An RS485 port can work in one of two modes: either as an RS485– Ethernet interface converter by a TCP protocol or in an electricity meter CE102 (Energy meter) protocol analysis mode.



1W Sockets

1W sockets are used to plug sensors of a model line V4, which are built on a 1Wire technology.



Power Supply Channels Status Indication

On a front panel there are LEDs that indicate a status of the second group of power supply channels. Channels 5 - 8 are included into this group. A status of each channel is represented by a corresponding LED of an **OUT** group. A LED is glowing when there is a voltage on an output (a relay is closed).

220v IN OB *A LED shows from what input the second group of channels is fed. A LED glows when a power supply is fed from an input A, which is located on a back panel of a device.



On a back panel there are LEDs that indicate a status of the first group of power supply channels. Channels 1 - 4 are included into this group. A status of each channel is represented by a corresponding LED of an **OUT** group. A LED is glowing when there is a voltage on an output (a relay is closed).

220v IN OA *B LED shows from what input the first group of channels is fed. A LED glows when a power supply is fed from an input B, which is located on a front panel of a device.



Power Supply Channels

On a front panel there is the second group of power supply channels, with numbers of channels 5 – 8.



On a back panel there is the first group of power supply channels, with numbers of channels 1 -4.



Power Supply Inputs

On a front panel there is a power supply input B.

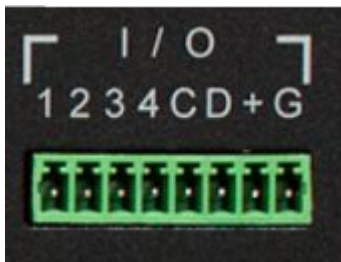


On a back panel there is a power supply input A.



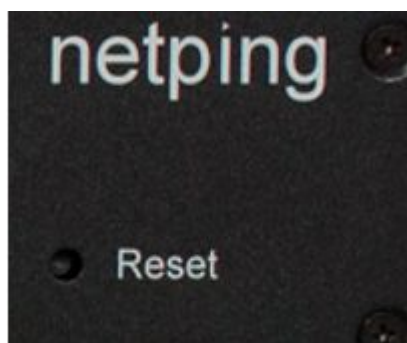
Sensor Plugin Terminals

On a back panel there is a terminal block for sensors plugin. Assignment of the terminals is from left to right: IO1, IO2, IO3, IO4, SC, SD, +5V, GND.



Reset Button

A **Reset** button is located on a back panel of a device. It is designed to reset settings to default values. To reset settings, press the button **Reset** with a sharp object and hold it while turning on a device.



[8PWR] Power Supply Channels Management

Channels Management

A NetPing 8/PWRv3/SMS device has eight independent power supply channels. Each channel is managed by a normally closed relay. A relay and tracks have a big power capacity reserve, which provides a high resistance of a device to overloading.

Each channel can be turned on or turned off independently from others by a command from a web-interface, by an SNMP command or an SMS-message. Likewise it is possible to automatically turn on or turn off a power supply channel according to a schedule or using a functionality of a Watchdog or a Logic. There is a need to remember that when a channel is managed by a functionality of a Watchdog or a Logic, it cannot be turned on or turned off manually (through a web-interface, SNMP, SMS).

Inputs Reservation

A device supports power supply inputs reservation. With this purpose, output power supply channels are divided into two groups, with four channels in each one. Group 1 – channels 1 - 4, Group 2 – channels 5 - 8. For each group a main input is set (1 or 2). Both groups can use the same input as a main one.

In cases of failure of a main input, a group of channels can be switched to a backup input - it is optional and is configured in a web-interface of a device. After recovery of a main input a group of channels returns back to it either automatically or by an administrator's command. This behavior is also programmed in a web-interface of a device. Switching of a group of output channels from one input to another can be done from a web-interface, by an SNMP command, SMS-message.

All switches between the inputs occur with a two-second power supply turning off of a group of channels.

Device's software guarantees consequent turning off (and consequent turning on) of output power supply channels while switching from a main input to a backup one to reduce a value of the switched current.

Connecting a Load to Output Channels

When connecting a load to output power supply channels there is a need to take into account capacity limits of a NetPing 8/PWRv3/SMS device. A maximum capacity of each channel separately is 1500 Watts. A maximum total capacity of four channels in one group is 1725 Watts. I.e., if a consumer with a maximum capacity of 1500 Watts is connected to a channel 1, then it is possible to connect a total load no more than 225 Watts to channels 2,3,4.

Each input can provide 3500Watts, therefore both groups of power supply channels can be fed from one input (1725Watts + 1725Watts = 3500Watts).

[8PWR] Setting Parameters to Default Values (to the Factory Settings)

Resetting parameters to the factory settings is necessary in the following cases :

- A loss of a login and/or password to a web interface of a device;
- A lack of information about current IP address of a device;
- In some cases after a device software update.

A procedure of resetting parameters to the factory settings changes all customizable parameters of a device to the default ones. (IP and MAC addresses, access filters, a user name, a password, etc.).

To reset parameters to default settings, fulfill the next actions sequentially:

- Turn off a power supply of a device;
- Press the Reset button (a button Set for a UniPing v3 monitoring unit);
- Turn on a power supply of a device, continuing to hold Reset button pressed for 15-20 seconds;
- Release the button. All parameters of a device are set to default settings.

On default, the next parameters of a device are set:

User name: **visor**

Password: **ping**

IP address: **192.168.0.100**

Subnetwork mask: **255.255.255.0**

Gateway: **not set**

SNMPcommunity: **SWITCH**

MAC-address: **00 a2 xx xx xx xx**

Here xx xx xx xx corresponds to a serial number of a device. Thus, all devices after being manufactured have unique MAC-addresses.

After resetting parameters to default settings there is a need to do an initial configuration of a device.

[8PWR] Using IO Lines for External Devices Management (in an Output Mode)

Input-Output (IO) lines of a device can be used for an input work as well as in an output mode for managing external devices.

A device has four IO lines, corresponding to contacts I1 – I4 of a terminal block. Lines configuration for work as an input or an output is made through a controlling web-interface of a device. All four IO lines can be customized independently.

Lines management can be done by SNMP commands, URL-encoded commands, via a web-interface or using SMS-commands (for devices with built-in GSM modem).

Such device functions as a watchdog and scheduled load management are NOT AVAILABLE for IO in an output mode.

Examples of using:

- Remote servers reboot – an imitation of pressing “reset”;
- Remote management of an alarm, a light, a fan;
- Management of an electric lock, electric gates on a remote object;
- Management of smart home elements - watering flowers, opening-closing louvers, water pump, heating boiler, heaters, etc.
- Remote management of a power installation (diesel generator, gasoline).

Important! Correct electrical coordination of IO lines is required when connecting external executive devices.

Important! IO lines do not have galvanic isolation with a device! Remember about electrical safety when using relays that commutate 220 V circuits. All work must be done by specialists with a correspondent qualification who have a permit to work with such a voltage!

It is acceptable to use intermediate relays with a power supply voltage 12 V from an external source. A ready socket can be used for IO lines connection [NetPing AC/DIN socket](#). In addition, we can advise ready assembly relays of other manufacturers, which can be connected to our devices:

- BM8070D a power relay 16A/250V for DIN-rail (check out the compatibility of this relay with the NetPing device model on the relay web page on the site);
- MP701 a power module switch (4 independent channels, 2 kW 10A each) (check out the compatibility of this relay with the NetPing device model on the relay web page on the site);

For more detailed information, please contact a technical support support@netpingdevice.com.

Electric parameters of IO lines

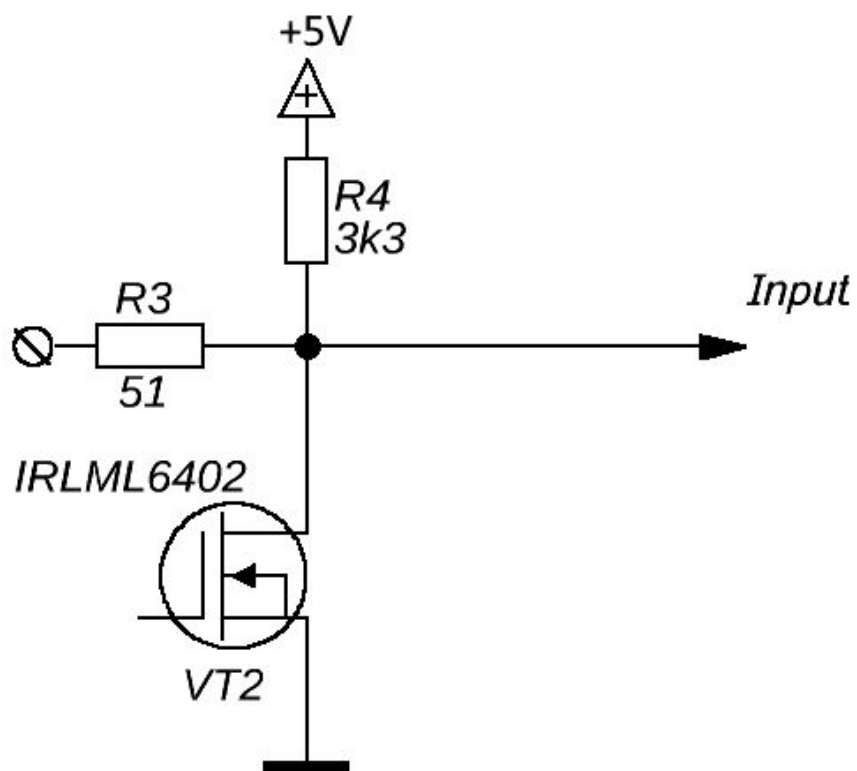
In the «output» mode:

- the voltage of logic «1»: +5 V, resistance: 3,3 kOhm;
- the voltage of logic «0»: 0 V, resistance: 51 Ohm.

In the «input» mode:

- the voltage of logic «1»: > 2,31 V;
- the voltage of logic «0»: < 0,99 V.

Equivalent Circuit



[8PWR] Sensors Plugin

Sensors 1-Wire

Sensors 1-Wire ([Temperature 1-wire, \(THS\), 2m](#) and [Humidity sensor 1-wire](#)) connected to the connectors 1W plugs RJ12, allowed to use extension cords or splitters. Maximum cable length 1-Wire network is limited to 50 meters.

Sensors of Dry Contact Type

Dry contact sensors are door opening sensors, buttons and other sensors, with a mechanism of work based on opening/closing a conductor. A sensor is connected with two wires to an IO line of a device according to the table (an order of plugging wires does not matter).

Sensor Flex	NetPing 8/PWR-220 v4/SMS Terminal
First wire	One of IO lines – 1/2/3/4
Second wire	G

Important! Sensors of a dry contact type, a supply voltage sensor, a leakage sensor, and others are plugged to IO lines of a device. You can plug any four sensors out of this set.

Important! A corresponding IO line should be set to an input mode in settings of a device.

A sensor is packaged with an inseparable cable, with connectors on the ends. A cable length can be increased with the help of [flat cable extenders of RC-4 sensor](#), which are sequentially plugged one into another. Or it can be done independently with the help of any wire with a minimum cross section of 0,4 mm². Maximum allowable length of a flat cable is 100 m.

Leakage Sensors

A leakage sensor is connected by a four-wire line according to the table.

Sensor Flex	NetPing 8/PWR-220 v4/SMS Terminal
Green	One of IO lines – 1/2/3/4
Yellow (White)	G
Red	+
Black	G

Important! Sensors of a dry contact type, a supply voltage sensor, a leakage sensor, and others are plugged to IO lines of a device. You can plug any four sensors out of this set.

Important! A corresponding IO line should be set to an input mode in settings of a device.

A sensor is packaged with an inseparable cable, with connectors on the ends. A cable length can be increased with the help of [flat cable extenders of RC-4 sensor](#), which are sequentially plugged one into another. Or it can be done independently with the help of any wire with a minimum cross section of 0,4 mm². Maximum allowable length of a flat cable is 100 m.

Supply Voltage Sensor

A supply voltage sensor is plugged by a two-wire line according to the table. An order of plugging wires does not matter.

Sensor Flex	NetPing 8/PWR-220 v4/SMS Terminal
First wire	One of IO lines – 1/2/3/4
Second wire	G

Important! Sensors of a dry contact type, a supply voltage sensor, a leakage sensor, and others are plugged to IO lines of a device. You can plug any four sensors out of this set.

Important! A corresponding IO line should be set to an input mode in settings of a device.

A sensor is packaged with an inseparable cable, with connectors on the ends. A cable length can be increased with the help of [flat cable extenders of RC-4 sensor](#), which are sequentially plugged one into another. Or it can be done independently with the help of any wire with a minimum cross section of 0,4 mm². Maximum allowable length of a flat cable is 100 m.

IR Transceiver IRC-TR v2

IR transceiver is plugged by a four-wire line according to the table:

Sensor Flex	NetPing 8/PWR-220 v4/SMS Terminal
Labeled wire (red)	C
Second wire after a labeled one	D
Third wire after a labeled one	+

Sensor Flex	NetPing 8/PWR-220 v4/SMS Terminal
Fourth wire after a labeled one	G

A sensor is packaged with an inseparable cable, with connectors on the ends. A cable length can be increased with the help of [flat cable extenders of RC-4 sensor](#), which are sequentially plugged one into another. Or it can be done independently with the help of any wire with a minimum cross section of 0,4 mm². Maximum allowable length of a flat cable is 100 m.

Plugging NetPing AC/DIN Sockets

When plugging a socket to a device, all wires are used except for a brown one. There is a need to switch an IO line, to which a NetPing AC/DIN socket is connected, to the status "output". When a status of an IO line is logic 0, the socket will have 220V, and a load will be turned on. When a status of an IO line is logic 1, a socket will be cut off power, and a load will be turned off.

Important! A brown wire is not used and must stay unplugged!

Sensor Flex	NetPing 8/PWR-220 v4/SMS Terminal
Red	+
Black	G
Blue (Green)	Одна из IO линий – 1/2/3/4

A relay with normally closed contacts is used to switch load in NetPing AC/DIN. This means if a control wire is not plugged anywhere, 220V will be in the socket and a load will be switched on.

A sensor is packaged with an inseparable cable, with connectors on the ends. A cable length can be increased with the help of [flat cable extenders of RC-4 sensor](#), which are sequentially plugged one into another. Or it can be done independently with the help of any wire with a minimum cross section of 0,4 mm². Maximum allowable length of a flat cable is 100 m.

[8PWR] Shipping Kit

A shipping kit is shown at the picture:



A shipping kit includes:

- A device NetPing 8/PWRv3/SMS;
- An antenna;
- A user guide;
- A packing box;
- A power cord – 2 pcs.;
- Mating terminals – 2 pcs.

[8PWR] Operating and Storage Conditions

A device is designed for continuous round the clock operation indoors. In operating conditions of use, a device is resistant to an environment with temperature in a range of 0°C - +40°C (32 – 104 degrees Fahrenheit) and relative humidity in a range of 5% - 95 % at 25°C (77 degrees Fahrenheit) without moisture condensation. A device should be protected from direct moisture and direct sun light.

A construction of a device provides a reliable uninterrupted work during a long period of time without maintenance. Highly developed functionality of remote setting and configuration of a device allows changing any parameters remotely and centrally for the most of the devices.

Devices should be stored in a temperature range between - 40°C and +70°C.

In rooms for keeping a device, a content of dust, acid and alkali gases, aggressive gases and other harmful impurities causing corrosion, should not exceed a content of corrosion-active agents for atmosphere of type 1.

Important! A device must be connected to a power supply socket with a grounding contact or a hole, where a contact, located at an outlet and connected to a ground wire, is inserted. Grounding must be performed according to the State Standard P 50571.21-2000. An infraction of this rule is a violation of a device operation conditions and may be dangerous to human lives as well as damage other devices!

[8PWR] Warranty

The manufacturer guarantees normal operation of the product within 24 months from the date specified on the warranty sticker 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 for 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, plugging a device into power supply networks with invalid parameters, absence of grounding, etc. (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 a voltage bigger than an allowable voltage range by the Ethernet standard has been supplied to the ports of a device.