[Docs] NetPing 2/PWR-220 v3/ETH & NetPing 2/PWR-220 v4/SMS

[ENG] NetPing 2/PWR-220 v3/ETH & NetPing 2/PWR-220 v4/SMS, Firmware description

[ENG] 1. [DKSF 52/202.10 IU] Introduction

About What Is This Document?

This document describes a functionality of the firmware DKSF 52/202.10.X for the devices: NetPing 2/PWR-220 v3/ETH, NetPing 2/PWR-220 v2/SMS.

Devices NetPing 2/PWR-220 v3/ETH, NetPing 2/PWR-220 v2/SMS with the firmware of the DKSF 52/202.10.X version support the next management interfaces:

- HTTP (web interface);
- SNMP v1;
- URL encoded HTTP commands;
- SMS commands (for the model NetPing 2/PWR-220 v2/SMS with a built-in GSM modem)

A description of settings and the operation order with these management modes are provided in this document.

A description of physical characteristics of a device, its controls, and indicators, as well as the connection order of a device, and external sensors are provided in the user guide for the devices NetPing 2/PWR-220 v3/ETH, NetPing 2/PWR-220 v2/SMS.

The user guide can be studied via the link: [ENG] Netping 2/PWR-220 v3/ETH, User guide.

Developer and manufacturer:

NetPing east Co Ltd.

[ENG] 2. [DKSF 52/202.10 IU] Getting Basic Information about a Device

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[ENG] 2.1. [DKSF 52/202.10 IU] Default Username and Password

A default username and password for connecting to a device web interface are as follows:

- Login: visor
- Password: ping

This information is written on the bottom side of a device:

NetPing 2/PWR-220 v2/SMS

SN: 467 252 224

IP:192.168.0.100 Login:visor Password:ping

4 712876 170133

input: 100-240V AC, 50/60 HZ

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[ENG] 2.2. [DKSF 52/202.10 IU] How to Find Out a Default IP Address and a MAC Address of a Device?

A default IP address is specified on the bottom of a device:
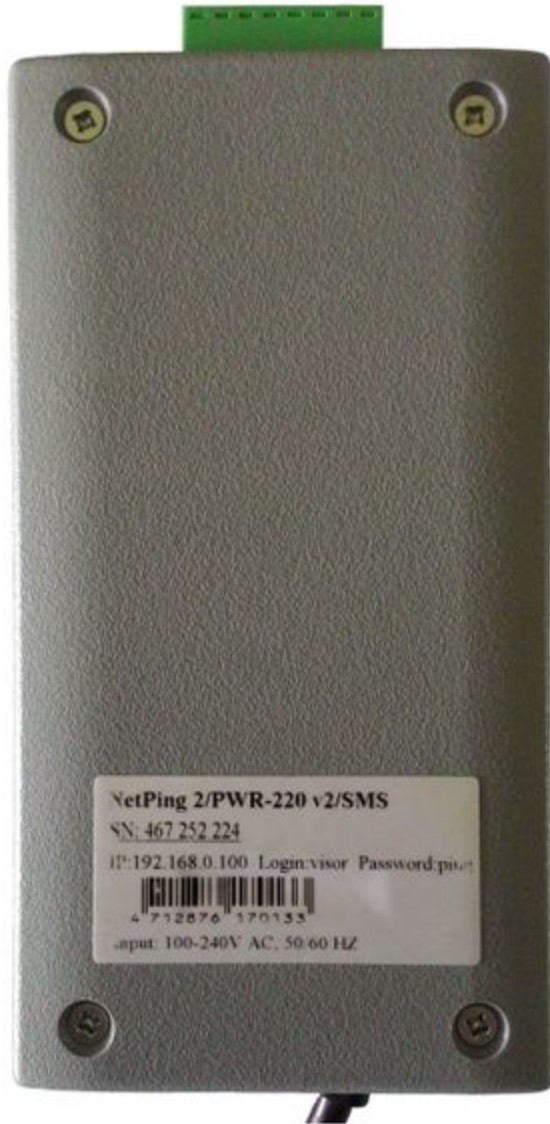
A default IP address of a device is 192.168.0.100

A MAC address of a device can be found on the home page of a device web interface:

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HOME | SETUP | E-MAIL | RELAYS | WATCHDOG | SCHEDULE 1 | SCHEDULE 2
TEMPERATURE | HUMIDITY | DISCRETE IO | IR COMMANDS | LOGIC | FIRMWARE | LOG

DEVICE IDENTIFICATION

Hostname	NetPing-2-PWR-220-v3-ETH
Location	Taiwan office
Contact	sp@netping.ru
Serial Number	000 065 529
MAC Address	00:a2:f9:ff:00:00
Device Model	2/PWR-220v3/ETH
Firmware Version	v52.10.8.E-1
Hardware Version	1.6
Uptime	0d 4h 24m 55s

NETWORK SETTINGS

IP Address	192.168.0.24
Netmask	255.255.255.0
Gateway	192.168.0.1

Reboot

where:

MAC Address – is a unique physical address of a device in the Ethernet network.

[ENG] 2.3. [DKSF 52/202.10 IU] Connecting a Device with a Default Authorization to a Web Interface

Web Interface

A web interface is used to manage a device. To connect to a device and configure its parameters, there is a need to enter and IP address of a device in the address bar of a browser:
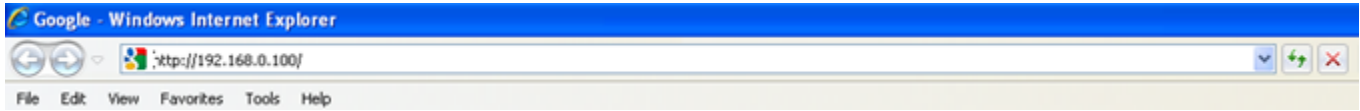
> When working in Internet Explorer, web interface operation speed can be decreased. It is recommended to use the latest version of Google Chrome.

Use a command ping from a command line to check a connection with a device:

ping 192.168.0.100

> IP address of a computer should be in the same subnetwork with an IP address of a device! For example, if a device has an IP address 192.168.0.100, then a computer should have address 192.168.0.11 mask 255.255.255.0

AUTHENTICATION

While connecting, a device will request authentication by entering login and password.

On default:

- Address for connecting to a device: http://192.168.0.100/;
- User: visor;
- Password: ping
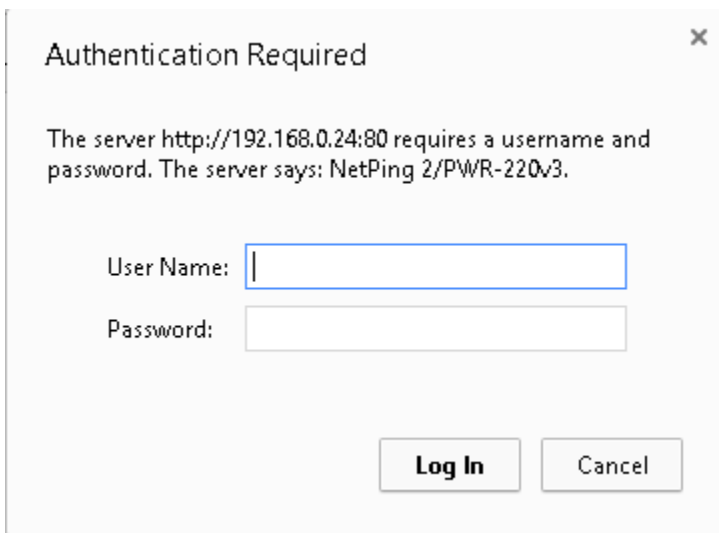
> Make sure that a device responds to ping 192.168.0.100 after the first device activation as well as after resetting its parameters.

> It is prohibited to use non-ASCII characters ("№", "®", "«" and others, as well as any Cyrillic character) in a username and a password. Otherwise, authentication issues may arise in a web interface in browsers except Google Chrome.

[ENG] 2.4. [DKSF 52/202.10 IU] I Need to Know the Firmware and Hardware Versions and a Serial Number of a Device

The information about the firmware and hardware versions and a serial number of a device can be found on the home page of a device web interface:

where:

Firmware Version – is a current firmware version installed in a device.

A number of a firmware version looks like this: DKSF PPP.VV.SS.C-M (for example, DKSF 202.10.2.A-1), where:

- DKSF – is a specific prefix for all firmware of the company NetPing global Ltd.;
- PPP – is a number of a model of a device for which the firmware is designed

Project numbers usually but not necessarily coincide with the project number of the hardware platform of a device.

- VV – is a version number. Versions are numbered starting from 1. A version number is changed to the next one if in the process of development functionality is expanded or changed significantly;
- SS – is a subversion number. A subversion number is changed from any firmware update, including fixing errors, updating internal modules, and optimization;
- C – is a character that shows a type of the software version. R or A is a stable Russian software version, B is a version for testing or the first version of new firmware. E is a stable English firmware version;
- M – is a numeric suffix that marks the modification (variant) of a model of a device for which the firmware is designed.

Hardware Version – is a version of a printing board and/or configuration of the device.

Serial Number – is a unique identification number of a device. It must coincide with a number on a sticker on the device. A serial number of a device cannot be changed.

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[ENG] 2.5. [DKSF 52/202.10 IU] How to See the Uptime?

The uptime of a device can be found on the home page of a device web interface:

where:

Uptime – is the time of equipment operation from the moment of the last activation or rebooting of a device.

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[ENG] 2.6. [DKSF 52/202.10 IU] Where to Find the Hostname, Location and Contact of a Device?

The name of a device, location, and contact information can be found on the home page of a device web interface:

where:

Hostname – is a domain name of a device. It allows distinguishing between several NetPing devices of the same type by their hostnames. A hostname is displayed on the homepage and in the heading of a web interface, it is sent in notifications and available via SNMP.

Location – a description of the installation place of a NetPing device. It is displayed on the homepage and in the heading of a web interface, and is available via SNMP.

Contact – is the contact data (usually an e-mail) of an administrator. It is displayed on the home page and is available via SNMP.

All three variables can be set (changed) on the web-interface SETUP page.

For more advanced users, the basic access option is using the SNMP v1 protocol by reading the corresponding OID using the command Get:

OID	Name	Type	Access	Description
.1.3.6.1.2.1.1.5.0	sysName	DISPLAYSTRING (SIZE (0..255))	READ/WRITE	Domain name of a device.
.1.3.6.1.2.1.1.6.0	sysLocation	DISPLAYSTRING (SIZE (0..255))	READ/WRITE	Location of a device.
.1.3.6.1.2.1.1.4.0	sysContact	DISPLAYSTRING (SIZE (0..255))	READ/WRITE	Contact.

[ENG] 2.7. [DKSF 52/202.10 IU] How to Reboot a Device?

A NetPing device can be rebooted in two ways:

1. Click the button «Reboot» at the home page of a web interface of a device.
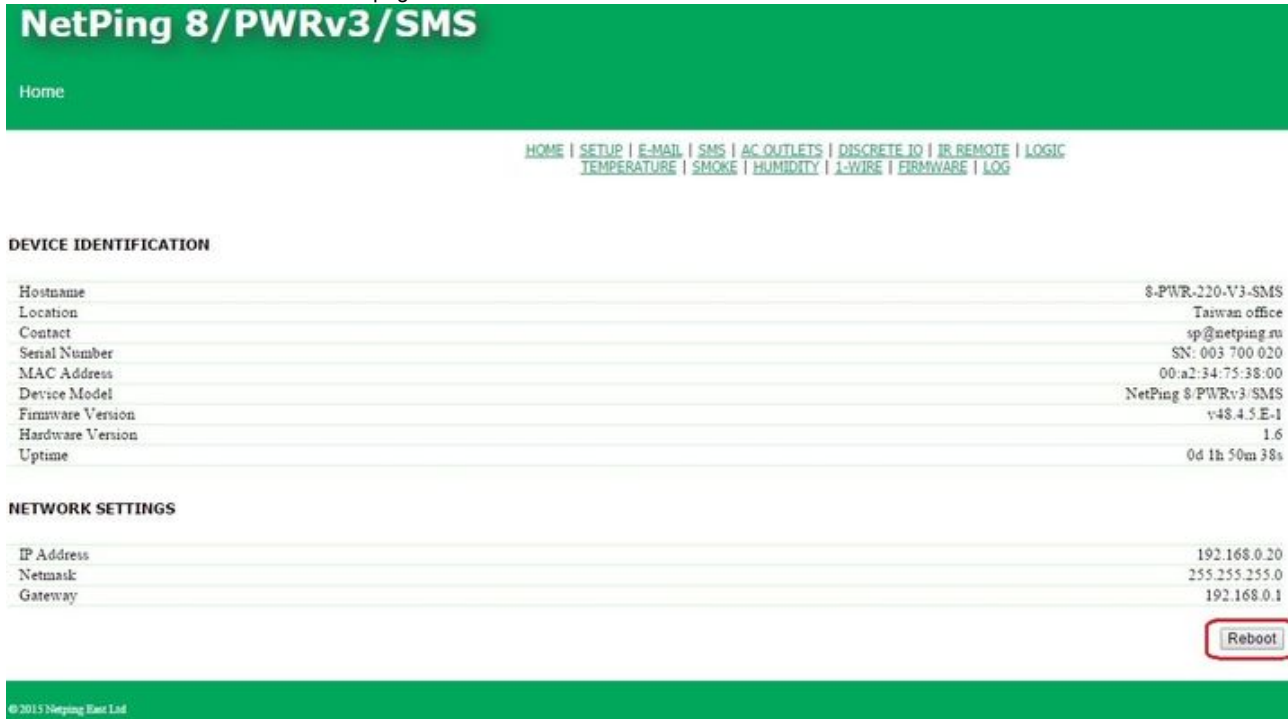
Afterward, a system will display an informational notification confirming a device reboot.
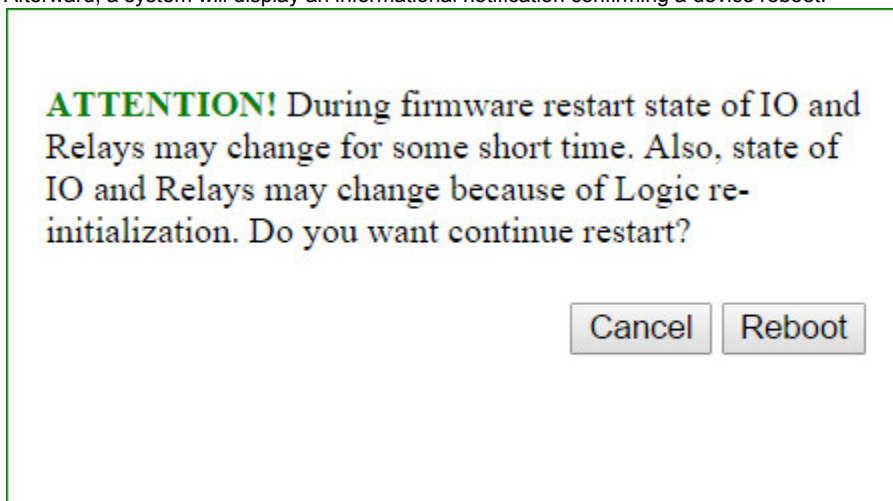
After clicking the button «Continue» CPU LEDs near Ethernet ports will blink and a device will reboot. Its uptime will be reset to 0d 0h 0m 0s.

2. Use an SNMP v1 protocol by specifying OID values using the command Set:

OID	Name	Type	Access	Description
.1.3.6.1.4.1.25728.911.1.0	npSoftReboot	Integer	READ/WRITE	Software reboot of a device when writing the value«1» (an analog for rebooting a device through a web interface)
.1.3.6.1.4.1.25728.911.3.0	npForceReboot	Integer	READ/WRITE	A forced immediate reboot of a device when writing the value «1» (a processor is reset the same as when turning a power supply on)

[ENG] 3. [DKSF 52/202.10 IU] Basic Configuration

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[ENG] 3.1. [DKSF 52/202.10 IU] How to Configure a Hostname, a Location and Contact?

To configure a name and a location of a device as well as its contacts, there is a need to go to the page «Setup» of a web interface of a device:

In the section «Device Identification» it is possible to configure:

Device Hostname – is a domain name of a device. It allows distinguishing among several NetPing devices of the same type according to a name. A name is represented on the homepage and in the heading of a web interface, in an e-mail notification in the field «From:», in other notifications and available via SNMP – sysName. On default: empty line

Device Location – is a description of a place of installation of a Netping device. It is displayed on the home page and in the heading of a web interface, is available via SNMP – sysLocation. On default: empty row

Contact – is the administrator's contacts (usually, an e-mail). This information is available via SNMP – sysContact. On default: empty row

After configuring all necessary parameters, click the button «Apply changes».

In addition, it is possible to configure these parameters using an SNMP v1 protocol by setting OID values using the command Set:

OID	Name	Type	Access	Description
.1.3.6.1.2.1.1.5.0	sysName	DISPLAYSTRING (SIZE (0..255))	READ/WRITE	A domain name of a device.
.1.3.6.1.2.1.1.6.0	sysLocation	DISPLAYSTRING (SIZE (0..255))	READ/WRITE	A location of a device.
.1.3.6.1.2.1.1.4.0	sysContact	DISPLAYSTRING (SIZE (0..255))	READ/WRITE	Contacts.

[ENG] 3.2. [DKSF 52/202.10 IU] Where to Change Settings of a Network Interface?

To change network interface parameters, such as an HTTP port, a server and an SNMP agent, there is a need to go to the page «Setup» of a device web interface:

NETWORK SETTINGS

IP Address	192.168.0.29
Netmask	255.255.255.0
Gateway	192.168.0.1
DNS Server	8.8.8.8
Embedded HTTP Server Port	80
SNMP Agent Port	161

Apply Changes

In the section «Network Settings» it is possible to configure:

IP Address – is a field for setting up or changing an IP address of a device. On default: 192.168.0.100

Netmask – is a field for setting up or changing a subnet mask, where the devices are. On default: 255.255.255.0

Gateway – is a field for setting up or changing an IP address of a gateway. The value 0.0.0.0 means a gateway is not specified and packages for other subnetworks will not be sent by a device. On default: 0.0.0.0

> A device will send any outgoing packages to a gateway address. Therefore, there is a need to specify an IP address of a gateway properly if there is a need to work with a device from other subnetworks.

DNS server – is a DNS server address. The value 0.0.0.0 means a DNS server is not specified, and a device will not send DNS requests. On default: 0.0.0.0

> A DNS server must use a recursive method. Cyrillic domain names are not supported. Domain names longer than 62 symbols are not supported either.

A DNS module works independently from other firmware modules. A DNS module saves responses from a DNS server into a DNS-cache of a device. Other firmware modules use this cache to determine an IP address, where a package needs to be sent. A request is not sent directly before sending a DNS package. If there is no correspondent entry in a DNS-cache in the moment of sending a package, then an outgoing package is discarded. A DNS cache size coincides with the number of hostnames (IP addresses) specified in the settings of a device.

Domain names are resolved and renewed in the next cases:

- Firmware start and restart;
- Saving settings through a web interface (if a domain name is changed);
- A life timeout of a DNS record, specified in the response from a DNS server

When a lifetime of a cache entry is expired, the entry is not removed from a cache. A device updates an expired entry from time to time. Other firmware modules use an outdated information until the entry is successfully updated.

If a DNS server does not respond, a device repeats its request three times. Afterwards, it repeats the request periodically nearly once a minute if there is still no response from a server. The requests are repeated when there is no server response and if there is an error in a server response, including the error «no such hostname».

HTTP Server Port – is a field for configuring a port number, through which an embedded web interface operates. When connecting through a web browser to a device with a port number different from 80, there is a need to indicate the URL of the following appearance: http://x.x.x.x:nn, where x.x.x.x – is an IP address of a device, nn – is a port number, specified in settings of a device. On default: 80

SNMP Agent Port – is a field for configuring a UDP port number, which an SNMP agent listens to. On default: 161

After setting all necessary parameters, click the button «Apply changes».

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[ENG] 3.3. [DKSF 52/202.10 IU] Changing a Username and a Password

To change a username and a password, there is a need to go to the web page «Setup» of a web interface of a device:

ACCESS RESTRICTIONS

Username	visor29
Password	••••••
SNMP Community for Read	ping29
SNMP Community for Write	ping29
IP Filter (access granted for this subnet)	0.0.0.0
IP Filter Netmask (0.0.0.0 - disable filter)	0.0.0.0

Apply Changes

In the section «Access Restrictions» it is possible to configure the following:

Username – is a field for setting up or changing a username when accessing a device through a web interface. Latin letters and numbers are used. Its maximum size is 16 symbols. On default: visor

Password – is a field for setting up or changing a user's password when accessing a device through a web interface. Latin letters and numbers are used. Its maximum size is 16 symbols. On default: ping

After setting up all necessary parameters, click the button «Apply changes».

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[ENG] 3.4. [DKSF 52/202.10 IU] How to Set Community for SNMP?

To configure Community, there is a need to go to the web page «Setup» of a device web interface:

ACCESS RESTRICTIONS

Username	visor29
Password	••••••
SNMP Community for Read	ping29
SNMP Community for Write	ping29
IP Filter (access granted for this subnet)	0.0.0.0
IP Filter Netmask (0.0.0.0 - disable filter)	0.0.0.0

Apply Changes

In the section «Access Restrictions» it is possible to configure:

Community for Read – is a field for setting up or changing Community for read parameters of a device when accessing a device via an SNMP protocol. Its maximum size is 16 characters. On default: SWITCH

Community for Write – is a field for setting up or changing Community for write parameters of a device when accessing a device via an SNMP protocol. Its maximum size is 16 characters. On default: SWITCH

After setting up all necessary parameters, click the button «Apply changes».

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[ENG] 3.5. [DKSF 52/202.10 IU] How to Restrict the Access to a Device?

To restrict the access to a device via HTTP and SNMP protocols, there is a need to go to the web page «Setup» of a device web interface:

ACCESS RESTRICTIONS

Username	visor29
Password	••••••
SNMP Community for Read	ping29
SNMP Community for Write	ping29
IP Filter (access granted for this subnet)	0.0.0.0
IP Filter Netmask (0.0.0.0 - disable filter)	0.0.0.0

Apply Changes

In the section «Access Restrictions» it is possible to configure the following:

IP Filter – is a field determining an IP address or a subnetwork, from which it is allowed to configure and view parameters of a device via HTTP, SNMP protocols. A subnet mask specified in the field «IP Filter Netmask» is applied to the address indicated in the field «IP filter». As a result, there is a subnetwork, from which is it allowed to control a device. To allow the access for one IP address, there is a need to specify a mask 255.255.255.255 in the field «IP Filter Netmask». On default: 0.0.0.0

IP Filter Netmask – is a field for setting up or changing an IP filter netmask to access a device. Its value 0.0.0.0 means an access filter is disabled. On default: 0.0.0.0

> A device will still respond to an ICMP request (ping) from any address even when access filters are specified.

After setting up all necessary parameters, click the button «Apply changes».

[ENG] 3.6. [DKSF 52/202.10 IU] There Is a Need to Send SNMP Trap Notifications. How to Configure This?

IP addresses for sending SNMP TRAP notifications are configured at the page «Setup» of a device web interface. This group of settings allows configuring up to two addresses, where SNMP TRAP notifications will be sent via an SNMP protocol.

Events for these notifications to be sent are specified at other pages of a device web interface.

SNMP TRAP

SNMP Trap Destination #1	
SNMP Trap Destination #2	

Apply Changes

In the section «SNMP TRAP» it is possible to configure the following:

SNMP Trap Destination #1 - is a field for configuring or changing the first address, where SNMP TRAP notifications will be sent. It is possible to specify an IP address or a domain name. An empty field means SNMP TRAP notifications will not be sent. On default: address is not specified

SNMP Trap Destination #2 – is a field for configuring or changing the second address, where SNMP TRAP notifications will be sent. It is possible to indicate an IP address or a domain name. An empty field means SNMP TRAP notifications will not be sent. On default: address is not specified

After configuring all necessary settings, click the button «Apply changes».

[ENG] 3.7. [DKSF 52/202.10 IU] How to Set the Clock?

SETTING THE CLOCK MANUALLY

To set the clock manually, there is a need to go to the page «Setup» of a device web interface:

EMBEDDED CLOCK (RTC)

| Current Date and Time | 22.05.2015 04:04:24 |
| New Date and Time (14 digits, format DDMMYYYYHHmmSS without spaces, 24h) | |

Set Clock

In the section «Embedded Clock (RTC)» it is possible to view and set up the following:

Current Date and Time – is a field for viewing a current time.

New Date and Time (14 digits, format DDMMYYYYHHmmSS without spaces) – is a field for setting a clock manually.

After the clock is set, click the button «Set Clock».

TIME SYNCHRONIZATION WITH EXTERNAL NTP SERVERS

There is a need to go to the page «Setup» of a device web interface to set up a synchronization with external NTP servers.

This group of parameters allows setting NTP servers (time servers) for a device. A device will set and adjust its internal clock according to them. It is possible to set up to two NTP servers. If the first NTP server is unavailable, a device will try to synchronize time using the second NTP server. It is possible to check a correctness of a configuration by generating an event and viewing its time log, in a log file at the page «Log».

NTP SETUP

NTP Server #1	ntp.netping.ru
NTP Server #2	
Timezone (-12..12)	8
Daylight Saving Time (DST)	☐

Apply Changes

In the section «NTP Setup» it is possible to configure the following:

NTP Server #1 – is a field to view or change the address of the first NTP server. It is allowed to indicate an IP address or a domain name. An empty field disables the feature of a time synchronization. On default: address is not specified

NTP Server #2 – is a field to view or change the address of the second NTP server. It is allowed to indicate an IP address or a domain name. An empty field disables the feature of a time synchronization. On default: address is not specified

Timezone – is a field to view or change a local timezone. A positive or a negative number of offset hours from UTC is set. On default: 3

You are welcome to use freely available NTP servers on the Internet as NTP servers, for example, the ones from http://www.pool.ntp.org/en/, particularly:

- 0.europe.pool.ntp.org
- 1.europe.pool.ntp.org
- 2.europe.pool.ntp.org
- 3.europe.pool.ntp.org

A device must have a properly configured gateway and an Internet connection via an NTP protocol to use NTP servers from the Internet.

After setting up all necessary parameters, click the button «Apply changes».

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[ENG] 3.8. [DKSF 52/202.10 IU] Now to Increase the Time of Stand-Alone Operation of a Device?

Information in the section applies to the device NetPing 2/PWR-220 v2/SMS with a built-in battery.

To increase a stand-alone time of a device, there is a need to go to the page «Setup» of a device web interface.

In the area «Powersaving» check a checkbox «Disable Ethernet if powered from Battery (after notifications have been sent)»:

POWERSAVING

Disable Ethernet if powered from Battery (after notifications have been sent)

Apply changes

When a main 220 V power supply is cut off, the NetPing device will send a corresponding notification and disable its Ethernet ports. When a power supply is restored, Ethernet ports will be turned on again.

[ENG] 3.9. [DKSF 52/202.10 IU] I Want to Configure SYSLOG. How to Do This?

Transfer of notifications to the SYSLOG server is configured at the page «Setup» of a device web interface.

> Events, according to which these notifications will be sent, are set at other pages of a device web interface.

SYSLOG

Syslog Address	
Syslog Facility	16
Syslog Severity	5

Apply Changes

In the section «SYSLOG» it is possible to configure the following:

SysLog Address – is an IP address of the SYSLOG server. A log file of a device will be duplicated completely on the SYSLOG server.

Syslog Facility – is a type of programs, for which logging is maintained.

Syslog Severity – indicates the urgency of notifications (from emergency to debugging).

After setting up all necessary parameters, click the button «Apply changes».

[ENG] 3.10. [DKSF 52/202.10 IU] How to Get Notifications and Reports via Email?

To configure the module for sending e-mail notifications and reports about a status, there is a need to go to the page «E-MAIL» of a web interface. The equipment sends notifications using an SMTP protocol.

> Events, on which e-mail notifications will be sent, are set at other pages of a device web interface.

where:

Enable Sending of E-mail – when unchecking the checkbox a device will not send e-mail notifications. This was designed, first of all, to handle maintenance in a server room, as well as the one of the equipment. On default: checkbox is not checked

SMTP Server Address – is an email address for an incoming mail. On default: empty line

SMTP Server TCP Port – is an email server port, which works via an SMTP protocol. On default: 25

Username – is a username of an SMTP server. On default: empty line

Password – is a password of an SMTP server user. On default: empty line

From – a sender's address. On default: empty line

To – a destination address for e-mail notifications. On default: empty line

Copy To (cc:) – addresses of secondary recipients for e-mail notifications, to whom a copy is sent. On default: empty line

Time for Summary Reports (HH:MM 24h format, up to 12 time points, divided by space) – is a time when reports on a status of sensors will be sent via e-mail. On default: empty line

After setting the parameters, click the button «Apply changes».

It is possible to add displaying of a name of a device to an e-mail notification. The way how to do this is described on the page «3.1. [DKSF 52/202.10 IU] How to Configure a Hostname, a Location and Contact?»

> A device can work only with the email servers that support an SMTP protocol and authentication methods AUTH PLAIN and AUTH LOGIN, as well as the method with no authentication method! At the same time, a device cannot support SSL, TLS or another encoding!

[ENG] 3.11. [DKSF 52/202.10 IU] How to Update Firmware in the Device?

There is a need to do the following to update an embedded firmware version:

1. Download an up-to-date firmware from the official website of the company (section «Downloads»): http://www.netpingdevice.com.

2. Go to the page «Firmware» of a device web interface. You can easily update the firmware of a device from this page without using any specific software. To do that, you will need a browser supporting HTML 5 API. Google Chrome or Internet Explorer of the 9th version and higher are recommended;

NetPing SMS

Firmware

HOME | SETUP | GSM SETUP | SMS LOG | SEND SMS | AGENTS | VARIABLES | TRAPS | FIRMWARE | LOG

Drop here firmware file with extention .npu

Update Firmware

© 2014 Netping East Ltd
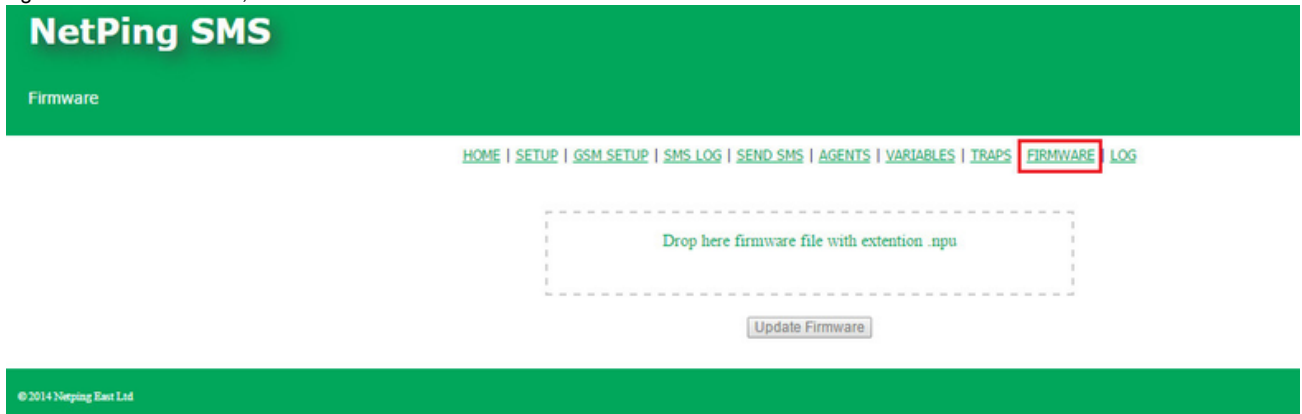
3. Drag a firmware file to the indicated page area;

4. Wait until a firmware file is copied to a device

5. Click the button «Update Firmware»

Wait for the message on a successful operation completion:

Drop here firmware file with extention .npu

DKSF 707.2.1.E.npu

Uploading executable firmware code: 100%

Shift to the new executable code completed successfully

Uploading new web-interface resources: 100%

Firmware update completed successfully!
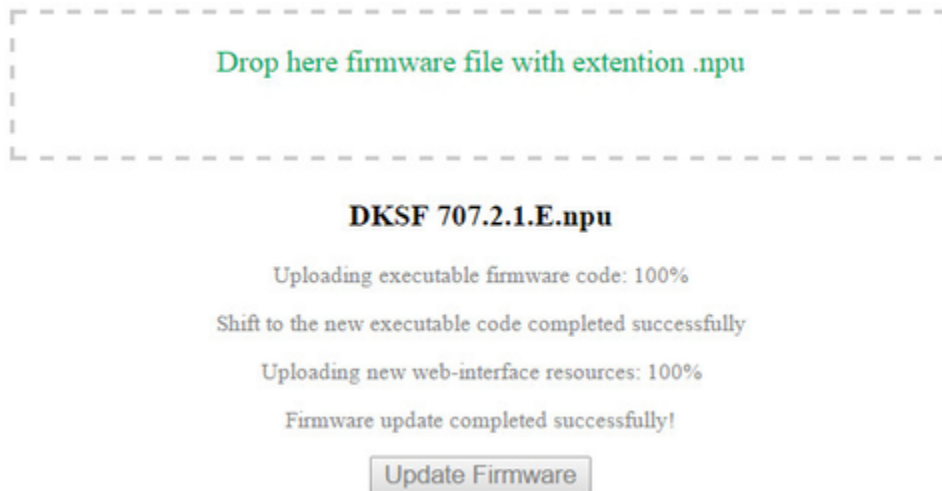
Update Firmware

Retry if an updating process was interrupted. A web interface (pages «Home», «Setup», «Firmware») will be available even if the firmware was not successfully updated.

Certain system settings may be changed after updating. Do not forget to check the most important operation parameters.

[ENG] 3.12. [DKSF 52/202.10 IU] System Log of a Device

The page «Log» of a device web interface represents a device operation. All events are saved in the log in a chronologic order. All notifications of the log are duplicated via SYSLOG protocol if an IP address of SYSLOG server is specified in the settings of a device.

The first time tag in the log is 01.01.70 Mon 00:00: 00.UTC. If an IP address of an NTP server is specified in the settings, a device will try to receive a precise time. If successful, a device will synchronize its internal clock with a precise time. After a time is synchronized in the log, two entries appear that represent a time jump when setting the clock correctly. If the time received when synchronising with an NTP server is different from the time of an internal clock for less than 5 min, its clock is not reset. The pace of internal clock is changed in the way for an internal time to coincide with a precise time received from an NTP server after a while. Therefore, there is no time jumps in the events list in a log, which makes analysing it easier.
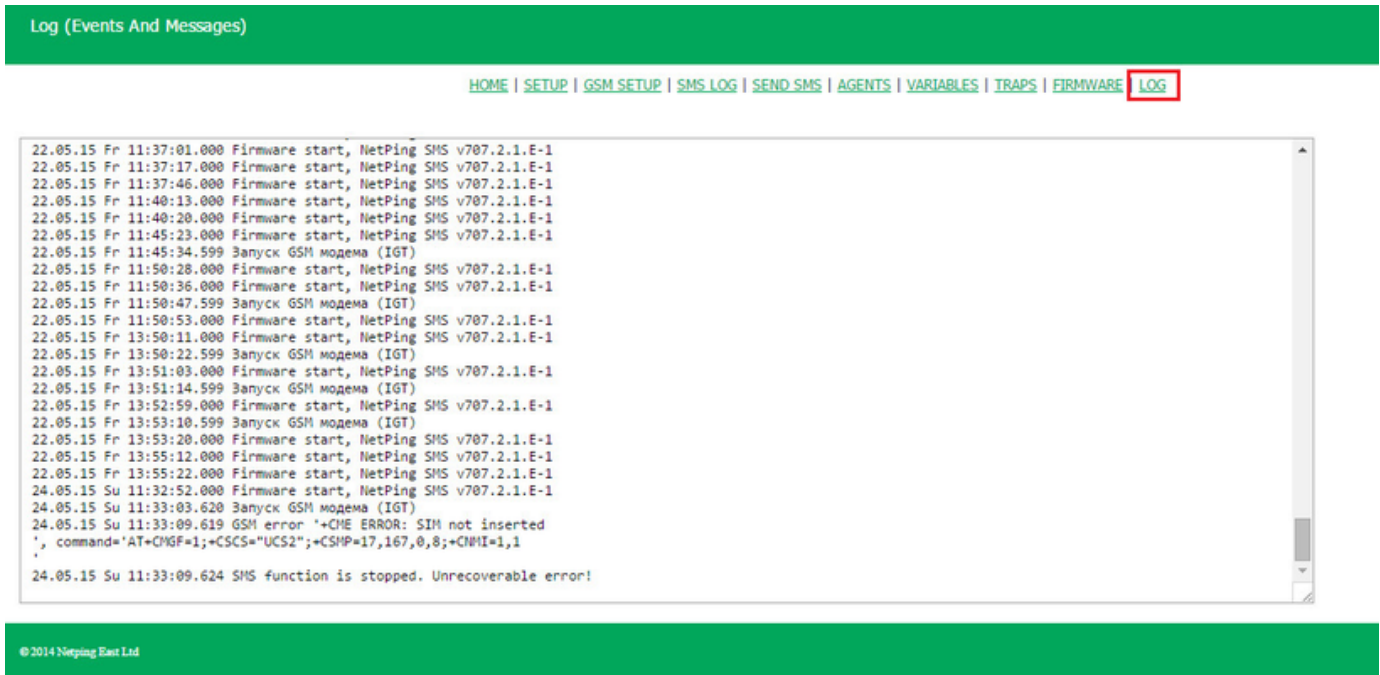
GENERAL EVENTS

Operation Start (Reboot) – is written into the log when a device is turned on.

Clock Reset – is written into the log if a received time from an NTP server is different from an internal time for more than 5 min. The entry is displayed in two rows: the first row has a time tag before resetting an internal clock, and the second one is made just after a reset is made.

EVENTS FROM TEMPERATURE SENSORS

Thermo chan.N "XXXX":normal YYC – is recorded into the log if a mode of sending SNMP TRAP notifications from temperature sensors is configured, and a temperature on a temperature sensor is within the limits set by a user. YY – is a current temperature on a temperature sensor.

Thermo chan.N "XXXX": above normal YYC – is recorded into the log if a mode of sending SNMP TRAP notifications from temperature sensors is configured and a temperature on a temperature sensor is above the upper threshold, set by a user. N – is a number of a temperature sensor. XXXX – is a description of a temperature sensor, specified by a user at the page of a web interface. YY – is a current temperature on a temperature sensor.

Thermo chan.N "XXXX": below normal YYC – is recorded into the log if a mode of sending SNMP TRAP notifications from temperature sensors is configured and a temperature on a temperature sensor is below the lower threshold, specified by a user. N – is a number of a temperature sensor. XXXX – is a description of a temperature sensor, specified by a user at the page of a web interface. YY – is a current temperature on a temperature sensor.

Thermo chan.N "XXXX": failure – is recorded into the log if a mode of sending SNMP TRAP notifications from temperature sensors is configured and a temperature sensor does not respond (is not connected). N – is a number of a temperature sensor. XXXX – is a description of a temperature sensor, specified by a user at the page of a web interface. When a sensor operation is restored, a notification about a status of a temperature range is sent (see above).

EVENTS FROM IO LINES

Input/output: line N "XXXX": 0->1 – is recorded into the log if a mode of sending SNMP TRAP notifications from IO lines is configured, and an IO line has switched from the status «0» to the status «1». N – is a number of an IO line. XXXX – is a description of an IO line, specified by a user at

the page of a web interface.

Input/output: line N "XXXX": 1->0 – is recorded into the log if a mode of sending SNMP TRAP notifications from IO lines is configured and an IO line has switched from the status «1» to the status «0». N – is a number of an IO line. XXXX – is a description of an IO line, specified by a user at the page of a web interface.

EVENTS FROM THE «WATCHDOG» MODULE

Watchdog: resetting chan.N "XXXX". A (IPA) YYYY, B (IPB) YYYY, C (IPC) YYYY – is recorded into the log when the Watchdog is triggered. N – is a number of a power management channel. XXXX – is a description of a power management channel, specified by a user at the page of a web interface. IPA, IPB, IPC – are IP addresses, specified in the settings of the «Watchdog».YYYY – is a status of corresponding requested IP address. It may be: responds, silent, ignores.

Watchdog: chan.N "XXXX". - a limit of repeated resets is reached (Y). Resets are paused. – is recorded into the log if a limit of consequent resets of a connected device is reached in the operating mode «Watchdog». N – is a number of a power management channel. XXXX - is a description of a power management channel, specified by a user at the page of a web interface.Y – is an amount of consequent resets of a connected device that has been performed.

Watchdog: chan.N "XXXX" reset. - a response is received. Resetting pause is over.

SYSLOG SUPPORT

All notifications in the log are duplicated by sending notifications via SYSLOG protocol if addresses of SYSLOG server are specified in the settings of a device at the page «Setup» of a web interface.

SYSLOG server is convenient to use for centralized collecting of notifications about events that take place at numerous devices and computers, operating in the network, particularly about the events at Netping devices.

[ENG] 3.13. [DKSF 52/202.10 IU] Backup and Restoration of a Device Configuration

Saving a Configuration

To save a backup copy of a set configuration of a device into a binary file, there is a need to go to the page «SETUP» of a device web interface. In the section «Backup, Restore, Clone All Settings», click the button «Download»:

BACKUP, RESTORE, CLONE ALL SETTINGS

Operations with image file of all settings	Download	Upload
Status		-
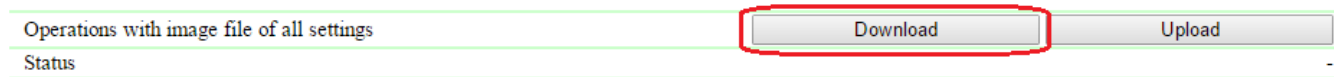
Afterward, a file with settings with the extension .bin will appear on the local PC disk, for example, USS-001-125-ServerRoom-1_setup.bin (before the underscore in the name of a file, a name of a device is substituted that is configured on the page «SETUP» of a web interface).

Restoring a Configuration

To download a backup copy of a set configuration from a binary file to a device, there is a need to go to the page «SETUP» of a device web interface. In the section «Backup, Restore, Clone All Settings» click the button «Upload»:

BACKUP, RESTORE, CLONE ALL SETTINGS

Operations with image file of all settings	Download	Upload
Status		-
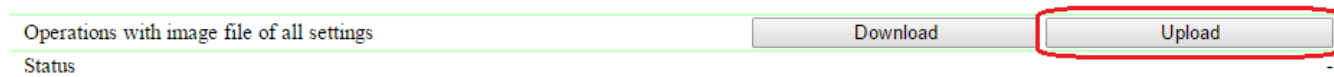
Afterward, there is a need to choose a necessary file of the .bin format to upload a configuration. A successful uploading is followed by the displaying the status «Uploading of settings completed successfully» with the following rebooting of a device:

Status	Uploading of settings completed succesfully.

When uploading a binary file, the next parameters are not restored:

- Hostname;
- IP address;
- Subnet mask;
- Gateway;
- HTTP server port

These parameters are necessary to be configured manually.

Before uploading a configuration into EEPROM, the identity of «donor» and «acceptor» versions is checked. If a «donor» version is not suitable, uploading is not performed, and the error message is displayed: «The image of settings is not compatible!».

[ENG] 3.14. [DKSF 52/202.10 IU] How to Disable Notifications at Initialization After Firmware (Re)Start?

To disable notifications at the initialization of a device after firmware start or restart, there is a need to go to the page «SETUP» of a device web interface and check a checkbox «Disable notifications at initialization after firmware (re)start» in the section «NOTIFICATIONS» and click the button «Apply changes»:

NOTIFICATIONS

Skip notifications just after Firmware (re)start

Apply Changes

Activation of this setting stops sending notifications about the status of IO lines during firmware start. when the status of a line changes from indefinite to 0 or 1.

[ENG] 4. [DKSF 52/202.10 IU] Working with Temperature Sensors

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[ENG] 4.1. [DKSF 52/202.10 IU] What Temperature Sensors a Device Supports?

A device supports a simultaneous connection of T811 temperature sensors. Readings of sensors automatically appear in a web interface 15 seconds after a connection. Temperature values and temperature sensor statuses are updated automatically nearly four times a minute with no need to reload a web page manually.

> A device does not support 1-Wire temperature sensors.

It is possible to plug up to 8 temperature sensors to a device.

[ENG] 4.2. [DKSF 52/202.10 IU] Where to Browse a Current Temperature?

To see a current temperature of temperature sensors, there is a need to go to the page «TEMPERATURE» of a device web interface:

Temperature values and sensor statuses are updated automatically not less than four times a minute with no need to reload a page manually.

Current Temperature, °C – displays a current temperature of a sensor in degrees of Celcius. A temperature value is automatically updated from time to time without reloading a web page.

Status – displays a current status of a temperature sensor. Possible values are:

- Failure – a temperature sensor is not connected or does not respond;
- Normal – a temperature sensor responds, and a temperature value is within the limit of a specified range for this temperature sensor;
- Above normal – a temperature sensor responds, and a temperature value is above a specified range for this temperature sensor;
- Below normal – a temperature sensor responds, and a temperature value is below a specified range for this temperature sensor.

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[ENG] 4.3. [DKSF 52/202.10 IU] Is It Possible to Set a Description for Temperature Sensors?

To set a description for temperature sensors, there is a need to go to the page «TEMPERATURE» of a device web interface:

Thermo Sensors								8-PWR-220-V3-SMS Taiwan office

HOME | SETUP | E-MAIL | SMS | AC OUTLETS | DISCRETE IO | IR REMOTE | LOGIC
TEMPERATURE | SMOKE | HUMIDITY | 1-WIRE | FIRMWARE | LOG

Parameter	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Sensor 5	Sensor 6	Sensor 7	Sensor 8
Memo (up to 16 chars)								
Unique Id of 1W sensor								
Current Temperature, °C	0	0	0	0	0	0	0	0
Status	sensor fault	sensor fault	sensor fault	sensor fault	sensor fault	sensor fault	sensor fault	sensor fault
Top Margin of Safe Range, °C	60	60	60	60	60	60	60	60
Bottom Margin of Safe Range, °C	10	10	10	10	10	10	10	10
Notification	Setup	Setup	Setup	Setup	Setup	Setup	Setup	Setup

Apply Changes

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A description for temperature sensors is set in the field «Memo».

Memo – is a field for setting a brief description of a temperature sensor. A memo is used in SYSLOG and log notifications, and is also included into SNMP TRAP, SMS, e-mail notifications, email reports about a status of sensors. Its maximum size is 16 characters. On default: empty line

After changing the settings, there is a need to save the parameters by clicking the button «Apply changes».

[ENG] 4.4. [DKSF 52/202.10 IU] Configuring Upper and Bottom Threshold of a Norm of a Temperature Sensor

To configure a top and bottom margin of a safe range for a temperature sensor, there is a need to go to the page «TEMPERATURE» of a device web interface:
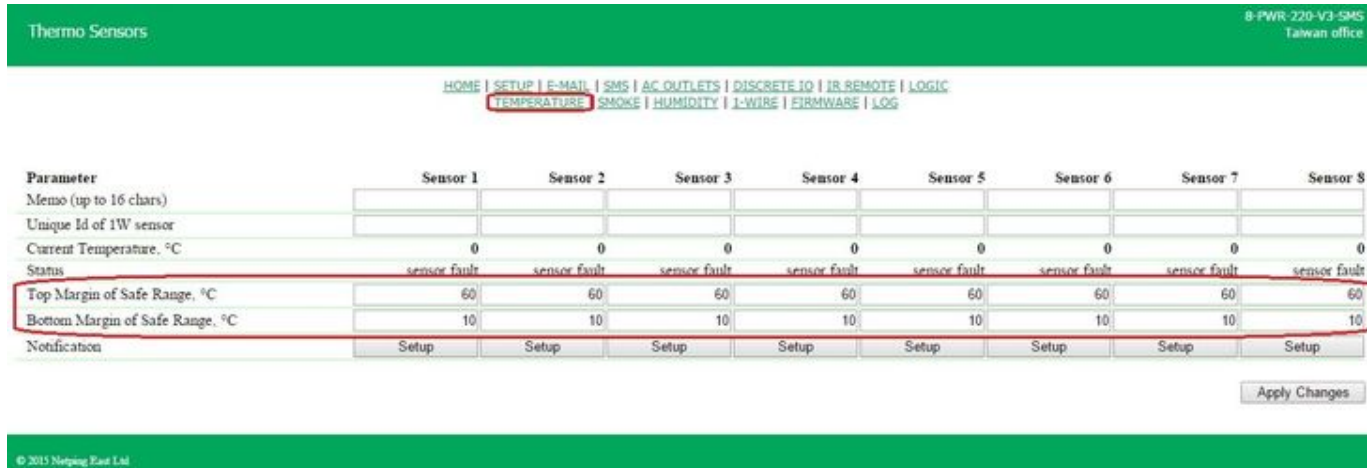
where:

Top Margin of Safe Range, °C – is a field for setting a top margin of a temperature range for each temperature sensor. A temperature range is used to specify conditions for generating SNMP TRAP and Syslog notifications as well as e-mail and SMS notifications (in a device with an embedded GSM modem). On default: 60

Bottom Margin of Safe Range, °C – is a field for setting a bottom margin of a temperature range for each temperature sensor. A temperature range is used to specify conditions for generating SNMP TRAP and Syslog notifications as well as e-mail and SMS notifications (in devices with an embedded GSM modem). On default: 10

> To prevent frequent triggering of a top and bottom margins, a switching hysteresis of 1°C is used.
>
> A hysteresis sets a «corridor» around a specified temperature, within the limits of which top and bottom margins of a safe range do not respond to temperature oscillations. This feature allows to avoid frequent random notifications from a temperature sensor caused by natural spontaneous oscillations of a temperature measured by a sensor. If a current status of a temperature sensor is «above normal», then a threshold for switching a status is a specified temperature minus a hysteresis value. And vice versa, if the current status is «below normal», then a threshold for switching is a specified temperature plus a hysteresis value. As soon as a temperature increases or decreases reaching a threshold value (taking a hysteresis into account), thus leaving margins of a «corridor», a temperature status is changed. Operation logic of hysteresis is explained in the picture below.
>
>
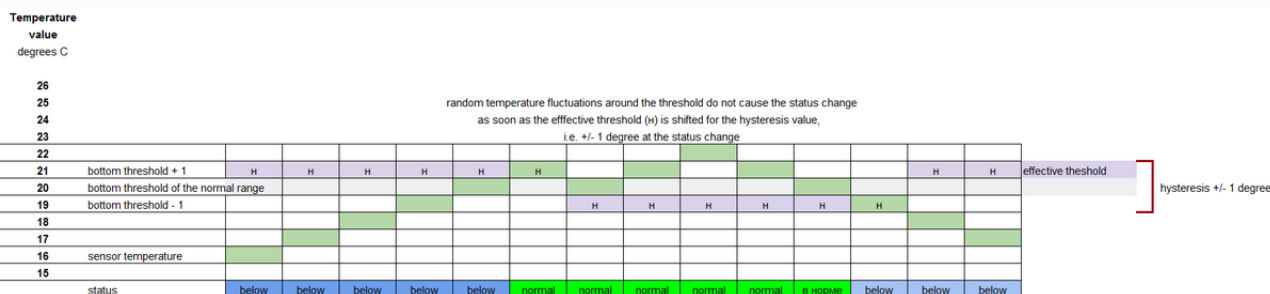
Status – displays a current status of a temperature sensor. Its possible values are:

- Failure – a temperature sensor is not connected or does not respond;
- Normal – a temperature sensor responds and a temperature value is within the margins of a specified range for this temperature sensor;
- Above normal - a temperature sensor responds, and a temperature value is above a specified range for this temperature sensor;
- Below normal - a temperature sensor responds, and a temperature value is below a specified range for this temperature sensor

After changing the settings, there is a need to save the parameters by clicking the button «Apply changes».

[ENG] 4.5. [DKSF 52/202.10 IU] I Want to Configure Sending Notifications When a Status of a Temperature Sensor Is Changed. How to Do This?

Sending notifications when a status of a temperature sensor is changed, is configured at the page «TEMPERATURE» of a device web interface:
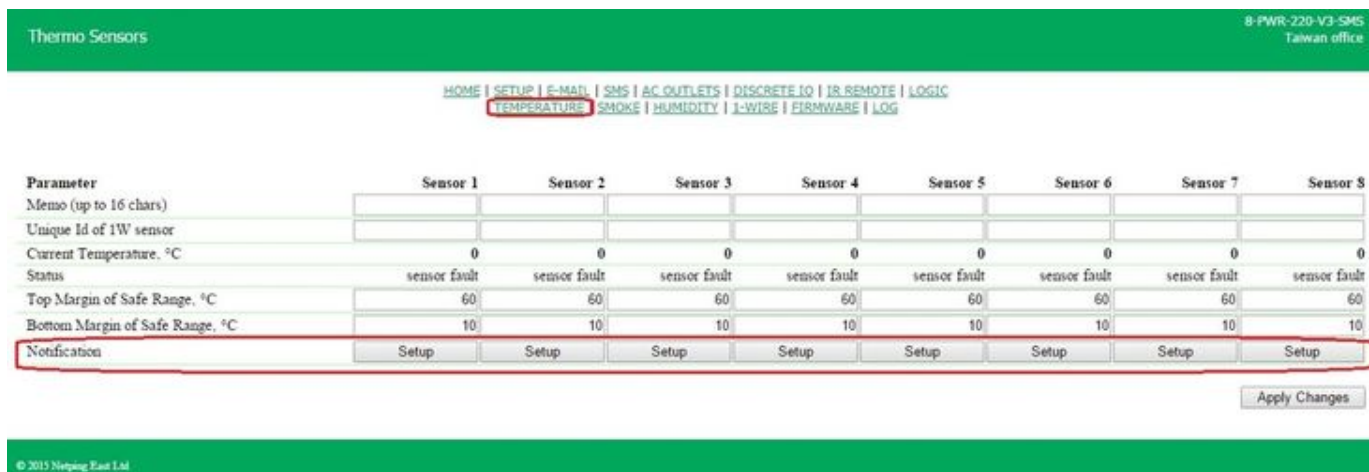
When clicking the button «Configure» a menu of settings is displayed for sending notifications of the following types: Log, Syslog, E-mail, SMS (in devices with an embedded GSM modem) and SNMP Trap:
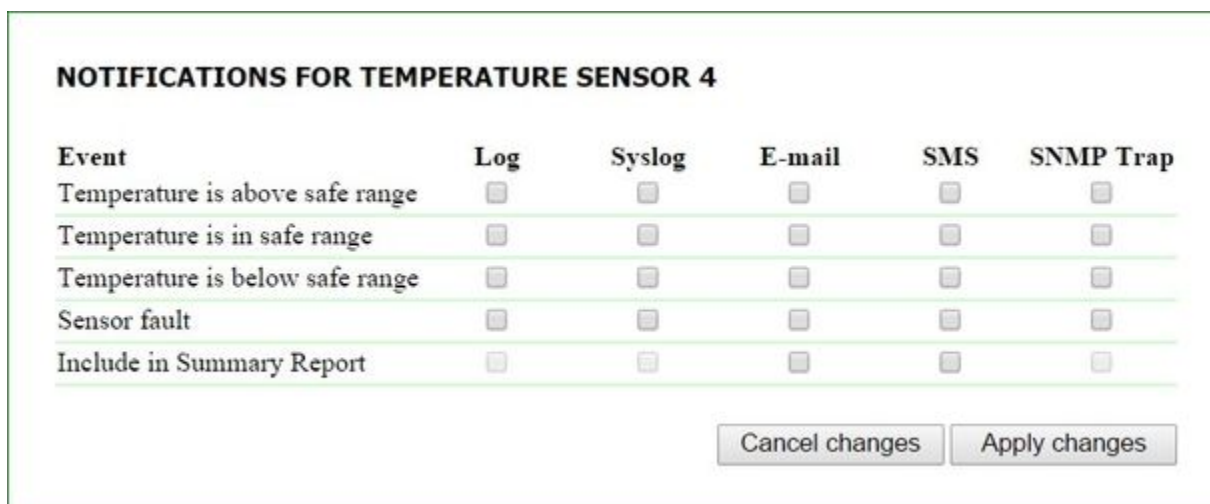
where:

Temperature is above safe range – is a checkbox, when checked a device will send notifications if a current temperature is above a top margin of a safe range for this temperature sensor. On default: checkbox is not checked

Temperature is in safe range – is a checkbox, when checked a device will send notifications if a current temperature is back to margins of a safe range for this sensor. On default: checkbox is not checked

Temperature is below safe range – is a checkbox, when checked a device will send notifications if a current temperature is below a bottom margin of a safe range for this temperature sensor. On default: checkbox is not checked

Sensor fault – is a checkbox, when checked a device will send notification if a connection with a sensor is lost. On default: checkbox is not checked

Include in Summary Report – is a checkbox when checked reports about a sensor status will be sent via e-mail and/or SMS (in a device will an embedded GSM modem). Time of sending reports is indicated at the pages «SMS» and «E-MAIL». On default: checkbox is not checked

After setting all necessary parameters, click the button «Apply changes».

[ENG] 5. [DKSF 52/202.10 IU] Working with a Humidity Sensor

[ENG] 5.1. [DKSF 52/202.10 IU] What Humidity Sensor a Device Supports?

A device supports connecting only WS-2 humidity sensor. Readings of a humidity sensor automatically appear at the page «HUMIDITY» of a web interface several seconds after manual plugging of a sensor into a device. Values of a relative humidity, a temperature, a dew point and a status of a humidity sensor are updated automatically with no need to reload a web page manually.

> A device does not support a 1-Wire humidity sensor.

It is possible to plug only one humidity sensor to a device.

[ENG] 5.2. [DKSF 52/202.10 IU] Browsing Readings and Configuring Parameters of a Humidity Sensor in a Web Interface

To browse readings and configurations of parameters of a humidity sensor, there is a need to go to the page «HUMIDITY» of a device web interface:

Relative Humidity Sensor

HOME | SETUP | E-MAIL | RELAYS | WATCHDOG | SCHEDULE 1 | SCHEDULE 2 | SMS
TEMPERATURE | HUMIDITY | DISCRETE IO | IR COMMANDS | LOGIC | FIRMWARE | LOG

Sensor Status	Sensor failed
Relative Humidity	0 %
Temperature	0.0°C
Dew Point (calculated)	-
Top Margin of Humidity Safe Range	85
Bottom Margin of Humidity Safe Range	5
Notification on Sensor Status change	Setup

Apply Changes

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where:

Sensor Status – determines a status of a sensor in a current moment of time. Possible variants: «Sensor does not work», «within a safe range», «below a safe range», «above a safe range»;

Relative Humidity – are readings of a sensor, which determines a relative humidity, in %;

Temperature – are readings of a temperature sensor, built into a humidity sensor, in °C;

Dew Point – is a dew point, calculated from readings of a humidity sensor and a temperature, in °C;

Top Margin of Humidity Safe Range – is a humidity value, when rising above it, a sensor switches to the status «above a safe range». Hysteresis is ± 1 percent point. On default: 85

Bottom Margin of Humidity Safe Range– is a humidity value, when falling below it, a device switches to the status «below a safe range». Hysteresis is ± 1 percent point. On default: 5

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[ENG] 5.3. [DKSF 52/202.10 IU] I Want to Configure Sending Notifications When Changing a Status of a Humidity Sensor. How to Do This?

Sending notifications when a humidity sensor status is changed is configured at the page «HUMIDITY» of a device web interface:

When clicking the button «Setup» a menu of settings for sending notifications of the next types appears: Log, Syslog, E-mail, SMS (in devices with an embedded GSM modem) and SNMP Trap:
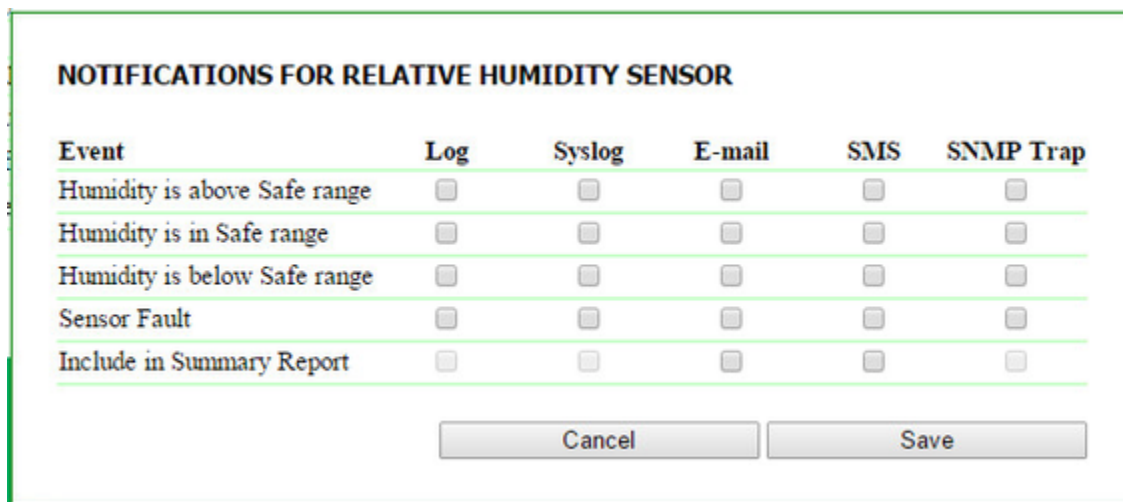
where:

Humidity is above Safe range – is a checkbox, when checked a device will send notifications if a relative humidity is above a top margin of a safe range for a humidity sensor. On default: checkbox is not checked

Humidity is in Safe range – is a checkbox, when checked a device will send notifications if a relative humidity is within margins of a safe range for a humidity sensor. On default: checkbox is not checked

Humidity is below Safe range – is a checkbox, when checked a device will send notifications if a relative humidity is below a bottom margin of a safe range for a humidity sensor. On default: checkbox is not checked

Sensor Fault – is a checkbox, when checked a device will send notifications if a connection with a sensor is lost. On default: checkbox is not checked

Include in Summary Report – is a checkbox, when checked reports about a humidity sensor status will be sent via e-mail and/or SMS (in a device with an embedded GSM modem). A time for sending reports is set at the pages «SMS» and «E-MAIL». On default: checkbox is not checked

After configuring all necessary settings, click the button «Apply changes».

[ENG] 6. [DKSF 52/202.10 IU] Working with a Built-in Relay

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[ENG] 6.1 [DKSF 52/202.10 IU] Configuring Modes of Controlling Relays

The mode of controlling built-in relays is configured on the page «RELAYS» of a device web interface:

Control of Relays

	Relay 1	**Relay 2**
Memo	Connected 8PWR IN1	Connected 8PWR IN2
Source of control	Manual Off ▼	Manual Off ▼
Notification	Setup	Setup
Switch On for short time (5s)	On	On
Switch Off for short time (5s)	Off	Off
Relay state	Off	Off

Apply Changes

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This page allows controlling an outgoing channel (a relay) of the power supply of a device. A channel can be switched off/on for short time, switched to the mode «Manual Off», «Manual On», «Watchdog», «Schedule», «Schedule+Watchdog», «Logic».

Memo – is a field for browsing or changing a short description of a relay. A value in this field will be used in SYSLOG notifications, records on the page «LOG», and is included in SMS, e-mail notifications and e-mail reports about a status of sensors. Its maximum size is 30 characters. On default: empty line

Source of Control – is a status of a relay. It is possible to set the next statuses:

- Manual Off – a relay is constantly switched off;
- Manual On – a relay is constantly switched on;
- Watchdog – a relay is managed by the module «Watchdog»;
- Schedule – a relay is managed by the module «Schedule»;
- Расп+Сторож – a relay is managed by both modules «Schedule», and «Watchdog» simultaneously. The module «Schedule» switches on and off a relay according to the specified schedule. The module «Watchdog» checks the operability of a device in the network (ICMP-request/response). If the module «Watchdog» discovers failure in the operation of a device (no response from the ICMP request), a relay changes its status to the opposite one depending on the settings of the module «Schedule»;
- Logic – a relay is used as a logic output

Switch on for short time (5s) – when clicking the button «Switch on for short time», a corresponding relay will be switched off for 5 seconds.

Switch off for short time (5s) – when clicking the button «Switch off for short time» a corresponding relay will be switched off for 5 seconds.

Relay state – is a current status of a relay. Possible variants are: «Off», «On». A relay status is updated automatically when a relay status is changed with no need to refresh the entire page.

After setting all necessary parameters click the button «Apply changes».

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[ENG] 6.2 [DKSF 52/202.10 IU] I Want to Configure Sending Notifications about the Events on the Triggering of a Relay. How to Do This?

To configure sending notifications for events on triggering an embedded relay, there is a need to go to the page «RELAYS» of a device web interface:

When clicking the button «Setup» a menu of settings for sending notifications on the next directions appears: Log, Syslog, E-mail, SMS (in devices with an embedded GSM modem):

where:

Switching On/Off – is a checkbox, when checked notifications on changing a relay status will be sent.

Include in Summary Report – is a checkbox, when checked reports on a status of an embedded relay will be sent via e-mail and/or SMS.

Time for sending reports is set at the pages «SMS» and «E-MAIL».

After setting all necessary parameters, click the button «Save changes».

[ENG] 7. [DKSF 52/202.10 IU] Working with Channels of Discrete Input-Output

[ENG] 7.1. [DKSF 52/202.10 IU] Is It Possible to Set a Description for an Input-Output Line?

To set a description for an input-output line, there is a need to go to the page «DISCRETE IO» of a device web interface:

Descriptions for IO lines are set in the field «Memo».

Memo – is a field for setting a brief description of an IO line. A memo is used in the SYSLOG and log notifications and is included into SNMP TRAP, SMS, e-mail notifications, e-mail reports about a status of sensors. Its maximum size is 30 characters. On default: empty line

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[ENG] 7.2. [DKSF 52/202.10 IU] Configuring the Operation Mode of an Input-Output Line

To set an operation mode of an IO line, there is a need to go to the page «DISCRETE IO» of a device web interface:

where:

IO Mode – allows to set an IO line into the mode «input», «output» and «logic output». <u>On default</u>: input

At the page «DISCRETE IO», current settings of discrete input-output channels are displayed. In the mode «input», «output» and «logic output» it is possible to configure automatic sending of SNMP TRAP, SYSLOG, e-mail, and SMS notifications, notifications into a log file as well as periodic reports about a status. In the mode «output», it is possible to set a logic level at a line through the web, SNMP and HTTP API interfaces. In the mode «logic output», a logic level at a line is set by a logic module.

[ENG] 7.3. [DKSF 52/202.10 IU] How to Determine a Current Logic Level on an Input-Output Line?

To define a current logic level of an IO line, there is a need to go to the page «DISCRETE IO» of a device web interface:

where:

Input Logic Level – is a field displaying a current logic level at an IO line. It is updated automatically when a logic level of a line is changed with no need to reload an entire page.

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[ENG] 7.4. [DKSF 52/202.10 IU] How to Manage an Input-Output Line in the «Output» Mode?

To manage an IO line, there is a need to go to the page «DISCRETE IO» of a device web interface:
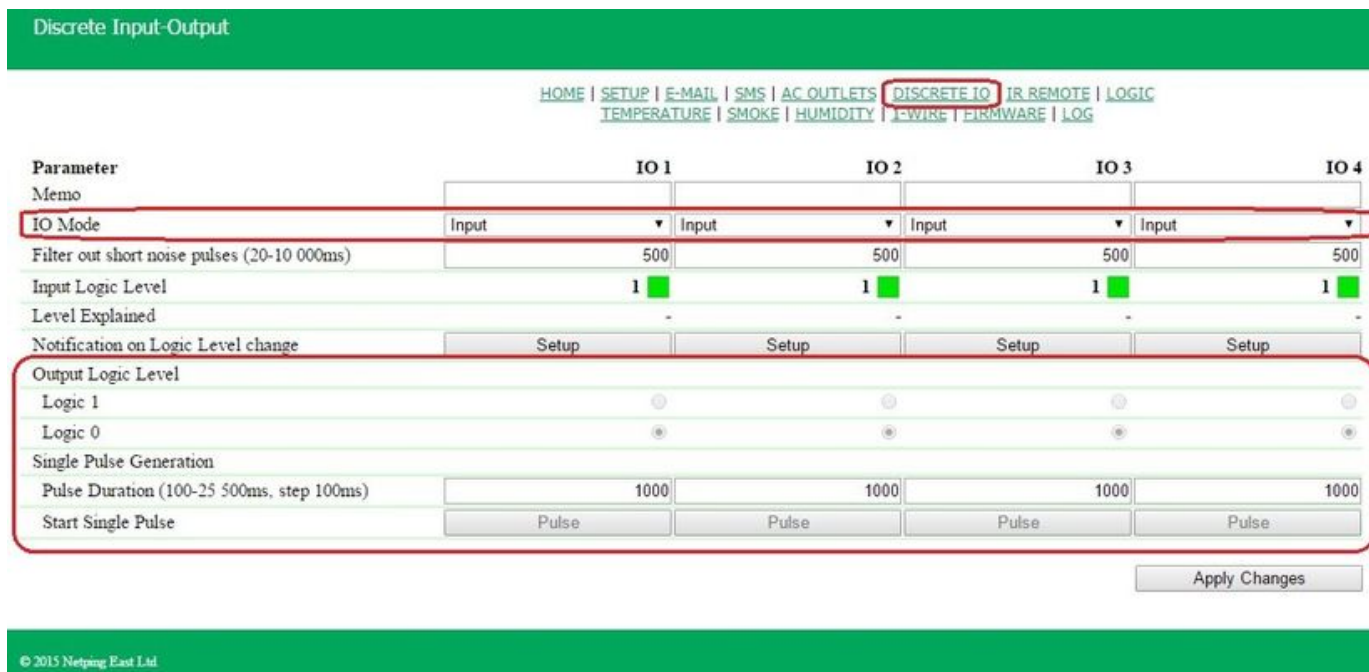
1. Set an IO line to the «output» operation mode;
2. Check a checkbox «Output Logic Level» at «Logic 1» or «Logic 0»;
3. Save parameters by clicking the button «Apply Changes»

Input Logic Level – is a field displaying a current logic level of an IO line. It is updated automatically when changing a logic level of a line with no need to reload an entire page;

Output Logic Level – is a parameter of a logic level of a line, which works as an «output». A logic status «1» means having voltage at an output line (a scheme with an open collector). A logic status «0» means having 0V at an IO line. On default: logic «0»;

Single Pulse Generation – when clicking the button «pulse», an IO line, which works as an output, will be inverted for a specified period of time. A pulse duration is set in the field «Pulse Duration (100-25500ms, step 100ms)». If a line is set to «output», then the button for issuing a pulse will not be active.

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[ENG] 7.5. [DKSF 52/202.10 IU] I Want to Configure Sending Notifications When a Logic Level of an Input-Output Line Is Changed. How to Do This?

Notifications on changing a logic level of an IO line are configured at the page «DISCRETE IO» of a device web interface:
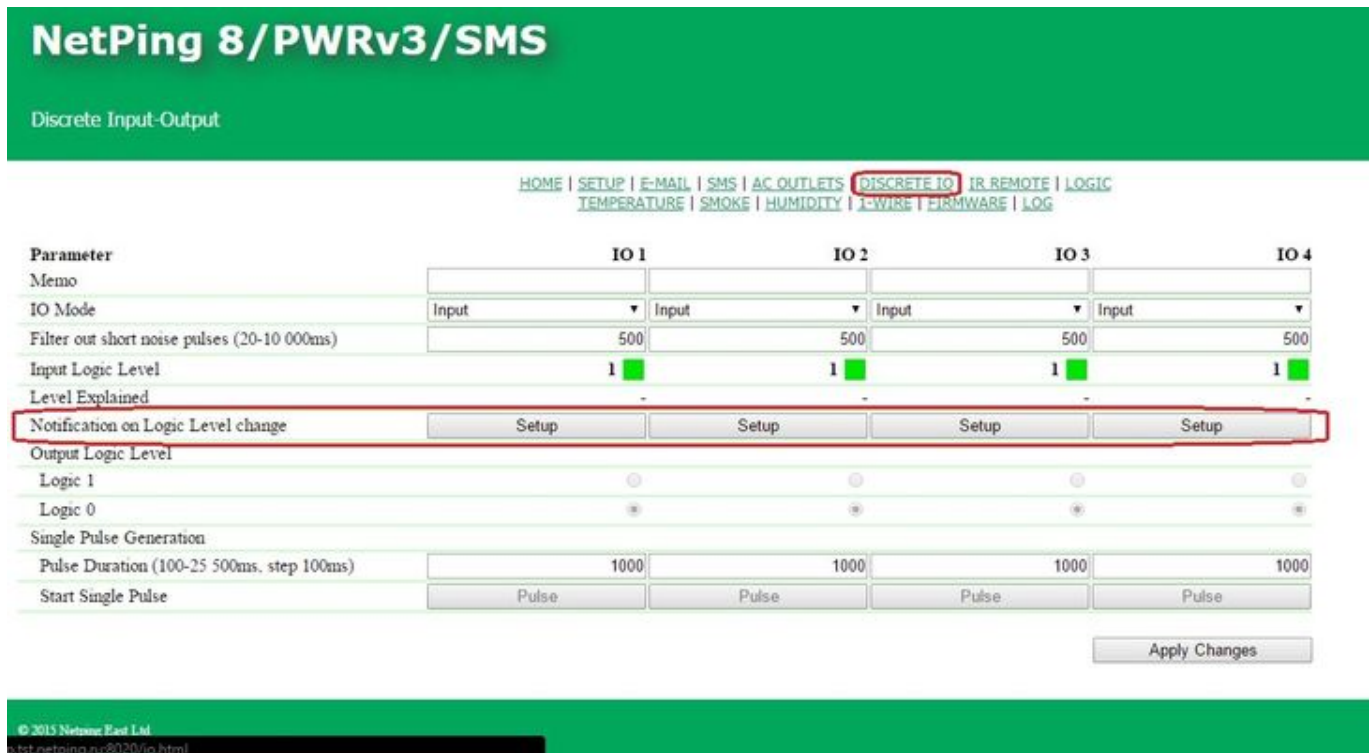
When clicking the button «Setup» a menu of settings appears for configuring sending notifications of the next types: Log, Syslog, E-mail, SMS (in devices with an embedded GSM modem) and SNMP Trap, as well as encoding numeric values of a current level of an IO line:
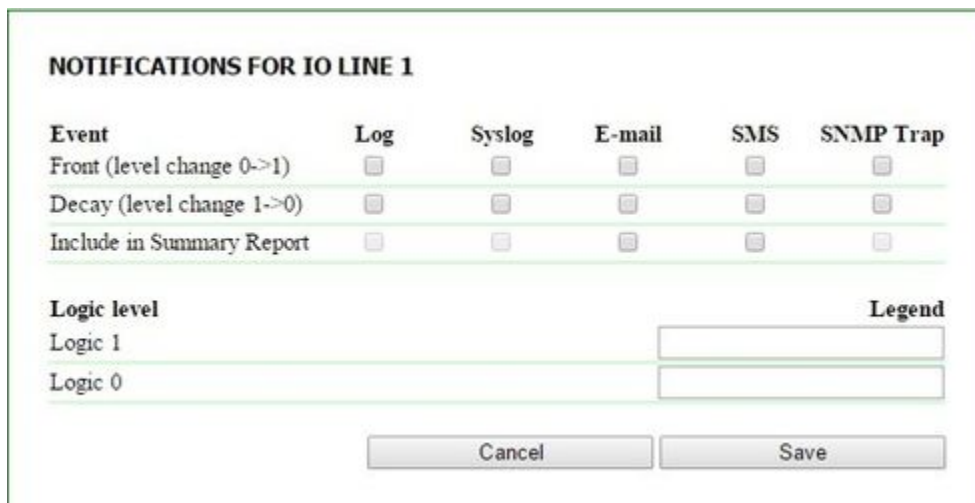
where:

Front (level change 0->1) – is a checkbox, when checked a device will send notifications if a status of an IO line is changed from «0» to «1». On default: checkbox is not checked

Decay (level change 1->0) – is a checkbox, when checked a device will send notifications if a status of an IO line is changed from «1» to «0». On default: checkbox is not checked

Include in Summary Report – is a checkbox, when checked a device will send reports about a status of an IO line via e-mail and/or SMS. Time for sending reports is configured at the pages «SMS» and «E-MAIL». On default: checkbox is not checked

Logic level Logic 1 – a clear and understandable description of a numeric value of a level «Logic 1» of an IO line is set. This decoding will be

displayed in the field «Legend» at the page «INPUT-OUTPUT» of a device web interface and will be added to SNMP TRAP notifications.

Logic level Logic 0 – a clear and understandable description of a numeric value of a level «Logic 0» of an IO line is set. This decoding will be displayed in the field «Legend» at the page «INPUT-OUTPUT» of a device web interface and will be added to SNMP TRAP notifications.

After setting all necessary parameters click the button «Apply changes».

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[ENG] 7.6. [DKSF 52/202.10 IU] For What the Filter of Short Noise Pulses Is Necessary in the Settings of an Input-Output Line?

Filter out short noise pulses (20-10 000 ms) - is a field for setting a period of time, during which an IO line configured as an «input», must stay stable to register its status. Hence, this parameter allows to filter out short noise signals or bouncing of mechanical contacts. On default: 500ms

A filter for short noise pulses is configured at the page «DISCRETE IO» of a device web interface:

Discrete Input-Output

HOME | SETUP | E-MAIL | SMS | AC OUTLETS | DISCRETE IO | IR REMOTE | LOGIC
TEMPERATURE | SMOKE | HUMIDITY | 1-WIRE | FIRMWARE | LOG

Parameter	IO 1	IO 2	IO 3	IO 4
Memo				
IO Mode	Input	Input	Input	Input
Filter out short noise pulses (20-10 000ms)	500	500	500	500
Input Logic Level	1	1	1	1
Level Explained	-	-	-	-
Notification on Logic Level change	Setup	Setup	Setup	Setup
Output Logic Level				
Logic 1	○	○	○	○
Logic 0	◉	◉	◉	◉
Single Pulse Generation				
Pulse Duration (100-25 500ms, step 100ms)	1000	1000	1000	1000
Start Single Pulse	Pulse	Pulse	Pulse	Pulse

Apply Changes

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[ENG] 8. [DKSF 52/202.10 IU] Working with SMS Notifications and a Built-in GSM Modem

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[ENG] 8.1. [DKSF 52/202.10 IU] How to Know a Balance on the SIM Card?

> Information in the section applies to the device NetPing 2/PWR-220 v2/SMS with a built-in GSM modem.

There is a need to go to the page «SMS» of a device web interface to know a balance on the SIM card installed into the SIM slot of a device:

GSM setup for SMS notification and control

HOME | SETUP | RELAYS | WATCHDOG | SCHEDULE 1 | SCHEDULE 2 | SMS
TEMPERATURE | DISCRETE IO | IR COMMANDS | LOGIC | FIRMWARE | LOG

GSM SETUP

Destination Phone Number for SMS, Primary	+79130000000
Destination Phone Number for SMS, Aux 1	
Destination Phone Number for SMS, Aux 2	
Destination Phone Number for SMS, Aux 3	
USSD Command for request of GSM account status	*100#
Log communication with GSM modem (troubleshooting)	☑

Apply changes

GSM STATUS

Registration in GSM Network	-
GSM Signal Strength	-

Request status

GSM ACCOUNT

Reply to the USSD Command of status request	-

Send USSD Request

In the section «GSM SETUP», specify a USSD code of a corresponding service provider to request a balance.

USSD Command for request of GSM account status – is a command sending a USSD to request a balance.

In the section «GSM ACCOUNT», click the button «Send USSD Request». In a few seconds, the information about a balance on the SIM card will appear in the field «Reply to the USSD Command of status request».

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[ENG] 8.2. [DKSF 52/202.10 IU] I Need to Specify a Number for Sending SMS Notifications. How to Do This?

> Information in the section applies to the device NetPing 2/PWR-220 v2/SMS with a built-in GSM modem.

To specify one or several phone numbers for sending SMS notifications, there is a need to go to the page «SMS» of a device web interface:

In the section «GSM SETUP», there is a need to specify a primary destination phone number and auxiliary numbers if necessary for sending SMS notifications.

Destination Phone Number for SMS – is indicated in the next format Country Code - Operator's Code - Phone Number.

To save phone numbers, click the button «Apply changes».

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[ENG] 8.3. [DKSF 52/202.10 IU] How to Enable an Extended Log for a GSM Modem?

Information in the section applies to the device NetPing 2/PWR-220 v2/SMS with a built-in GSM modem.

Detailed logging for a GSM modem is enabled at the page «GSM SETUP» of a device web interface:

In the section «GSM SETUP», there is a need to check a checkbox «Log Communication with GSM modem (Troubleshooting)».

Log Communication with GSM modem (Troubleshooting) – is a function enabling representing the information on all AT commands at the page «LOG», which are exchanged between a CPU and a GSM modem. This feature is necessary to troubleshoot possible issues of a GSM modem operation.

To save the setting, click the button «Apply changes».

[ENG] 8.4. [DKSF 52/202.10 IU] Checking the GSM Signal Strength

Information in the section applies to the device NetPing 2/PWR-220 v2/SMS with a built-in GSM modem.

To check the registration, a GSM signal strength and a balance at the SIM-card of a device, go to the page «GSM SETUP» of a device web interface:

NetPing SMS

GSM Setup for SMS Notification and Control

HOME | SETUP | GSM SETUP | SMS LOG | SEND SMS | AGENTS | VARIABLES | TRAPS | FIRMWARE | LOG

GSM SETUP

Destination Phone Number for SMS, Main	+79136038283
Destination Phone Number for SMS, Aux 1	+79059420394
Destination Phone Number for SMS, Aux 2	
Destination Phone Number for SMS, Aux 3	
USSD Command (Request of GSM Account Status etc.)	*100#
Log Communication with GSM modem (Troubleshooting)	☐

Apply Changes

Click the button «Request status» in the section «GSM STATUS». In a few seconds the field «Registration in GSM network» will have an information about a cellular network, where the SIM-card is registered. In the field «GSM Signal Strenth», the information about a signal status in percents will appear.

[ENG] 8.5. [DKSF 52/202.10 IU] Receiving SMS-Notifications about Previously Specified Events

> Information in the section applies to the device NetPing 2/PWR-220 v2/SMS with a built-in GSM modem.

To configure SMS notifications about previously specified events, there is a need to go to the page «SMS» of a device web interface:

EVENTS FOR SMS NOTIFICATIONS

Switch to backup battery, battery discharge warning	☐
Ethernet Link Status change	☐
Watchdog Reset	☐
Pinger Event (Loss or Restoration of communication)	☐

Apply Changes

In the section «Events for SMS Notifications», it is possible to configure:

Switch to backup battery, battery discharge warning – when a device switches to a backup power, an SMS notification will be sent the destination numbers, specified in the section «GSM Setup» on the page «SMS» of a device web interface. Information applies to the device NetPing 2/PWR-220 v2/SMS with a built-in battery.

Ethernet Link Status change – when a specified event takes place, an SMS notification will be sent to the destination numbers, specified in the section «GSM Setup» on the page «SMS» of a device web interface.

Watchdog Reset – if a relay is controlled by the module «Watchdog», an SMS notification will be sent to the destination numbers specified in the section «GSM Setup» on the page «SMS» of a device web interface, when a relay status is changed.

Pinger Event (Loss or Restoration of communication) – when the loss or restoration of the connection of the tested node in the network is discovered, an SMS notification will be sent to the destination numbers, specified in the section «GSM Setup» on the page «SMS» of a device web interface. It is possible to configure addresses for testing the availability of the network nodes via IP address or a DNS name in the fields «Ad dress #1 to ping», «Address #2 to ping» and the polling period in the field «Polling Period, s (30-9999)» in the section «Pinger» on the page «SM S»:

PINGER

Address #1 to ping	192.168.137.1
Status	OK
Address #2 to ping	ya.ru
Status	Fail
Polling Period, s (30-9999)	30

Apply Changes

Parameters of the operation of the module «Pinger» on the page «SMS» are as follows:

1. Polling a specified IP address or a DNS name is started once in a specified period of time (a parameter «Polling Period, s (30-9999)»);
2. A period of waiting for a response from an IP address or a DNS name is 2 seconds;
3. The amount of repeats of polling an IP address or a DNS name is 8;
4. If there is no response from a tested node during 8 repeats, «Pinger» notifies that there is no connection with the specified IP address or a DNS name;
5. If during the next polling period there will be a response from a tested node, «Pinger» notifies that there is a connection with the specified IP address or a DNS name

It is possible to learn how to specify destination numbers for sending SMS notifications from the section «[ENG] 8.2. [DKSF 52/202.10 IU] I Need to Specify a Number for Sending SMS Notifications. How to Do This?».

After setting all necessary parameters, click the button «Apply changes».

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[ENG] 8.6. [DKSF 52/202.10 IU] GSM Modem Does not Work. How to Reboot It?

Information in the section applies to the device NetPing 2/PWR-220 v2/SMS with a built-in GSM modem.

If there are certain reasons for SMS notifications not to be sent, and a device is not managed by SMS commands, it is possible to reload a GSM modem at the page «SMS» of a device web interface:

GSM MODEM TROUBLESHOOTING

Last error of GSM modem (hit F5 to refresh)   +CME ERROR: SIM not inserted

Restart GSM

In the section «GSM Modem Troubleshooting» there is a need to click the button «Restart GSM», afterwards a modem will reboot.

In the field «Last error of GSM modem», the last error of the modem is indicated. To display an actual error, there is a need to click the button F5.

[ENG] 8.7. [DKSF 52/202.10 IU] What SMS Notifications Can a Device Send?

> Information in the section applies to the device NetPing 2/PWR-220 v2/SMS with a built-in GSM modem.

SMS notification looks like the following:

> np_name (q) information

where:

np_name – is a name of a device for the identification of SMS notifications. It is specified on the page «SETUP» of a device web interface. If a name of a device is not specified, then the name NETPING is used

q – is a consequent number of notifications. The number is non-volatile – it is not zeroed when the power is switched off. It is used for the registration of missed (lost) notifications

Information – is the informational part of SMS notifications

A notification about changing a status of an IO line:

> IOn=0|1 label transcript

where:

n – is a number of an IO line, 1..4

label – is a label of an IO line that is set in the field «Memo» on the page «DISCRETE IO» of a device web interface. If a label is not set (empty), then it is not included into SMS.

transcript – is a description of a logic level of an IO line, which is specified in the pop-up dialogue for the configuring notifications from IO line on the page «DISCRETE IO» of a device web interface. If a description is not set (empty), then it is not included into SMS.

A notification about the failure of a temperature sensor (a sensor stopped responding while polling):

> TEMP.SENSOR n "label" IS FAILED

where:

n – is a number of a temperature sensor, 1..8

label – is a label of a temperature sensor, which is set in the field «Memo» on the page «TEMPERATURE» of a device web interface. A label in the text of a notification is quoted. If a label is not set (empty), then it is not included into SMS

A notification about a normal status of temperature within the specified range on the page «TEMPERATURE» of a device web interface:

> TEMP.SENSOR n "label" IN SAFE RANGE (t1 TO t2), NOW tC

where:

t – is a current temperature, °C

n – is a number of a temperature sensor, 1..8

t1, t2 – are the thresholds of the «normal» temperature range, °C

label – is a label of a temperature sensor, which is set in the field «Memo» on the page «TEMPERATURE» of a device web interface. A label is quoted in the text of a notification. If a label is not set (empty), it is not included into SMS.

A notification about the temperature leaving the threshold of the specified range:

TEMP.SENSOR n "label" OUT OF RANGE (t1 TO t2), NOW tC

where:

t – is a current temperature, °C

t1, t2 – are the thresholds of the «normal» temperature range, °C

n – a number of a temperature sensor, 1..8

label – is a label of a temperature sensor, which is set in the field «Memo» on the page «TEMPERATURE» of a device web interface. A label is quoted in the text of a notification. If a label is not set (empty), it is not included into SMS.

A notification about the failure of a humidity sensor (a sensor stopped responding while polling):

REL.HUMIDITY SENSOR FAILED

A notification about the readings of a humidity sensor return to the thresholds of the specified range:

REL.HUMIDITY h% IN SAFE RANGE (h1..h2)

where:

h – is a relative humidity, %

h1, h2 – are the thresholds of a «normal» relative humidity range, %

A notification about the readings of a relative humidity rising above the thresholds of the specified range of a relative humidity:

REL.HUMIDITY h% ABOVE SAFE RANGE (h1..h2)

where:

h – is a relative humidity, %

h1, h2 – are the thresholds of the «normal» range of a relative humidity, %

A notification about falling of readings of the relative humidity below the specified range:

REL.HUMIDITY h% BELOW SAFE RANGE (h1..h2)

where:

h – is a relative humidity, %

h1, h2 – are the thresholds of a «normal» relative humidity range, %

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Notification about switching on/off a built-in relay:

RELAY n "label" SWITCHED ON|OFF

where:

n – is a relay number, 1..2

label – is a label of a temperature sensor, which is set in the field «Memo» on the page «TEMPERATURE» of a device web interface. A label is quoted in the text of a notification. If a label is not set (empty), it is not included into SMS.

A notification about triggering the module «Watchdog» (a socket is switched off for short time to restore the operation of a device connected to it):

WDOG n "label" RESET

where:

n – is a relay number, 1..2

label – is a label of a temperature sensor, which is set in the field «Memo» on the page «TEMPERATURE» of a device web interface. A label is quoted in the text of a notification. If a label is not set (empty), it is not included into SMS.

A notification about changing a status of a status of the Ethernet ports of a device:

ETHERNET LINK STATUS: 1 UP|DOWN, 2 UP/DOWN

A device has a built-in three-port switch with two external ports and one internal port, to which the CPU is connected.

A notification about restoring and losing a connection with a specified IP address (the module «Pinger»):

PINGERn (IP/HOST) STATUS: OK|FAILED

where:

n – is a number of the channel of the module «Pinger», 1..2

IP/HOST – is an address of the tested IP address/ DNS name

A notification about the switching of a device to the backup power from a battery (for the device NetPing 2/PWR-220 v2/SMS with a built-in battery):

POWERED FROM BATTERY

A notification about a device switching to the main power from the 220 V electricity grid (for the device NetPing 2/PWR-220 v2/SMS with a built-in battery):

POWERED FROM 220V

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A notification about a low battery charge (for the device NetPing 2/PWR-220 v2/SMS with a built-in battery):

BATTERY CHARGE < 10%

PERIODIC SMS REPORTS ABOUT A STATUS OF SENSORS, IO LINES AND RELAYS

A feature of sending a daily report as SMS notifications about a status of sensors, IO lines, and relays, is implemented in a device. More detailed information about configuring this report can be ready in the section «[ENG] 8.9. [DKSF 52/202.10 IU] Setting the Time of Sending a Daily Report about a Status of Sensors, IO Lines and Relays as SMS Notification».

[ENG] 8.8. [DKSF 52/202.10 IU] How to Control a Device Using SMS Commands

> Information in the section applies to a device NetPing 2/PWR-220 v2/SMS with a built-in GSM modem.

A device has a feature of remote management using SMS commands.

SYNTAX OF SMS COMMANDS

A general format of a text of an SMS command:

    NETPING fff community_w kkkkk

where:

fff – is a code of a command, for example, P1+ (see below).

community_w – is a password that corresponds to SNMP community for write. It is specified on the page «SETUP» of a device web interface. It is possible to use Latin letters, numbers, character «_» without quotes and spaces.

kkkkk – is a request identifier (a random number from 3 to 9 digits). It is repeated in a response to establish a compliance between a request and a response. It is an auxiliary element of a command. If there is no identifier in a command, there is no identifier in a response.

> A text of a command is case-insensitive, therefore it is possible to use uppercase and lowercase letters. Elements of a command are separated by spaces. It is not acceptable to use the next characters: ' (apostrophe), " (quote), @. Including these characters can cause the firmware to fail. Execution of a command is confirmed by a response notification (see below).

COMMAND CODES

A command code is indicated together, without spaces.

Command Code	Description
Pn+	Switch on a relay n, where n is a relay number
Pn-	Switch off a relay n, where n is a relay number
PnRt	Reboot a relay n, where n is a relay number, t is the time of resetting a relay in seconds > Polarity (direction) of switching a relay when performing a reset must correspond to the specified one in the settings of the module «Watchdog» (reset mode). If a relay is already in the reset state, then a reset command will not have any effect, however, a response notification about a successful completion of «NP DONE PnR» will be sent to the sender.
PnW	Switch a relay n to the management mode «Wathdog», where n is a relay number
PnS	Switch a relay n to the management mode «Schedule», where n is a relay number
PnX	Switch a relay n to the management mode «Schedule+Watchdog», where n is a relay number
PnL	Switch a relay n to the management mode «Logic output», where n is a relay number
Pn?	Request a status of a relay n, where n is a relay number
P?	Request a status of all relays in a brief form
Lm+	Switch a line m to the status logic 1, where m is a number of an IO line (1..8)
Lm-	Switch a line m to the status logic 0, where m is a number of an IO line (1..8)
LmP	Issue a pulse to the line m, where m is a number of an IO line (1..8)
Lm?	Request a status of a line m, where m is a number of an IO line (1..8)
L?	Request a status of all IO lines in a brief form

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N?	Request a status of pingers on the page «SMS»
Ka	Send an IR command through the module IRC-TR v2, where a is a number of a command
Tb?	Request readings of a temperature sensor b, where b is a number of a temperature sensor
H?	Request readings of a humidity sensor
A?	Request a battery status (for a device NetPing 2/PWR-220 v2/SMS with a built-in battery).
U	Request a balance of a SIM card

EXAMPLES OF SMS COMMANDS

A command to switch on a relay 1 of a device:

NETPING P1+ SWITCH

A command to switch on a relay 2 of a device:

NETPING P2- SWITCH

RESPONSE NOTIFICATIONS TO CONTROLLING SMS COMMANDS

Confirmation of a command execution, such as switching a relay or changing a status of a discrete output line:

NP DONE fff kkkkk

where:

fff – is a code of an outcoming command, execution of which is confirmed by this notification. For example, P1+

kkkkk – is a request identifier (a random number from 3 to 9 digits). It is repeated in a response to establish a compliance between a request and a response. It is an auxiliary element of a command. If there is no identifier in a command, there is no identifier in a response.

Error when a command is read by a device. Most probably, an incorrect text of an outgoing command:

NP WRONG CMD: "outgoing command kkkkk"

where:

Outgoing command – is a text of an outgoing command, completely quoted.

kkkkk – is a request identifier (a random number from 3 to 9 digits). It is repeated in a response to establish a compliance between a request and a response. It is an auxiliary element of a command. If there is no identifier in a command, there is no identifier in a response.

Incorrect password (Community) in an outcoming command:

NP WRONG PASSWD IN kkkkk

NP WRONG PASSWD

where:

kkkkk – is a request identifier (a random number from 3 to 9 digits). It is repeated in a response to establish a compliance between a request and a response. It is an auxiliary element of a command. If there is no identifier in a command, there is no identifier in a response. (the second command)

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A response to a request (NETPING Pn? community_w kkkkk) about a relay status:

NP REPLY Pnb kkkkk

where:

n – is a relay number

b – is a relay management mode, possible relay statuses are coded with the next characters: «M+» (manual on), «M-» (manual off), «W» (watchdog), «S» (schedule), «X» (schedule+watchdog), «L» (logic).

kkkkk – is a request identifier (a random number from 3 to 9 digits). It is repeated in a response to establish a compliance between a request and a response. It is an auxiliary element of a command. If there is no identifier in a command, there is no identifier in a response.

A response to a request (NETPING P? community_w kkkkk) about a status of all relays:

NP REPLY P1bP2b kkkkk

where:

b – is a relay management mode, possible statuses of a relay are coded with the characters: «M+» (manual on), «M-» (manual off), «W» (watchdog), «S» (schedule), «X» (schedule+watchdog), «L» (logic).

kkkkk – is a request identifier (a random number from 3 to 9 digits). It is repeated in a response to establish a compliance between a request and a response. It is an auxiliary element of a command. If there is no identifier in a command, there is no identifier in a response.

A response to a request (NETPING Lm? community_w kkkkk) about a status of an IO line:

NP REPLY L1=0(IN|OUT|OUT.L) kkkkk

where:

A value L1=0 is provided as an example. Before a symbol «=» there is a number of a line, after a symbol «=» there is a logic level of a line.

IN|OUT|OUT.L – is an operation mode of an IO line, where IN is the «input», OUT is the «output», OUT.L is the «logic output»

kkkkk – is a request identifier (a random number from 3 to 9 digits). It is repeated in a response to establish a compliance between a request and a response. It is an auxiliary element of a command. If there is no identifier in a command, there is no identifier in a response.

A response to a request (NETPING L? community_w kkkkk) about a status of all IO lines:

NP REPLY L1=0(IN|OUT|OUT.L) L2=1(IN|OUT|OUT.L) L3=0(IN|OUT|OUT.L) L4=1(IN|OUT|OUT.L) kkkkk

where:

Values L1=0 L2=1 L3=0 L4=1 are provided as an example. Before the symbol «=» there is a number of a line, after the symbol «=» there is a logic level on a line.

IN|OUT|OUT.L – is the operation mode of an IO line, where IN is the «inout», OUT is the «output», OUT.L is the «logic output»

kkkkk – is a request identifier (a random number from 3 to 9 digits). It is repeated in a response to establish a compliance between a request and a response. It is an auxiliary element of a command. If there is no identifier in a command, there is no identifier in a response.

A response to a request (NETPING N? community_w kkkkk) about a status of pingers, built into the module SMS:

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```
NP REPLY N1(IP|DNS name)=OK|FAILED N2(IP|DNS name)=OK|FAILED kkkkk
```

where:

OK – a specified IP address/DNS name responds

FAILED – a specified IP address/DNS name is silent

kkkkk – is a request identifier (a random number from 3 to 9 digits). It is repeated in a response to establish a compliance between a request and a response. It is an auxiliary element of a command. If there is no identifier in a command, there is no identifier in a response.

A response to a request (NETPING Tb? community_w kkkkk) about readings of a temperature sensor. A sensor with the number b failed or is not connected:

```
NP REPLY Tb=? SENSOR FAILED kkkkk
```

where:

b – is a number of a temperature sensor

kkkkk – is a request identifier (a random number from 3 to 9 digits). It is repeated in a response to establish a compliance between a request and a response. It is an auxiliary element of a command. If there is no identifier in a command, there is no identifier in a response.

A response to a request (NETPING Tb? community_w kkkkk) on the readings of a temperature sensor. A sensor with the number b is in the status «below normal», «normal», «above normal» accordingly:

```
NP REPLY Tb=tC BELOW|IN|ABOVE SAFE RANGE (t1..t2C) kkkkk
```

where:

b – is a number of a temperature sensor

t – is a current reading of a temperature, in °C

t1, t2 – are the thresholds of the «normal» temperature range, in °C

kkkkk – is a request identifier (a random number from 3 to 9 digits). It is repeated in a response to establish a compliance between a request and a response. It is an auxiliary element of a command. If there is no identifier in a command, there is no identifier in a response.

A response to a request (NETPING H? community_w kkkkk) on the readings of a humidity sensor. A sensor failed or is not connected:

```
NP REPLY H=? SENSOR FAILED kkkkk
```

where:

kkkkk – is a request identifier (a random number from 3 to 9 digits). It is repeated in a response to establish a compliance between a request and a response. It is an auxiliary element of a command. If there is no identifier in a command, there is no identifier in a response.

A response to a request (NETPING H? community_w kkkkk) about readings of a humidity sensor. A sensor is in the status «below normal», «normal», «above normal» accordingly:

```
NP REPLY H=h% BELOW|IN|ABOVE SAFE RANGE (h1..h2%) T= tC kkkkk
```

where:

h – is a current reading of a relative humidity, in %

h1, h2 – are the thresholds of the «normal» range of a relative humidity, in %

t – is a current reading of a temperature, in °C

kkkkk – is a request identifier (a random number from 3 to 9 digits). It is repeated in a response to establish a compliance between a request and a response. It is an auxiliary element of a command. If there is no identifier in a command, there is no identifier in a response.

A response to a request (NETPING A? community_w kkkkk) about a battery status (for a NetPing 2/PWR-220 v2/SMS device with a built-in battery):

NP REPLY A? POWER SCR: V, CHARGING: C

where:

V – is a power source of a device, can take the next values: «220V» (powering from 220 grid), «BATTERY» (powering from a battery)

C – is a battery charge status, can take the next values: «YES» (a battery is charging), «LOW» (a battery charge is less than 10% of its total capacity)

Requesting a balance of a SIM card (NETPING U community_w kkkkk). A command runs the USSD request. The next SMS notification is sent in a response to a command:

NP DONE U - USSD STARTED, WAIT FOR REPLY BY SMS

Less than in a minute after a device receives a response of its balance, a balance is sent as an individual SMS notification to a sender's number.

[ENG] 8.9. [DKSF 52/202.10 IU] Setting the Time of Sending a Daily Report about a Status of Sensors, IO Lines and Relays as SMS Notification

Information in the section applies to the device NetPing 2/PWR-220 v2/SMS with a built-in GSM modem.

To set the time of sending a daily report about a status of sensors, IO lines and relays as SMS notification, there is a need to go to the page «SMS» of a device web interface:

DAILY SUMMARY REPORT (SENSORS AND IO)

Time to send Summary Report (24h format hh:mm, up to 5 times, separated by space)	

Apply Changes

where:

Time to send Summary Report (format hh:mm) – is the time, when SMS reports about a status of sensors, IO lines, and relays will be sent. On default: empty line

After setting the time, there is a need to save changes to the parameters by clicking the button «Apply changes».

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[ENG] 8.10. [DKSF 52/202.10 IU] How to Know the IMEI of a Built-in GSM Modem?

Information in the section applies to the device NetPing 2/PWR-220 v2/SMS with a built-in GSM modem.

To get an IMEI (International Mobile Station Equipment Identity) of a built-in GSM modem, there is a need to go to a service page of a web-interface of a device via the address:

http://192.168.0.100/at.html

where:

192.168.0.100 – is a default IP address of a NetPing device;

/at.html – is a service page for sending AT-commands

To send an AT-command for receiving an IMEI, there is a need to:

1. Type the command «AT+CGSN» into an empty field and click the button «Send».
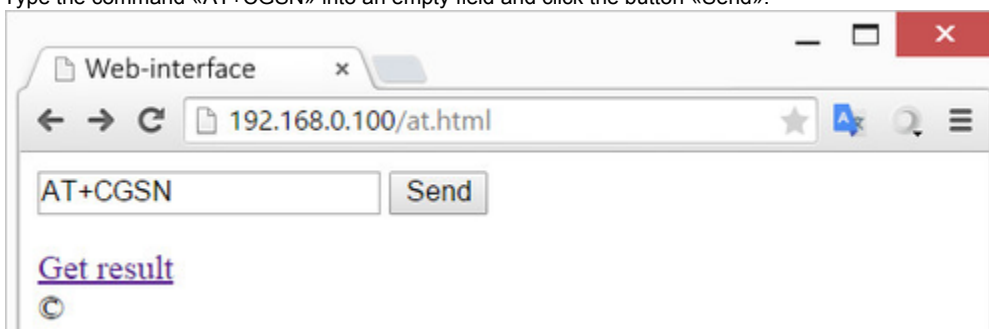
2. Click the link «Get result» to view an IMEI of a built-in GSM modem.
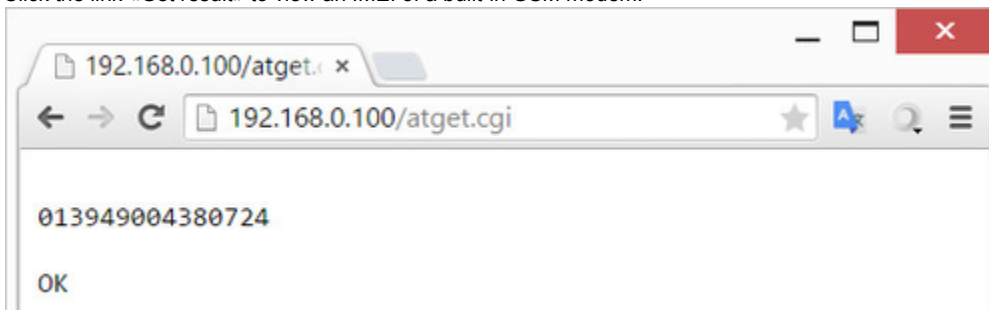
[ENG] 9. [DKSF 52/202.10 IU] Working with an IR Management Module

[ENG] 9.1. [DKSF 52/202.10 IU] How to Record IR Commands Correctly?

An IR Control module works with an IR transceiver IRC-TR v2. The transceiver can record and reproduce IR signals from remote controls of home appliances.

To record IR commands, there is a need to go to the page «IR COMMANDS» of a device web interface:

IR Remote

HOME | SETUP | RELAYS | WATCHDOG | SCHEDULE 1 | SCHEDULE 2 | SMS
TEMPERATURE | DISCRETE IO | IR COMMANDS | LOGIC | FIRMWARE | LOG

IR COMMAND RECORDING

IR Transciever Temporary Buffer		N	Memo (device, command)	
Start recording	Playback/Test	1 ▾		Save

Before using IR Remote feature, please read user manual!
External IR Remote device IRC-TR v2 is not attached or is not operational!

SAVED IR COMMANDS PLAYBACK

N	Memo	Playback	N	Memo	Playback
1	error 20	>	9	-	>
2	-	>	10	-	>
3	-	>	11	-	>
4	-	>	12	-	>
5	-	>	13	-	>
6	-	>	14	-	>
7	-	>	15	-	>
8	-	>	16	-	>

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New IR commands are recorded in the section «IR COMMAND RECORDING»:

1. Prepare an IR remote, from which it is necessary to capture a command.
2. Make sure that a red LED on the IR transceiver glows steadily
3. Choose a command number «N» and enter its description into the field «Memo (device, command)».
4. Click the button «Start recording». Send a command from an IR remote 30 seconds after clicking the button «Start recording». Otherwise, a transceiver will go to a standby mode. A remote and a transceiver must be disposed coaxially at the distance of 10-30 cm for an «eye» of a transceiver to see a transmitting IR LED of a remote. A command will be recorded.
5. Check a recorded command by clicking the button «Play/Test».
6. Click the button «Save» to save a command in a nonvolatile memory if a command is successfully reproduced.

It is desirable to check again the operation of an IR command by clicking a corresponding button «>» in the section of saved commands.

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[ENG] 9.2. [DKSF 52/202.10 IU] Reproducing IR Commands through the Web Interface

An IR control module works with an IR transceiver IRC-TR v2. A transceiver can record and reproduce IR signals from remotes of home appliances.

To reproduce IR commands, go to the page «IR COMMANDS» of a web interface of a device:

IR Remote

HOME | SETUP | RELAYS | WATCHDOG | SCHEDULE 1 | SCHEDULE 2 | SMS
TEMPERATURE | DISCRETE IO | IR COMMANDS | LOGIC | FIRMWARE | LOG

IR COMMAND RECORDING

IR Transciever Temporary Buffer		N	Memo (device, command)	
Start recording	Playback/Test	1 ▼		Save

Before using IR Remote feature, please read user manual!
External IR Remote device IRC-TR v2 is not attached or is not operational!

SAVED IR COMMANDS PLAYBACK

N	Memo	Playback	N	Memo	Playback
1	error 20	>	9	-	>
2	-	>	10	-	>
3	-	>	11	-	>
4	-	>	12	-	>
5	-	>	13	-	>
6	-	>	14	-	>
7	-	>	15	-	>
8	-	>	16	-	>

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In the section «Saved IR Commands» recorded IR commands are reproduced.

To reproduce a saved IR command click the button «>» in the section «Saved IR Commads» next to the name of a necessary command. A red LED on a transceiver must be switched off for 0.5 s., initiating reproducing a command.

Do not reproduce «empty» command cells, where there is no proper record of an IR command. This can cause a transceiver to freeze.

In addition, it is possible to reproduce IR commands using the protocol SNMP and HTTP API commands.

[ENG] 9.3. [DKSF 52/202.10 IU] Is It Possible to Reproduce IR Commands through the SNMP?

Reproducing of the IR commands can be realized through an SNMP protocol. A necessary information is contained in the MIB file that corresponds to the used firmware version of a NetPing device. It is possible to download the required MIB file from the pages of the description of devices in the section «Documentation and Files»:

- NetPing 2/PWR-220 v3/ETH
- NetPing 2/PWR-220 v2/SMS

> It is possible to record commands only when using a device web interface.

Reproducing IR commands using the means of an SNMP protocol:

1. Before issuing an IR command, make sure that a transceiver is in a standby mode, reading the status through the OID .1.3.6.1.4.1.25728. 7900.1.3.0. A status value «commandCompleted (0)» or «commandAccepted (2)» means that an IR transceiver is ready to reproduce an IR command;
2. To issue an IR command, write a number of a command (a cell number of a saved command) in OID .1.3.6.1.4.1.25728.7900.1.1.0;
3. If a transceiver is in a status «protocolError (1)», then a reboot is performed by writing the value «1» into OID .1.3.6.1.4.1.25728.7900.1.2 .0 (works or the IR extension module IRC-TR v1);
4. After the reboot, there is a need to wait for the readiness «commandCompleted (0)», by reading the status. If the repeated reproducing of an IR command does not disrupt the logic of the equipment operation, then the issuing of a command is better to repeat 2-4 times, each time repeating the readiness before issuing a command

All statuses of the IR extension module can be browsed in the MIB files DKSF_52.10.x_ MB.mib, DKSF_202.10.x_ MB.mib (OID «npIrStatus») or on the page «[ENG] 13.3. [DKSF 52/202.10 IU] What OID Are Supported by a Device?» for this firmware description.

[ENG] 9.4. [DKSF 52/202.10 IU] How to Determine the Firmware Version of the IR Module?

To determine a firmware version of an IR module, go to the web page «IR Commands» of a device web interface:

In the section «Saved IR Commands» there is an inscription «A version of a connected IR control module is IRC-TR v2: HW X.X / BL X.X / FW X.X»

where:

HW – is a hardware version of an IR module.

BL – is a Bootloader version of an IR module.

FW – is a firmware version of an IR module.

> A version of the hardware, loader and firmware can be seen if a module is correctly connected to a device and works properly. Otherwise, in the section «Saved IR Commands» there will be an inscription «External IR Remote device IRC-TR v2 is not attached or is not operating!»

[ENG] 9.5. [DKSF 52/202.10 IU] Recommendations

If a transceiver is stuck in a protocol as a result of a failure, noise, an operator's error or managing software failure, and reacts improperly to incoming commands, a reset can be performed by a short-term (5 s.) switching off a transceiver from a NetPing device.

Try to avoid recording commands in electroluminescent or LED lighting. The flickering light with a frequency of operation of the electronic ballast can decrease a quality of a recorded IR signal.

Watch avoiding any objects, particularly operator's hands, between an emitter of an IR remote and an «eye» of a transceiver while recording commands.

If a recorded command works unreliably, change a location of a transceiver in relation to a controlled device. In addition, change conditions of recording a command.

[ENG] 10. [DKSF 52/202.10 IU] Working with the Module «Logic»

[ENG] 10.1. [DKSF 52/202.10 IU] What Is «Logic»?

A logic module of a firmware is designed for a simple automation and can perform such tasks as maintaining a microclimate, controlling automatic turning on - turning off a backup equipment, etc. The logic operates on the basis of rules programmed by a user through a web interface. The page «LOGIC» of a device web interface describes an operating algorithm of a module and its configuration capabilities.

> It is prohibited to use a NetPing device to manage electrical circuits when a violation of the control may cause a significant damage.

[ENG] 10.2. [DKSF 52/202.10 IU] How to Use the Module «Logic»?

Rules allow to set a flexible logic scheme of controlling IO lines and relays of a device depending on changing external conditions.

1. Rule Number

The less is a line number, the higher is a rule priority. If two rules form a controversial outgoing command (switch on and switch off an output simultaneously), then a rule with a higher priority will work. If rules do not conflict as they manage different outputs or form non-conflict commands – then a correlation of their priorities does not influence the work.

Rules of «While» type always have a higher priority in relation to the rules of «If» type regardless their mutual location in the list.

A rule priority (position in the list) can be changed using the buttons 8 («Move up» and «Move down») at the end of the line.

2. Checkbox for Activating a Rule

A rule can be activated by checking a checkbox. Inactive rules are displayed in gray.

3. A Type of a Rule (an Operation Mode of a Rule)

Possible values are: «While», «If». «While» rules react to an input status and work constantly. «If» rules react to the changing of an input status (the second position in a line of a rule).

A «While» rule is designed to program conditions, within which an output is constantly held in a specified status while a condition is fulfilled. When a condition is not fulfilled, an output status can be changed by other rules.

An «If» rule is designed to program a momentary reaction to the specified event, such as changing a logic level of an IO line or losing a response when Pinger works. An «If» rule does not influence a status of its output until a rule input is in the same status, even if a condition of a rule is fulfilled.

«While» rules always have a higher priority, than «If» rules.

For example, when one of «While» rules keeps an output switched off, rules of «If» type, which switch an output on at a specified event, will not work.

4. Input

An input is an information source for a rule operation. Its possible values are represented in the table:

Name	Explanation
RESET	It is a signal, which is active 5 seconds after the module «Logic» starts or the module «Logic» is rebooted by the button «Reset» at the web page. It is used for an initial hardware initialization. For example, it is possible to program a 5-second pulse to a relay when a logic starts or issue an IR command to switch a device off
IO1	IO line 1. It must be switched to the mode «input» at the page «INPUT-OUTPUT» before using
IO2	IO line 2. It must be switched to the mode «input» at the page «INPUT-OUTPUT» before using

IO3	IO line 3. It must be switched to the mode «input» at the page «INPUT-OUTPUT» before using
IO4	IO line 4. It must be switched to the mode «input» at the page «INPUT-OUTPUT» before using
TSTAT1	Thermostat 1. A thermostat must be configured at the page «LOGIC» before using
TSTAT2	Thermostat 2. A thermostat must be configured at the page «LOGIC» before using
PINGER1	Pinger 1. A pinger must be configured at the page «LOGIC» before using
PINGER2	Pinger 2. A pinger must be configured at the page «LOGIC» before using
C.S. ALARM	It is an alarm signal of a smoke sensor (current sensor). The signal «C.S.ALARM» triggers when parameters of a sensor leave configured conditions «Alarm» at the page «SMOKE SENSOR» of a device web interface
C.S. FAIL	It is a signal of a smoke sensor (current sensor) failure. The signal «C.S. FAIL» triggers when parameters of a sensor leave configured conditions «Loop break» and «Loop short circuit» at the page «SMOKE SENSOR» of a device web interface
C.S. NORM	It is a signal of a normal operation of a smoke sensor (current sensor). A signal «C.S. NORM» triggers when parameters of a sensor fulfill configured conditions «Alarm», «Loop break», «Loop short circuit» at the page «SMOKE SENSOR» of a device web interface
AC PWR	220 V power supply availability at an input of a device

5. Condition

It is a condition, within which a rule is changed and a command which changes an output status is issued. An available set of conditions is changed depending on a chosen type of a task. Conditions represent the essence of an input status. Possible values for a pinger are – «Silent», «Responds». For an IO line, possible values are – «logic 1», «logic 0». For a thermostat possible values are – «Below specified T», «Above specified T».

A rule of an «If» type works only in the moment of fulfilling a condition.

A rule of a «While» type works all the time while a condition is fulfilled.

6. Command

It is a command, which is fulfilled when a rule triggered (a condition is satisfied).

For an «If» rules possible values are – «Switch on», «Switch off». These commands trigger at the moment when a condition appears.

For a «While» rules possible values are – «Keep On», «Keep Off». These commands work all the time when a condition is fulfilled.

7. Output

It is an output managed by a rule. Its possible values are represented in the table:

Name	Explanation
IO1	IO line 1. It must be switched to the mode «logic output» at the page «INPUT-OUTPUT» before using
IO2	IO line 2. It must be switched to the mode «logic output» at the page «INPUT-OUTPUT» before using
IO3	IO line 3. It must be switched to the mode «logic output» at the page «INPUT-OUTPUT» before using
IO4	IO line 4. It must be switched to the mode «logic output» at the page «INPUT-OUTPUT» before using
RELAY1	It is a relay, built into a body of a device. A relay must be switched to the mode «Logic» at the page «DISCRETE IO» before using
RELAY2	It is a relay, built into a body of a device. A relay must be switched to the mode «Logic» at the page «DISCRETE IO» before using
SNMP1	SNMP Setter 1. It must be configured at the page «LOGIC» before using
SNMP2	SNMP Setter 1. It must be configured at the page «LOGIC» before using
IR1	IR command 1. A command must be recorded and saved into the cell 1 before using
IR2	IR command 2. A command must be recorded and saved into the cell 2 before using
IR3	IR command 3. A command must be recorded and saved into the cell 3 before using

IR4	IR command 4. A command must be recorded and saved into the cell 4 before using
C.S. PWR	There is a need to switch a power supply of a loop into the mode «Managed by logic» at the page «SMOKE» before using C.S. PWR output

8. Buttons Move Up/Move Down

Buttons are designed to change a position of a rule in the list thus changing a rule priority. If rules form conflicting commands for an output, the a rule that is located higher in the list will work. However, «While» врules always have a higher priority towards «If» rules, regardless their mutual location in the list.

9. Control Buttons

Control buttons work directly when clicking them. There is no need to click the button «Apply changes» additionally.

The buttons «Start» and «Stop» control starting and stopping of the rules operation. This status is kept when switching a device off. If rules are stopped, then a warning line of a logic status will appear «10».

«Reset» button switches outputs controlled by a logic module, into the specified initial status «0» (off), and initiates a reset signal. Rules that have a reset signal RESET as an input can switch outputs to another required initial status. There is a need to take into account that if rules are not stopped before clicking the button «Reset», then a status of outputs can be immediately changed and a reset command will have no external effect.

10. Status Line

If rules operation is stopped, a warning line appears.

11. Apply Changes Button

After setting all necessary settings, click the button «Apply changes».

LIMITATIONS

The logic module of the device NetPing 2/PWR-220 v3/ETH does not support the next «inputs» of the rules:

- C.S. ALARM;
- C.S. FAIL;
- C.S. NORM;
- SMOKE 1;
- SMOKE 2;
- SMOKE 3;
- SMOKE 4;
- AC PWR

The logic module of the device NetPing 2/PWR-220 v3/ETH does not support the next «outputs» of the rule:

- C.S. PWR;
- SMOKE RST

The logic module of the device NetPing 2/PWR-220 v2/SMS does not support the next «inputs» of the rules:

- C.S. ALARM;
- C.S. FAIL;
- C.S. NORM;
- SMOKE 1;
- SMOKE 2;
- SMOKE 3;
- SMOKE 4;

The logic module of the device NetPing 2/PWR-220 v2/SMS does not support the next «outputs» of the rules:

- C.S. PWR;
- SMOKE RST

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[ENG] 10.3. [DKSF 52/202.10 IU] Configuring Thermo(Hygro)Stat

To configure a thermo(hygro)stat, there is a need to go to the page «LOGIC» of a device web interface:

In the section «Thermo(Hygro)Stat» the next parameters of a thermostat are configured.

Thermo(hygro)stat is used to maintain a constant temperature or a relative humidity of the air. Besides a programmed thermo(hygro)stat, there is a need to set a minimum of two rules: one for switching on, for example, a heater or a cooler, and another one for switching them off. It is possible to configure no more than two channels of a thermo(hygro)stat – «TSTAT 1», «TSTAT 2». A corresponding thermo(hygro)stat is chosen a data source («input») in logic rules.

Sensor – is a number of a temperature or humidity sensor, with which a thermo(hygro)stat works. It is possible to plug up to eight temperature sensors and one humidity sensor to a device. On default: 1

Current value, deg.C or % rel.hum. – is a reading of a temperature or humidity sensor in the current moment of time.

Threshold, deg.C or % rel.hum. – is a value of a temperature or a relative humidity that is supported by a thermo(hygro)stat (in whole degrees of Celsius, a value can be negative). On default: 20

Hysteresis, 1..8 deg.C or % rel.hum. – a hysteresis sets a «dead zone» near a specified temperature or a relative humidity, within which a thermo(hygro)stat does not register fluctuations. This feature allows avoiding frequent random switching, for example, of a heater (cooler) caused by natural spontaneous fluctuations of a temperature or a relative humidity. If a current status of a thermo(hygro)stat is «above (threshold M)», then a threshold for switching a status is a specified temperature or a relative humidity, decreased on a hysteresis value. And vice versa, if a current status is «below (threshold M)», then a threshold for switching is a specified temperature or relative humidity, increased on a hysteresis value. As soon as a temperature or a relative humidity reaches the threshold (taking a hysteresis into account) when rising or falling and thus leaves the threshold of a «corridor», a status of a thermo(hygro)stat is changed to the opposite one. On default: 2

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Temperature value degrees C

random temperature fluctuations around the threshold do not cause the status change as soon as the efffective threshold (н) is shifted for the hysteresis value, i.e. +/- 1 degree at the status change

Temp	Label																effective theshold
26																	
25																	
24																	
23																	
22																	
21	bottom threshold + 1	H	H	H	H	H	H							H	H		
20	bottom threshold of the normal range																hysteresis +/- 1 degree
19	bottom threshold - 1							H	H	H	H	H	H				
18																	
17																	
16	sensor temperature																
15																	
status		below	below	below	below	below	normal	normal	normal	normal	normal	в норме	below	below	below	

Status – is a status of channels of a thermo(hygro)stat «TSTAT 1», «TSTAT 2». It can have the next values: «sensor failed», «above (threshold M)», «below (threshold M)».

After setting the values, there is a need to click the button «Apply changes».

After configuring a thermo(hygro)stat, there is a need to configure a rule in the module «Logic». It is possible to learn how to do this from the section «[ENG] 10.2. [DKSF 52/202.10 IU] How to Use the Module «Logic»?».

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[ENG] 10.4. [DKSF 52/202.10 IU] How to Configure Pinger in the Module «Logic»?

To configure a pinger, there is a need to go to the page «LOGIC» of a device web interface:

In the section «Pinger» it is possible to configure the testing of the availability of a specified IP address/DNS name via the network. A result of testing (pinger status) can be chosen as an «input» to the logic rule. It is possible to learn how to configure a rule in the module «Logic» from the section «[ENG] 10.2. [DKSF 52/202.10 IU] How to Use the Module «Logic»?». It is possible to configure no more than two pingers – «PINGER 1», «PINGER 2». A typical use of a pinger is automatic switching on a power of a backup equipment when a connection line fails.

where:

Address – is an IP address/DNS name of a device, tested for availability. An empty line disables polling. On default: empty line

Polling period, s (5-900) – a value is chosen taking into account how rapidly the failure must be discovered. Also, there is a need to note that too frequent switching of power can decrease a lifetime of the equipment. If there is no response, ICMP echo (ping) is repeated after timeout is over and not when there is the next polling period. On default: 15

Ping timeout, ms (100-10000) – is a time of waiting for a response to ping. Timeout is chosen when taking into consideration a speed of local network operation and the frequency of repeating unresponded pings. If there is no response to ping when a specified timeout is over, then sending ping is repeated immediately. If after five repeated sending there is no response, a status of a pinger is changed to «silent», and repeats are stopped until the next polling period starts. On default: 1000

Status – possible values are: «responds», «silent», «-». If polling is not completed, a status can be undefined. In this case, the rules that depend on a pinger status do not create any commands and their outputs are managed by other rules or are kept in the previous status. A pinger status is updated automatically nearly four times a minute.

If domain names are used, there is a need to note that the module «Logic» will not be able to determine the availability of a requested address because of the unavailability of a DNS server or a lack of an IP address in the settings. «Pinger» is switched to the status «silent».

After the values of a pinger are set, there is a need to click the button «Apply changes».

[ENG] 10.5. [DKSF 52/202.10 IU] What Is SNMP SETTER?

SNMP Setter is used as an output for the rule of the module «Logic» and is designed to set an SNMP OID variable on a remote device via an SNMP v1 protocol. In particular, it is possible to manage IO lines, relays, and other parameters of a remote NetPing device through a network.

To configure SNMP SETTER, there is a need to go to the page «LOGIC» of a device web interface:

In the section «SNMP SETTER» the next parameters are configured:

Channel number («SNMP 1», «SNMP 2») – this number is specified as an «output» of a logic rule.

Memo – is a random text up to 30 characters. On default: empty line

Address – is an IP address, where an SNMP SET command will be sent. On default: empty line

UDP Port – is a port that listens to an SNMP agent on a remote device. On default: 161

OID (.1.3.6...) – is an identifier of a variable that will be specified on a remote device. There is a need to indicate a full OID in a numeric notation, starting from .1.3… A list of variables is contained in the MIB file from a device in a specific format or in the documentation from a device. To browse the MIB file conveniently, as a tree and check the functions of variables, it is possible to use the freeware iReasoning MIB Browser or any other similar software. On default: .1.3.6.1.4.1.25728.5800.3.1.3.1

Community – SNMP Community for write that is configured on a remote device. On default: empty line

«On» value (type Integer32) – is a value that will be written in OID on a remote device when evoking the action «On», by clicking the button «On» or through an «output» of a logic rule. A type of a value is 32-bit integer number with a sign. On default: 1

«Off» value (type Integer32) – is a value that will be written in OID on a remote device when evoking the action «Off», by clicking the button «Off» or through an «output» of a logic rule. A type of a value is 32-bit integer number with a sign. On default: 0

Test it – when clicking the buttons «On» and «Off» a device immediately sends corresponding requests with the values «On» or «Off».

Status – several seconds after sending a request to set a variable, in the field «Status» a result «OK» is displayed. This means that a confirmation is received and a variable is successfully set. «Timeout» means that a confirmation is not received yet. This can happen because of unavailability of a controlled device, its failure, incorrect IP address, port or community. A dash «-» means that an SNMP SETTER did not send a command yet or a status is not determined in a request. «Waiting for a response» means that an SNMP SETTER sent a command to a remote device and waits to receive a response. Other variants mean that a response with the error code has been received, a textual description of which is displayed in a status line.

After changing settings, click the button «Apply changes».

After configuring SNMP SETTER, there is a need to configure a rule in the module «Logic». It is possible to learn how to do this from the section «[ENG] 10.2. [DKSF 52/202.10 IU] How to Use the Module «Logic»?».

[ENG] 10.6. [DKSF 52/202.10 IU] Reset Signal and Initial Statuses of Outputs

When firmware starts operating or when the button «Reset» is clicked at the page «LOGIC» of a device web interface, the outputs controlled by logic are returned to the initial status. On default, this status is «off» or «logic 0». Another status can be set using the rule at the page «LOGIC», which uses reset signal «RESET» as an input.

After the firmware restarts, a logic configuration is saved or the button «Reset» is clicked at the page of a logic, there is a pause for 5 seconds. Then, after these 5 seconds the reset signal «RESET» is activated.

A rule with a condition «If RESET = logic 1» is activated 5 seconds after a reset.
A rule with a condition «If RESET = logic 0» is activated 10 seconds after a reset.
A rule with a condition «While RESET = logic 1» is active for 5 seconds 5 seconds after a pause.
A rule with a condition «While RESET = logic 0» is always active except for 5 seconds of resetting period.

Therefore, it is possible to form a 5-second external reset pulse on one or several outputs or provide a correct sequence of power supply to external devices.

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[ENG] 10.7. [DKSF 52/202.10 IU] Connecting Relays and IO Lines

Besides indicating a relay or an IO line as an «output» for a rule of a module «Logic», there is a need to specify that the relay or the IO line will be used together with the logic module.

Control of Relays

	Relay 1	Relay 2
Memo (up to 30 chars)		
Source of control	Manual On ▼	Manual On ▼
Switch On for short time (5s)	Manual Off	On
	Manual On	
Switch Off for short time (5s)	Watchdog	Off
	Schedule	
Relay state	Sched+Wdog	On
	Logic	
		Apply changes

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Discrete Input-Output

Parameter	IO 1	IO 2	IO 3	IO 4
Memo				
IO Mode	Input ▼	Input ▼	Input ▼	Input ▼
Filter out short noise pulses (20-10 000ms)	500	Input	500	500
Input Logic Level	1	Output	1	1
		Output of Logic		
Actions on Logic Level Change				
Write to Log	☐	☐	☐	☐
SNMP Trap on 0 » 1	☐	☐	☐	☐
SNMP Trap on 1 » 0	☐	☐	☐	☐
Output Logic Level				
Logic 1	○	○	○	○
Logic 0	◉	◉	◉	◉
Single Pulse generation				
Pulse Duration (100-25 500ms, step 100ms)	1000	1000	1000	1000
Start Single Pulse	Pulse	Pulse	Pulse	Pulse

Apply changes

[ENG] 10.8. [DKSF 52/202.10 IU] IR Commands

It is possible to control a rule of the module «Logic» by issuing an IR command through an external module IRC-TR v2. Before there is a need to record necessary commands from a remote (remotes) into the cells 1..4 of the module IRC-TR v2.

A rule «If … turn on» initiates reproducing an IR command. The rule «While … keep turned off» prohibits issuing an IR command. Rules of another type must not be used together with an IR command.

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[ENG] 10.9. [DKSF 52/202.10 IU] Examples of Configuring the Module «Logic»

At this page, several simplest examples of configuring the module «Logic» are represented.

> It goes without saying, necessary sensors, as well as external management modules, are already connected to NetPing devices and NetPing devices are previously configured for performing their specific tasks.

CONFIGURING A THERMOSTAT

A NetPing device with a connected external temperature sensor allows to implement functions of a thermostat, supporting a specified range of temperatures by turning on/off a device for heating and/or cooling in the automatic mode.

Task: It is necessary to maintain a temperature of 20°C indoors.

Solution: Let us suppose that an electric heater, which warms a certain room, is connected to a controllable socket №1 of a NetPing device. There is an air conditioner in the room, which is managed by an external IR management module IRC-TR v2. For automation of controlling a heater and an air conditioner to maintain a necessary temperature, there is a need to go to the page «LOGIC» of a device web interface:

There is a need to check checkboxes for first four rules and configure the next settings:

These rules mean that if a temperature in a thermostat 1 (TSTAT1) will exceed a specified one (i.e. above 20°C), an electric heater will be turned off automatically (RELAY 1) and an air conditioner will be turned on the same automatically (IR 1) (rules №1 and №3). To avoid frequent turning on/turning off a heater and an air conditioner, there is a switching hysteresis in a thermostat, which will be described below. If a temperature will fall below a specified value, an air conditioner will be turned off (IR 2) and a heater will be turned on (RELAY 1) (rules №2 and №4).

After setting up the rules, there is a need to click the button «Apply changes».

The next step is a configuration of the module «THERMO(HYDRO)STAT», on the basis of which previously configured rules will work:

THERMO(HYDRO)STAT

	TSTAT 1	TSTAT 2
Sensor	Thermo 1 ▾	Thermo 1 ▾
Current value, deg.C or % rel.hum.	-	-
Threshold, deg.C or % rel.hum.	20	20
Hysteresis, 1..8 deg.C or % rel.hum.	2	2
Status	Sensor is failed	Sensor is failed

Apply changes

A temperature sensor №3 is used to measure a temperature indoors. In the module «THERMO(HYDRO)STAT» there is a need to configure TSTAT1 by choosing a sensor №3 from a drop-down list. Then specify a threshold of 20°C and a switching hysteresis of 2°C.

A hysteresis sets a «corridor» around a specified temperature, within which a thermostat does not respond to temperature fluctuations. This function allows to avoid frequent random switching of a heater (a cooler) caused by natural spontaneous fluctuations of a temperature measured by a temperature sensor.

 If a current status of a thermostat is «above», then a threshold for switching a status is a specified temperature minus a hysteresis value. And vice versa, if a current status is «below», then a threshold for switching is a specified temperature plus a hysteresis value. As soon as a temperature falls or rises and reaches a threshold value including hysteresis thus leaving the limits of «corridor», a status of a thermostat is changed to the opposite one.

After configuring a thermostat, there is a need to click the button «Apply changes».

Recording, saving and replaying IR commands to control an air conditioner is indicated in the corresponding section of a user guide (works for devices supporting an IR control module IRC-TR v2).

Except indicating a relay as an «output» of a rule, there is a need to indicate that this relay will be used together with a logic module. To do this, there is a need to go to the page «220V MANAGEMENT» of a device web interface and choose a management mode «Logic»:

Control of Relays

HOME | SETUP | RELAYS | WATCHDOG | SCHEDULE 1 | SCHEDULE 2 | SMS
TEMPERATURE | DISCRETE IO | IR COMMANDS | LOGIC | FIRMWARE | LOG

	Relay 1	Relay 2
Memo (up to 30 chars)		
Source of control	Manual On ▾	Manual On ▾
Switch On for short time (5s)	Manual Off	On
Switch Off for short time (5s)	Manual On	Off
Relay state	Watchdog	On ▮
	Schedule	
	Sched+Wdog	Apply changes
	Logic	

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After changing a management mode, there is a need to click the button «Apply changes».

The last step of configuration is starting logic on a corresponding page of a web interface by clicking the button «Start»:

LOGIC

Logic control is stopped (not active)

1 ☑	On ▾	TSTAT 1 ▾	Above Threshold ▾	Switch off ▾	RELAY 1 ▾	Move up	Move down
2 ☑	On ▾	TSTAT 1 ▾	Below Threshold ▾	Switch on ▾	RELAY 1 ▾	Move up	Move down
3 ☑	On ▾	TSTAT 1 ▾	Above Threshold ▾	Switch on ▾	IR 1 ▾	Move up	Move down
4 ☑	On ▾	TSTAT 1 ▾	Below Threshold ▾	Switch on ▾	IR 2 ▾	Move up	Move down
5 ☐	While ▾	IO 1 ▾	= Logic 1 ▾	Keep switched off ▾	IO 1 ▾	Move up	Move down
6 ☐	While ▾	IO 1 ▾	= Logic 1 ▾	Keep switched off ▾	IO 1 ▾	Move up	Move down
7 ☐	While ▾	IO 1 ▾	= Logic 1 ▾	Keep switched off ▾	IO 1 ▾	Move up	Move down
8 ☐	While ▾	IO 1 ▾	= Logic 1 ▾	Keep switched off ▾	IO 1 ▾	Move up	Move down

Reset | Start | Stop | Apply changes

EXAMPLE OF WARNING ALARM WHEN A SHOCK SENSOR TRIGGERED

A NetPing device, to which shock sensor PI-90D and siren alarm AC-10 are connected, can perform security functions for remote objects and closets with equipment.

Task: Organising a warning alarm for a remote control of a security guard when breaking a wiring closet with equipment.

Solution: Let us suppose that shock sensor PI-90D, which is installed into a closet with equipment, is connected to the IO line №2 of a NetPing device, while siren alarm AC-10, which is displayed at a remote control of a security guard, is connected to the Relay 1. To configure NetPing for security measures, there is a need to set the next rules in the module «Logic»:

1 ☑	While ▾	IO 2 ▾	= Logic 0 ▾	Keep switched on ▾	RELAY 1 ▾	Move up	Move down
2 ☑	While ▾	IO 2 ▾	= Logic 1 ▾	Keep switched off ▾	RELAY 1 ▾	Move up	Move down

These rules mean when the shock sensor PI-90D (IO 2) triggers, then a warning alarm AC-10 (RELAY 1) will be activated (rule №1) until a level of an IO line №2 has got a value «logic 1» (rule №2).

After setting up rules, there is a need to click the button «Apply changes».

The next step is a necessity to configure an operation mode of an IO line at the page «INPUT-OUTPUT» of a device web interface. An IO line must work in the mode «input»:

Discrete Input-Output

HOME | SETUP | RELAYS | WATCHDOG | SCHEDULE 1 | SCHEDULE 2 | SMS
TEMPERATURE | DISCRETE IO | IR COMMANDS | LOGIC | FIRMWARE | LOG

Parameter	IO 1	IO 2	IO 3	IO 4
Memo				
IO Mode	Input ▾	Input ▾	Input ▾	Input ▾
Filter out short noise pulses (20-10 000ms)	500	500	500	500
Input Logic Level	1 ▪	1 ▪	1 ▪	1 ▪
Actions on Logic Level Change				
Write to Log	☐	☐	☐	☐
SNMP Trap on 0 » 1	☐	☐	☐	☐
SNMP Trap on 1 » 0	☐	☐	☐	☐
Output Logic Level				
Logic 1	○	○	○	○
Logic 0	◉	◉	◉	◉
Single Pulse generation				
Pulse Duration (100-25 500ms, step 100ms)	1000	1000	1000	1000
Start Single Pulse	Pulse	Pulse	Pulse	Pulse

Apply changes

Besides indicating a relay as an «output» for a rule, there is a need to specify that this relay will be used together with a logic module. To do this, there is a need to go to the page «220V MANAGEMENT» of a device web interface and choose a relay management mode «Logic»:

Control of Relays

	Relay 1	Relay 2
Memo (up to 30 chars)		
Source of control	Manual On ▼	Manual On ▼
Switch On for short time (5s)	Manual Off	On
Switch Off for short time (5s)	Manual On	Off
Relay state	Watchdog	On ▮
	Schedule	
	Sched+Wdog	
	Logic	Apply changes

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After choosing a source of control for a relay, there is a need to click the button «Apply changes».

The last step of configuration is starting logic at the corresponding page of a web interface by clicking the button «Start»:

LOGIC

Logic control is stopped (not active)

1 ☑	On ▼	IO 2 ▼	= Logic 0 ▼	Switch on ▼	RELAY 1 ▼	Move up	Move down
2 ☑	On ▼	IO 2 ▼	= Logic 1 ▼	Switch off ▼	RELAY 1 ▼	Move up	Move down
3 ☐	While ▼	IO 1 ▼	= Logic 1 ▼	Keep switched off ▼	IO 1 ▼	Move up	Move down
4 ☐	While ▼	IO 1 ▼	= Logic 1 ▼	Keep switched off ▼	IO 1 ▼	Move up	Move down
5 ☐	While ▼	IO 1 ▼	= Logic 1 ▼	Keep switched off ▼	IO 1 ▼	Move up	Move down
6 ☐	While ▼	IO 1 ▼	= Logic 1 ▼	Keep switched off ▼	IO 1 ▼	Move up	Move down
7 ☐	While ▼	IO 1 ▼	= Logic 1 ▼	Keep switched off ▼	IO 1 ▼	Move up	Move down
8 ☐	While ▼	IO 1 ▼	= Logic 1 ▼	Keep switched off ▼	IO 1 ▼	Move up	Move down

Reset | Start | Stop | Apply changes

[ENG] 11. [DKSF 52/202.10 IU] Working with the Module «Watchdog»

[ENG] 11.1. [DKSF 52/202.10 IU] What Is «Watchdog» and How to Configure It?

«Watchdog» is a specific operating mode of a power supply channel within which indicated addresses are constantly requested by ping (ICMP Echo) with a certain frequency. If there is no response, a device which is connected to a socket of a power supply channel will reboot.

> If specified IP addresses are not within a range of IP subnetwork of a device, there is a need to indicate a gateway address to the external network at the page «SETUP» of a device web interface.

To configure the module «Watchdog», there is a need to go to the page «WATCHDOG» of a device web interface:

where:

What is connected (memo, up to 30 characters) – a description of a relay which is entered into the field «Memo» at the page «RELAY MANAGEMENT» of a device web interface.

Enable Polling of Addresses A, B, C – is a set of check boxes which allow to specify addresses for polling individually. On default: checkboxes are not checked

> If no checkbox is checked or IP addresses for checked checkboxes are not indicated, polling will not be performed, therefore, the mode «Watchdog» will be disabled.

Address A (B, C) – is a field to view or change addresses for polling. It is possible to indicate an IP address as well as a domain name. It is possible to configure up to three addresses. An empty field disables polling. On default: address is not specified

Reset counter (zeroed when firmware reloads) – is an informational field which shows how many times a channel has been rebooted as a result of actions of the module «Watchdog». A counter does not include manual reboots. A counter is reset when a power supply is cut off NetPing device.

Ping Polling Period, s (10-300) – is a field used to specify a period of time within which repeated pings are sent to the indicated IP addresses after receiving a response from them. On default: 10 s

Ping Timeout, ms (600-9000) – is a field used to specify a timeout before repeating ping. A value must exceed a usual time needed to respond to

ping for the network with a certain reserve to avoid false triggering of the module «Watchdog». <u>On default</u>: 1000 ms

Max Ping Repeats after Timeout - is a field used to specify a maximum number of attempts to receive a response to «ping». If an amount of attempts is over, an IP address is considered «silent». It is desirable to have a period of polling repeat longer than ping timeout multiplied by a maximum number of attempts. If this condition is not fulfilled, then a new cycle of polling will be postponed until an indicated amount of attempts is over. <u>On default</u>: 8

Reset Duration, s (1-900) – is a field for setting up time for which a device connected to a power supply socket is cut off power to initiate reset and reboot. <u>On default</u>: 4 s

Ping Polling Pause after Reset, s (1-900) – is a field for setting up time for which polling is paused after turning on a power supply socket. The pause is necessary for a device to load, initialize and restore the functioning of its network interfaces. Otherwise, it is possible for the mode «Watc hdog» to trigger endlessly. <u>On default</u>: 15 c

Limit Number of Reset Retries (0 off, 1-255) – is a field for setting a number of consequent unsuccessful resets, after which the functioning of the load is not restored and there is still no response to ping. This situation may happen if the load stably fails, and its work is impossible to be restored by power switching on-switching off. When the limit is reached, resets are stopped but the periodic pinging is continued. Resets are unlocked when a response to ping is received. Stopping of resets and restoring of a regular operation order after a response to ping are registered in a log. The value «0» of this parameter disables the limit. <u>On default</u>: 0

Reset Polarity – is a field which allows to indicate what exactly will be done to reset a connected load: «Relay Off» or «Relay On» for an output power supply socket. <u>On default</u>: Relay Off

Reset Condition Logic – determines a condition within which a reset of a device connected to a power supply channel will be done.

No reply from any of address (A, B, C) – a connected device will be reloaded if at least one of addresses have not responded.

No reply from all of addresses (A, B, C) – a connected device will be reloaded only if all indicated addresses for polling have not responded.

No reply from address A and from One of B or C – a connected device will be reloaded if an address A has not responded together with either address B or C, or both B and C.

No reply from address A, but B or C replies – a connected device will be reloaded only if an address A has not responded, but address B or address C has. I.e. if all addresses do not respond, a reset of a connected device will not be done.

After setting all necessary parameters, click the button «Apply changes» for a device to execute a command. If any parameter will be set incorrectly, it will be highlighted with red:

Reset Counter (cleared on firmware reboot)	0
Ping Polling Period, s (10-300)	1
Ping Timeout, ms (600-9000)	1000
Max Ping Repeats after Timeout	8

There is a need to correct a value of a parameter and click the button «Apply changes» once more.

[ENG] 12. [DKSF 52/202.10 IU] Working with the Module «Schedule»

[ENG] 12.1. [DKSF 52/202.10 IU] What Is «Schedule», and How to Configure It?

The module «Schedule» allows setting a schedule according to which a relay will be switched on and switched off.

To use the module «Schedule», there is a need to switch a relay to the mode «Schedule» or «Schedule+Watchdog» on the page «RELAYS» of a device web interface. To configure the module «Schedule», there is a need to go to the page «SCHEDULE 1» or «SCHEDULE 2» of a device web interface:

Schedule

HOME | SETUP | E-MAIL | RELAYS | WATCHDOG | SCHEDULE 1 | SCHEDULE 2
TEMPERATURE | HUMIDITY | DISCRETE IO | IR COMMANDS | LOGIC | FIRMWARE | LOG

STATUS

Local Clock	19:56:36, Teu, 27 Dec 2016
Local Time Shift	UTC+8
NTP Status	Time is set from primary NTP server

DEFAULT RELAY STATE

Relay State if Local Time is not set properly	Permanent Off ▼

Apply changes

WEEKLY SCHEDULE(FOR RELAY 1)

	On	Off	On	Off	On	Off	On	Off	Same as prev. day
Mon	00:00	16:39	**16:41**	-	-	-	-	-	
Teu	00:00	16:39	16:41	-	-	-	-	-	✔
Wed	00:00	16:39	16:41	-	-	-	-	-	✔
Thu	00:00	16:39	16:41	-	-	-	-	-	✔
Fri	00:00	16:39	16:41	-	-	-	-	-	✔
Sat	00:00	16:39	16:41	-	-	-	-	-	✔
Sun	00:00	16:39	16:41	-	-	-	-	-	✔
Aux 1	-	-	-	-	-	-	-	-	
Aux 2	-	-	-	-	-	-	-	-	
Aux 3	-	-	-	-	-	-	-	-	

Use time format hh:mm (24h!)

Apply Changes

HOLIDAY'S SUBSTITUTION

Date	31.12	-	-	-	-	-	-	-
Substitute	Aux 1 ▼	Mon ▼	Mon ▼	Mon ▼	Mon ▼	Mon ▼	Mon ▼	Mon ▼

Use date format dd.mm

Apply Changes

STATUS

Local Clock – shows a current time, day of the week and a date.

Local Time Shift – is a timezone. It is configured on the page «Setup» of a device web interface.

NTP Status – displays a status of time synchronization via an NTP protocol. Addresses of NTP servers are configured on the page «Setup» of a device web interface.

WEEKLY SCHEDULE

In the section «Weekly schedule (Channel 1)/(Channel 2)» a schedule is specified for controlling a relay. For each day of the week, it is possible to configure four intervals of switching a relay on/off.

An interval begins at the time of switching a relay on (a column «On») and ends at the time of switching it off (a column «Off»). Time is specified in the format «hh:mm» in the range 00:00 – 23:59. Time must increase from left to right: in an interval, a time of switching on must take place before the time of switching off, and the time of switching on in the interval 2 must take place after the time of switching off in the interval 1. The

cells can be left empty, in this case, the next not empty cell will work. For example, it is acceptable to switch on on «MON» and switch off on «FRI».

A column «Same as prev. day» allows applying of the schedule of a previous day to a current day in one click, thus simplifying a configuration of a schedule. Check a corresponding checkbox to apply a schedule of a previous day to a current day.

Action time («On» or «Off») that has been executed the last, is displayed on the page in bold, which allows determining what actions and in what interval will be performed quickly.

After setting all necessary parameters, there is a need to click the button «Apply changes».

HOLIDAYS SUBSTITUTION

The lines «Aux 1», «Aux 2», «Aux 3» allow setting a special schedule for holidays. These schedules are linked to holidays in the section «Holidays' Substitution».

The section «Holdiays' Substitution» allows setting a special schedule for holidays or link a schedule of any work day to a holiday. It is possible to save up to eight holidays in a memory of a device.

In the line «Date» a date of a holiday is indicated in the format «dd.mm» in the range 01.01 – 31.12.

in the line «Substitute» a schedule is indicated that will be used on this day. A drop-down list allows choosing the next variants: «MON», «TUE», «WED», «THU», «FRI», «SAT», «SUN», «AUX 1», «AUX 2», «AUX 3».

After setting all necessary parameters, there is a need to click the button «Apply changes».

DEFAULT RELAY STATE

A relay state when the setting of the clock failed determines a reaction of a relay in the moment of a time reset in the built-in clock of a device. The next modes are possible: «Permanent On», «Permanent Off», «Ignore Failure».

> This setting is activated when the clock is reset to the date before 2000. If the clock is reset to the date after 2000, then a device will not use this setting.

Permanent On – when resetting the clock, a relay is always switched on regardless a configured schedule.

Permanent Off – when resetting the clock, a relay is always switched off regardless a configured schedule.

Ignore failure – when resetting the clock, a relay continues to work on the basis of a configured schedule.

After setting all necessary parameters, there is a need to click the button «Apply changes».

[ENG] 13. [DKSF 52/202.10 IU] Support of an SNMP Protocol by a Device

NetPing server room environmental monitoring solutions and IP power distribution units.

[ENG] 13.1. [DKSF 52/202.10 IU] Can I Control a Device Using SNMP?

The devices NetPing 2/PWR-220 v3/ETH and NetPing 2/PWR-220 v2/SMS support configuring parameters and management via an SNMP v1 protocol.

More detailed information about an SNMP protocol can be read on the next links:

- https://en.wikipedia.org/wiki/Simple_Network_Management_Protocol
- http://www.snmp.com/

OID that are supported by the devices can be found in the MIB files DKSF_52.10.x_ MB.mib, DKSF_202.10.x_ MB.mib on the pages of a description of devices in the section «Documentation and Files»:

- NetPing 2/PWR-220 v3/ETH
- NetPing 2/PWR-220 v2/SMS

Devices support:

- Reading OID using Get, Get-Next requests via an SNMP v1 protocol;
- Setting the OID values using the command Set via an SNMP v1 protocol;
- Sending TRAP notifications on the events

[ENG] 13.2. [DKSF 52/202.10 IU] Configuration of Sending SNMP TRAP Notifications

To access a device via an SNMP v1 protocol, there is a need to configure the next parameters using a device web interface:

- Community for Read – is a password that is necessary to indicate in any request for reading parameters via an SNMP protocol. It is specified in the section «Access Restrictions» on the page «SETUP» of a device web interface;
- Community for Write – is a password that is necessary to indicate in any request for writing parameters via an SNMP protocol. It is specified in the section «Access Restrictions» on the page «SETUP» of a device web interface.

ACCESS RESTRICTIONS

Username	visor24
Password	••••••
SNMP Community for Read	ping24
SNMP Community for Write	ping24
IP Filter (access granted for this subnet)	0.0.0.0
IP Filter Netmask (0.0.0.0 - disable filter)	0.0.0.0

Apply changes

To send TRAP notifications by a device via an SNMP v1 protocol, there is a need to configure the next parameters using a web interface:

- SNMP Trap Destination #1 – is an IP address, where TRAP notifications will be sent. It is specified on the page «SETUP» of a device web interface;
- SNMP Trap Destination #2 – is the second (auxiliary) IP address, where TRAP notifications will be sent. It is specified on the page «SET UP» of a device web interface;

SNMP TRAP

SNMP Trap Destination #1	
SNMP Trap Destination #2	

Apply Changes

- Front (level change 0->1) – is a checkbox that allows sending SNMP TRAP notifications when a logic level of an IO line in the mode «input», «output», «logic output» is changed from low to high (signal front). It is configured by the button «Setup» on the page «DISCRETE IO» of a device web interface;
- Decay (level change 1->0) – is a checkbox that allows sending SNMP TRAP notifications when a logic level of an IO line in the mode «input», «output», «logic output» is changed from high to low (signal decay). It is configured by the button «Setup» on the page «DISCRETE IO» of a device web interface;

NOTIFICATIONS FOR IO LINE 2

Event	Log	Syslog	E-mail	SMS	SNMP Trap
Front (level change 0->1)	☐	☐	☐	.	☐
Decay (level change 1->0)	☐	☐	☐	.	☐
Include in Summary Report	.	.	☐	.	.

Logic level	Legend
Logic 1	
Logic 0	

Cancel   Save

- Temperature is above safe range – is a checkbox that allows sending SNMP TRAP notifications when the upper threshold of a

temperature indicated for the sensor is exceeded. It is configured by the button «Setup» on the page «TEMPERATURE» of a device web interface;

- Temperature is in safe range – is a checkbox that allows sending SNMP TRAP notifications if a temperature on the temperature sensor is back to a specified range. It is configured by the button «Setup» on the page «TEMPERATURE» of a device web interface;
- Temperature is below safe range – is a checkbox that allows sending SNMP TRAP notifications when a temperature falls below a threshold indicated for the sensor. It is configured by the button «Setup» on the page «TEMPERATURE» of a device web interface;
- Sensor fault – is a checkbox that allows sending SNMP TRAP notifications when a sensor fails, for example, when it is faulty. It is configured by the button «Setup» on the page «TEMPERATURE» of a device web interface;

NOTIFICATIONS FOR TEMPERATURE SENSOR 1

Event	Log	Syslog	E-mail	SMS	SNMP Trap
Temperature is above safe range	☐	☐	☐	.	☐
Temperature is in safe range	☐	☐	☐	.	☐
Temperature is below safe range	☐	☐	☐	.	☐
Sensor fault	☐	☐	☐	.	☐
Include in Summary Report	.	.	☐	.	.

Cancel   Save

- Humidity is above Safe range – is a checkbox that allows sending SNMP TRAP notifications when the value of the upper threshold of a normal humidity range specified for the sensor is exceeded. It is configured by the button «Setup» on the page «HUMIDITY» of a device web interface;
- Humidity is in Safe range – is a checkbox that allows sending SNMP TRAP notifications if a relative humidity at the humidity sensor is back to a specified range. It is configured by the button «Setup» on the page «HUMIDITY» of a device web interface;
- Humidity is below Safe range – is a checkbox that allows sending SNMP TRAP notifications when the value of the bottom threshold of a normal humidity range specified for the sensor is decreased. It is configured by the button «Setup» on the page «HUMIDITY» of a device web interface;
- Sensor Fault – is a checkbox that allows sending SNMP TRAP notifications when the sensor does not operate because of failure, etc. It is configured by the button «Setup» on the page «HUMIDITY» of a device web interface;

NOTIFICATIONS FOR RELATIVE HUMIDITY SENSOR

Event	Log	Syslog	E-mail	SMS	SNMP Trap
Humidity is above Safe range	☐	☐	☐	.	☐
Humidity is in Safe range	☐	☐	☐	.	☐
Humidity is below Safe range	☐	☐	☐	.	☐
Sensor Fault	☐	☐	☐	.	☐
Include in Summary Report	.	.	☐	.	.

Cancel   Save

- Switching On/Off – is a checkbox that allows sending SNMP TRAP notifications when a relay is switched to the status «Off» or «On». It is configured by the button «Setup» on the page «RELAYS» of a device web interface;
- Change of Source of Control – is a checkbox that allows sending SNMP TRAP notifications when the management mode of a relay is changed («Manual On», «Manual Off», «Watchdog», «Schedule», «Schedule+Watchdog», «Logic»). It is configured by the button «Setup» on the page «RELAYS» of a device web interface;
- Reset (Flip for Short Period) – is a checkbox that allows sending SNMP TRAP notifications during short-term switching on/off a relay. It is configured by the button «Setup» on the page «RELAYS» of a device web interface;
- Use common snmpTrapOID for all events and Use common snmpTrapOID for all Sensor Numbers – are checkboxes that allow sending SNMP TRAP notifications for all events from all built-in relays in a single snmpTrapOID notification or allow dividing events and numbers

of relay channels among different snmpTrapOID notifications, up to totally individual ones. It allows receiving individual SNMP Trap notifications for processing them in monitoring systems. They are configured by the button «Setup» on the page «RELAYS» of a device web interface.

[ENG] 13.3. [DKSF 52/202.10 IU] What OID Are Supported by a Device?

A description of OID, supported by a device is provided in the table:

OID	Name	Type	Access	Description
RFC1213				
.1.3.6.1.2.1.1.1.0	sysDescr	OctetString	READ	A textual description of a device with the firmware version
.1.3.6.1.2.1.1.2.0	sysObjectID	OID	READ	A number of a branch with the parameters of a device is always «.1.3.6.1.4.1.25728»
.1.3.6.1.2.1.1.3.0	sysUpTime	TimeTicks	READ	Time from the moment of the last switching on a device
.1.3.6.1.2.1.1.4.0	sysContact	OctetString	READ/WRITE	Contact data, usually an administrators email
.1.3.6.1.2.1.1.5.0	sysName	OctetString	READ/WRITE	A domain name of a device
.1.3.6.1.2.1.1.6.0	sysLocation	OctetString	READ/WRITE	Location of a device
.1.3.6.1.2.1.1.7.0	sysServices	Integer	READ	Binary representation of this OID is a set of supported services. It is always «72», a device plays a role of a final host
.1.3.6.1.2.1.2.1.0	ifNumber	Integer	READ	The amount of network interfaces of a device
.1.3.6.1.2.1.2.2.1.1	ifIndex	Integer	READ	An interface index is a unique identification number, connected to a physical or logical interface. For the major part of the software, ifIndex is a name of the interface
.1.3.6.1.2.1.2.2.1.2	ifDescr	OctetString	READ	The line that contains the information about an interface.in the line, there is a name of a manufacturer, a model of a device and the hardware interface version
.1.3.6.1.2.1.2.2.1.3	ifType	Integer	READ	A type of a network interface type
.1.3.6.1.2.1.2.2.1.4	ifMtu	Integer	READ	A size of a package of the network interface. Always «1514»
.1.3.6.1.2.1.2.2.1.5	ifSpeed	Gauge	READ	Network interface speed. Always «100000000»
.1.3.6.1.2.1.2.2.1.6	ifPhysAddress	Physaddress	READ	MAC address of a device
NetPing MIB				
.1.3.6.1.4.1.25728.90.1.0	npTrapEmailTo	OctetString	READ	Variable included into traps. E-mail, to which notifications are forwarded by the NetPing message forwarding service
.1.3.6.1.4.1.25728.911.1.0	npSoftReboot	Integer	READ/WRITE	Software reboot of a device when writing the value «1» - is the analog to the device reboot through the web interface
.1.3.6.1.4.1.25728.911.2.0	npResetStack	Integer	READ/WRITE	Software reboot of a network interface when writing the value «1».
.1.3.6.1.4.1.25728.911.3.0	npForceReboot	Integer	READ/WRITE	Immediate forced reboot of a device when writing the value «1» (processor reset, the same as when switching the power on)
.1.3.6.1.4.1.25728.3800.1.1.0	npGsmFailed	Integer	READ	A status of a built-in GSM modem, for the devices NetPing 2/PWR-220 v2/SMS with a built-in GSM modem: 0 – OK 1 – Failed (no connection) 2 – FatalError (irrecoverable error, a modem is locked)
.1.3.6.1.4.1.25728.3800.1.2.0	npGsmRegistration	Integer	READ	A status of a connection to the GSM network, for the devices NetPing 2/PWR-220 v2/SMS with a built-in GSM modem: 0 – Impossible 1 – HomeNetwork 2 – Searching 3 – Denied 4 – Unknown 5 – Roaming 255 – InfoUpdate
.1.3.6.1.4.1.25728.3800.1.3.0	npGsmStrength	Integer	READ	A GSM signal strength, for the devices NetPing 2/PWR-220 v2/SMS with a built-in GSM modem: 0…31 = 0% … 100% 99 – Unknown 255 – Updating info

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.1.3.6.1.4.1.25728.3900.1.1.0	npBatteryPok	Integer	READ	A power source of a device (for the device NetPing 2/PWR-220 v2/SMS with a built-in battery): 0 – Battery power 1 – 220 V grid power
.1.3.6.1.4.1.25728.3900.1.2.0	npBatteryLevel	Integer	READ	Level of a battery charge, %, if a device works from the battery. For the device NetPing 2/PWR-220 v2/SMS with a built-in battery.
.1.3.6.1.4.1.25728.3900.1.3.0	npBatteryChg	Integer	READ	A status of a battery charge, for the device NetPing 2/PWR-220 v2/SMS with a built-in battery: 0 – Battery charging suspended 1 – Battery fast charging
.1.3.6.1.4.1.25728.5800.3.1.1.n	npPwrChannelN.n	Integer	READ	A relay index, where n is a relay number
.1.3.6.1.4.1.25728.5800.3.1.2.n	npPwrStartReset.n	Integer	READ/WRITE	Write «1» for reset. Relay n, where n is a relay number. When reading: 0 – Regular mode 1 – Reset 2 – Reboot
.1.3.6.1.4.1.25728.5800.3.1.3.n	npPwrManualMode.n	Integer	READ/WRITE	The operation mode of the relay n, where n is a relay number: 0 – Switching off – manual mode 1 – Switching on – manual mode 2 – «Watchdog» mode 3 – «Schedule» mode 4 – «Schedule+Watchdog» mode 5 – «Logic» mode
.1.3.6.1.4.1.25728.5800.3.1.4.n	npPwrResetsCounter.n	Integer	READ/WRITE	Reset counter in the mode «Watchdog». Relay n, where n is a relay number. For forced reboot, write «0»
.1.3.6.1.4.1.25728.5800.3.1.5.n	npPwrRepeatingResetsCounter.n	Integer	READ	A counter of continuous resets when a relay n works in the mode «Watchdog», where n is a relay number
.1.3.6.1.4.1.25728.5800.3.1.6.n	npPwrMemo.n	OctetString	READ	Memo relay n, where n is a relay number
.1.3.6.1.4.1.25728.5800.3.1.14.n	npPwrRelayFlip.n	Integer	READ/WRITE	This OID allows switching a relay n from the status «Off» to the status «On» and back, where n is a relay number. To change a relay status, write «-1». A relay must be set to one mode out of the two: «Manual on» or «Manual off»
.1.3.6.1.4.1.25728.5800.3.1.15.n	npPwrRelayState.n	Integer	READ	A current relay status, a status is read regardless a management mode, where n is a relay number: 0 – A relay is switched off 1 – A relay is switched on
.1.3.6.1.4.1.25728.5500.5.1.1.n	nRelayN.n	Integer	READ	Left for compatibility Relay index, where n is a relay number
.1.3.6.1.4.1.25728.5500.5.1.2.n	npRelayMode.n	Integer	READ/WRITE	Left for compatibility. The operation mode of a relay n, where n is a number of a relay: 0 – Switching off – manual mode 1 – Switching on – manual mode 2 – «Watchdog» mode 3 – «Schedule» mode 4 – «Schedule+Watchdog» mode 5 – «Logic» mode
.1.3.6.1.4.1.25728.5500.5.1.3.n	npRelayStartReset.n	Integer	READ/WRITE	Left for compatibility OID for forced immediate short term switching a relay off. Write the number «1» to switch the channel off for 15 seconds

.1.3.6.1.4.1.25728.5500.5.1.6.n	npRelayMemo.n	OctetString	READ	Left for compatibility Memo of a relay n, where n is a number of a relay
.1.3.6.1.4.1.25728.5500.5.1.14.n	npRelayFlip.n	Integer	READ/WRITE	Left for compatibility This OID allows switching a relay n from the status «Off» to the status «On» and vice versa, where n is a relay number. To change a relay status, write «-1». A relay must be switched to one of the two modes: «Manual on» or «Manual off»
.1.3.6.1.4.1.25728.5500.5.1.15.n	npRelayState.n	Integer	READ	Left for compatibility Current relay status, where n is a relay number: 0 – Relay is switched off 1 – Relay is switched on
.1.3.6.1.4.1.25728.7900.1.1.0	npIrPlayCmd	Integer	READ/WRITE	To send an IR command, write a number of the IR command
.1.3.6.1.4.1.25728.7900.1.2.0	npIrReset	Integer	READ/WRITE	To reset an IR transceiver, write «1» After the reset, indicate the IR command and check an IR status
.1.3.6.1.4.1.25728.7900.1.3.0	npIrStatus	Integer	READ	IR transceiver. The next statuses are available: commandCompleted (0) – a command is completed. A command that does not require any process for the execution. protocolError (1) – is an incorrect command code, or a command is not accepted. commandAccepted (2) – a command is accepted, the execution is started. After the completion of a command, its status is not changed because failures are impossible in this process. There is a need to wait nearly 0,5 seconds before sending the next command. errorUnknown (16) – is an unknown error. errorBadNumber (17) – is an incorrect parameter of a command. errorEmptyRecord (18) – is an attempt to reproduce an empty cell. errorFlashChip (19) – is the failure of a memory chip inside the IR extension module IRC-TR v2. errorTimeout (20) – there is no response from the IR extension module IRC-TR v2. errorExtBusBusy (21) – an external i2c bus is busy, it is impossible to connect to the IR extension module IRC-TR v2 (for example, at the bus short circuit).
.1.3.6.1.4.1.25728.8400.2.2.0	npRelHumSensorValueH	Integer	READ	Relative humidity value, %.
.1.3.6.1.4.1.25728.8400.2.3.0	npRelHumSensorStatus	Integer	READ	Humidity sensor status: 0 – Error or a sensor is not connected 1 – Norm
.1.3.6.1.4.1.25728.8400.2.4.0	npRelHumSensorValueT	Integer	READ	Temperature value, °C.
.1.3.6.1.4.1.25728.8400.2.5.0	npRelHumSensorStatusH	Integer	READ	Humidity sensor status: 0 – A sensor failed 1 – Readings of the sensor are below normal level 2 – Readings of a sensor are normal 3 – Readings of a sensor are above normal level
.1.3.6.1.4.1.25728.8400.2.7.0	npRelHumSafeRangeHigh	Integer	READ	A top threshold of the range of normal values for a humidity sensor
.1.3.6.1.4.1.25728.8400.2.8.0	npRelHumSafeRangeLow	Integer	READ	A bottom threshold of the range of normal values for a humidity sensor
.1.3.6.1.4.1.25728.8400.2.9.0	npRelHumSensorValueT100	Integer32	READ	A temperature value, multiplied by 100. It is used for taking the readings of a sensor with tenths and hundredths parts of a degree of Celsius. Divide this value by 100 to get a current temperature
.1.3.6.1.4.1.25728.8800.1.1.1.n	npThermoSensorN.n	Integer	READ	An identifier of a temperature sensor, a number from 1 to 8 inclusive
.1.3.6.1.4.1.25728.8800.1.1.2.n	npThermoValue.n	Integer	READ	A current temperature on a temperature sensor, degrees C where: n is a number of a sensor, a number from 1 to 8 inclusive

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.1.3.6.1.4.1.25728.8800.1.1.3.n	npThermoStatus.n	Integer	READ	A status of a temperature sensor:
				0 – Failure or is not connected
				1 – Below normal
				2 – Normal
				3 – Above normal
				where: n is a number of a sensor, a number from 1 to 8 inclusive.
.1.3.6.1.4.1.25728.8800.1.1.4.n	npThermoLow.n	Integer	READ	A top threshold of the range of normal values for a temperature sensor
				where: n is a number of a sensor, a number from 1 to 8 inclusive
.1.3.6.1.4.1.25728.8800.1.1.5.n	npThermoHigh.n	Integer	READ	A bottom threshold of the range of normal values for a temperature sensor
				where: n – is a number of a sensor, a number from 1 to 8 inclusive
.1.3.6.1.4.1.25728.8800.1.1.6.n	npThermoMemo.n	OctetString	READ	A memo for a temperature sensor
				where: n - is a number of a relay, a number from 1 to 8 inclusive
.1.3.6.1.4.1.25728.8900.1.1.1.n	npIoLineN.n	Integer	READ	A number of an IO line
.1.3.6.1.4.1.25728.8900.1.1.2.n	npIoLevelIn.n	Integer	READ	A current status of a line in the mode «input», «output» and «logic output»
				where: n – is a number of a line, a number from 1 to 4 inclusive
.1.3.6.1.4.1.25728.8900.1.1.3.n	npIoLevelOut.n	Integer	READ/WRITE	A status of a line in the mode «output».
				where: n – is a number of a line, a number from 1 to 4 inclusive
				In addition, this OID allows switching a status of an IO line from the status «0» to the status «1» and vice versa. To change a status of an IO line write «-1»
.1.3.6.1.4.1.25728.8900.1.1.6.n	npIoMemo.n	OctetString	READ	Memo (a brief description for an IO line)
				where: n – is a number of a line, a number from 1 to 4 inclusive
.1.3.6.1.4.1.25728.8900.1.1.9.n	npIoPulseCounter.n	Counter32	READ/WRITE	A pulse counter on an IO line. It is counted by the positive pulse front after the filtration o short pulses. For forced zeroing write «0». It is also zeroed when switching the power off
				where: n – is a number of a line, a number from 1 to 4 inclusive
.1.3.6.1.4.1.25728.8900.1.1.12.n	npIoSinglePulseDuration.n	Integer	READ/WRITE	A duration of one pulse on the output of an IO line (acceptable values from 100 ms to 25500 ms, with a step of 100 ms)
				where: n – is a number of a line, a number from 1 to 4 inclusive
.1.3.6.1.4.1.25728.8900.1.1.13.n	npIoSinglePulseStart.n	Integer	READ/WRITE	To issue a single pulse to the output of an IO line, write «1». A duration of a pulse is taken from the variable npIoSinglePulseDuration.n
				where: n - is a number of a line, a number from 1 to 4 inclusive

[ENG] 13.4. [DKSF 52/202.10 IU] SNMP TRAP Support

A formal description of SNMP TRAP notifications can be found in the MIB files DKSF_52.10.x_ MB.mib, DKSF_202.10.x_ MB.mib that are applied to the firmware of devices NetPing 2/PWR-220 v3/ETH and NetPing 2/PWR-220 v2/SMS. It is possible to download them from the pages of a site with a description of devices in the section «Documentation and Files». An SNMP TRAP notification is sent in an SNMP v1 format while the description in the MIB files has a format SNMP v2c.

An unambiguous mutual correspondence of identification of SNMP TRAP notifications for v1 and v2c is described in RFC3584 «Coexistence between Version 1, Version 2, and Version 3 of the Internet-standard Network Management Framework».

Usually, software applications for processing SNMP notifications convert between two formats without difficulties.

To send SNMP TRAP notifications, there is a need to:

- specify an IP address for sending SNMP TRAP on the page «SETUP» of a device web interface;
- allow sending SNMP TRAP notifications by switching on corresponding checkboxes, more detailed information is in the section «[ENG] 13.2. [DKSF 52/202.10 IU] Configuration of Sending SNMP TRAP Notifications»

SNMP TRAP WHEN CHANGING A LEVEL ON AN IO LINE IN THE «OUTPUT» MODE

Идентификация npIoTrap

SNMP v1 enterprise	.1.3.6.1.4.1.25728.8900.2
SNMP v1 generic-trap	enterpriseSpecific(6)
SNMP v1 specific-trap	1
SNMP v2 SNMPTrapOID	.1.3.6.1.4.1.25728.8900.2.0.1

Переменные в составе npIoTrap (varbind list)

OID	Data Type	Description
.1.3.6.1.4.1.25728.8900.2.1.0	Integer	A number of an IO line (starting from «1»), changing which caused the sending of a TRAP notification
.1.3.6.1.4.1.25728.8900.2.2.0	Integer	Value of a logic level of an IO line («0» or «1»)
.1.3.6.1.4.1.25728.8900.2.6.0	OctetString	Memo (textual description of a line, encoding win1251)

SNMP TRAP WHEN A STATUS OF A TEMPERATURE SENSOR IS CHANGED

npThermoTrap identification

SNMP v1 enterprise	.1.3.6.1.4.1.25728.8800.2
SNMP v1 generic-trap	enterpriseSpecific(6)
SNMP v1 specific-trap	1
SNMP v2 SNMPTrapOID	.1.3.6.1.4.1.25728.8800.2.0.1

Variables included into npThermoTrap (varbind list)

OID	Data Type	Description
.1.3.6.1.4.1.25728.8800.2.1.0	Integer	Number of a sensor (1..8), changing a status of which caused the sending of a TRAP notification
.1.3.6.1.4.1.25728.8800.2.2.0	Integer	A current temperature value, °C

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.1.3.6.1.4.1.25728.8800.2.3.0	Integer	Sensor status: 0 – sensor failed or is disconnected 1 – temperature is below normal 2 – temperature is normal 3 – temperature is above normal
.1.3.6.1.4.1.25728.8800.2.4.0	Integer	Bottom threshold of a norm, °C
.1.3.6.1.4.1.25728.8800.2.5.0	Integer	Top threshold of a norm, °C
.1.3.6.1.4.1.25728.8800.2.6.0	Octet String	Memo (a textual description of an installation place of a temperature sensor, encoding win1251)

SNMP TRAP WHEN CHANGING A STATUS OF A HUMIDITY SENSOR

npRelHumTrap identification

SNMP v1 enterprise	.1.3.6.1.4.1.25728.8400.9
SNMP v1 generic-trap	enterpriseSpecific(6)
SNMP v1 specific-trap	1
SNMP v2 snmpTrapOID	.1.3.6.1.4.1.25728.8400.9.0.1

Variables included into npRelHumTrap (varbind list)

OID	Data Type	Description
.1.3.6.1.4.1.25728.8400.2.5.0	Integer	Status of a humidity sensor: 0 – Sensor failed 1 – Readings of a sensor are below normal level 2 – Readings of a sensor are normal 3 – Readings of a sensor are above normal
.1.3.6.1.4.1.25728.8400.2.2.0	Integer	Relative humidity value,%.
.1.3.6.1.4.1.25728.8400.2.7.0	Integer	Top threshold of a range of normal values for a humidity sensor.
.1.3.6.1.4.1.25728.8400.2.8.0	Integer	Bottom threshold of a range of normal values for a humidity sensor.

SNMP TRAP WHEN CHANGING A RELAY STATUS

npRelayTrap identification

SNMP v2 snmpTrapOID	.1.3.6.1.4.1.25728.5500.6

snmpTrapOID npRelayTrap (SNMP TRAP notifications when changing a relay status)

OID	Description
.1.3.6.1.4.1.25728.5500.6.100.n	A relay is set to the status «Switched off», where n is a relay channel
.1.3.6.1.4.1.25728.5500.6.101.n	A relay is switched to the status «Switched on», where n is a relay channel
.1.3.6.1.4.1.25728.5500.6.102.n	Changing a relay management mode («Manual On», «Manual Off», «Watchdog», «Schedule», «Schedule+Watchdog», «Logic»), where n is a relay channel

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.1.3.6.1.4.1.25728.5500.6.103.n	Reset (is short term switching on/switching off a relay), where n is a relay number
.1.3.6.1.4.1.25728.5500.6.127.n	Common snmpTrapOID for all events, where n is a relay channel
.1.3.6.1.4.1.25728.5500.6.m.99	Common snmpTrapOID for all channels, where m is an event code (100, 101, 102, 103)
.1.3.6.1.4.1.25728.5500.6.127.99	Common snmpTrapOID for all events and all channels

Variables inluded into npRelayTrapData (varbind list)

OID	Data Type	Description
.1.3.6.1.4.1.25728.5500.3.1.0	Integer	A number of a relay channel, changing a status of which caused sending a TRAP notification.
.1.3.6.1.4.1.25728.5500.3.2.0	Integer	Relay operation mode. The next modes are available: 0 – Switched off manually 1 – Switched on manually 2 – Watchdog 3 – Schedule 4 – Schedule+Watchdog 5 – A channel is managed by the logic
.1.3.6.1.4.1.25728.5500.3.6.0	Octet String	Memo (textual description, encoding win1251).
.1.3.6.1.4.1.25728.5500.3.15.0	Integer	A current status of a relay: 0 – A relay is switched off 1 – A relay is switched on
.1.3.6.1.4.1.25728.5500.3.18.0	Integer	A source for changing the relay operation mode: -1 – Is not determined 1 – Web interface 2 – SNMP 3 – SMS 4 – HTTP API
.1.3.6.1.4.1.25728.5500.3.19.0	Integer	Time and date of changing a relay status.

SNMP TRAP ON THE POWER SOURCE OF A DEVICE

Information for the device NetPing 2/PWR-220 v2/SMS with a built-in battery.

npBatteryTraps identification

SNMP v1 enterprise	.1.3.6.1.4.1.25728.3900.2
SNMP v1 generic-trap	enterpriseSpecific(6)
SNMP v1 specific-trap	1
SNMP v2 SNMPTrapOID	.1.3.6.1.4.1.25728.3900.2.0.1

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Variables included into npBatteryTraps (varbind list)

OID	Data Type	Description
.1.3.6.1.4.1.25728.3900.1.1.0	Integer	Power source of a device: 0 – Battery power 1 – 220 V grid power
.1.3.6.1.4.1.25728.3900.1.2.0	Integer	Battery charge level, %

SNMP TRAP ON A STATUS OF A GSM MODEM

Information for a device NetPing 2/PWR-220 v2/SMS with a built-in GSM modem.

npGsmTraps identification

SNMP v1 enterprise	.1.3.6.1.4.1.25728.3800.2
SNMP v1 generic-trap	enterpriseSpecific(6)
SNMP v1 specific-trap	1
SNMP v2 SNMPTrapOID	.1.3.6.1.4.1.25728.3800.2.0.1

Variables contained in npGsmTraps (varbind list)

OID	Data Type	Description
.1.3.6.1.4.1.25728.3800.1.1.0	Integer	A status of a built-in GSM modem: 0 – OK 1 – Failed (no connection) 2 – FatalError (irrecoverable error, modem is locked)
.1.3.6.1.4.1.25728.3800.1.2.0	Integer	A status of a connection to a GSM network: 0 – Impossible 1 – HomeNetwork 2 – Searching 3 – Denied 4 – Unknown 5 – Roaming 255 – InfoUpdate
.1.3.6.1.4.1.25728.3800.1.3.0	Integer	GSM signal strength: 0…31 = 0% … 100% 99 – Unknown 255 – Updating info

[ENG] 14. [DKSF 52/202.10 IU] Support of URL-Encoded Commands by a Device

[ENG] 14.1. [DKSF 52/202.10 IU] Controlling IO Lines

The interface of URL-encoded commands in a device can be used for the integration with web applications without using an SNMP protocol. Controlling IO lines is available through the interface of URL-encoded commands.

REQUESTING A STATUS OF AN IO LINE

```
http://192.168.0.100/io.cgi?ioN
```

where:

N – is a number of a line, indicated after ?io.

RETURNED VALUES

Error (incorrect request format or incorrect number of an IO line):

```
io_result('error')
```

Successful execution of a command:

```
io_result('ok', -1, 1, 339)
```

The first argument is always 'ok' (when there is an error in a request - 'error').

The second argument is always «-1», for the extending of the API in future.

The third argument is a current instantaneous status of an IO line, including a reset status.

The fourth argument is a pulse counter on the IO line.

The name of the JSON-P callback is fixed io_result(), and cannot be changed in a request.

SWITCHING THE LINE (IN THE OUTPUT MODE)

Switching to the status «0» or «1»:

```
http://192.168.0.100/io.cgi?ioN=0

http://192.168.0.100/io.cgi?ioN=1
```

where:

N – is a number of a line, indicated after ?io.

Switching to the alternative (inverted) status.

```
http://192.168.0.100/io.cgi?ioN=f
```

where:

N – is a number of a line, specified after ?io.

Short term switching to the inverted status, i.e. issuing a pulse

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```
http://192.168.0.100/io.cgi?ioN=f,5
```

where:

N – is a number of a line, indicated after ?io.

Duration in seconds is set after a comma.

CHOOSING THE OPERATION MODE OF AN IO LINE

Setting the operation mode of a line: «0» - input, «1» - output, «2» - logic output:

```
http://192.168.0.100/io.cgi?ioN&mode=0

http://192.168.0.100/io.cgi?ioN&mode=1

http://192.168.0.100/io.cgi?ioN&mode=2
```

where:

N – is a number of a line, specified after ?io.

RETURNED VALUES

Error (incorrect request format or incorrect number of an IO line):

```
io_result('error')
```

A command is executed:

```
io_result('ok')
```

AUTHORIZATION

To add a login and password to the structure of a URL-encoded command, it is possible to use the next scheme:

- http://<username>:<password>@<host>:<port>/<URL-path>?<parameters>

where:

<username>:<password> – are credentials for authorization in a device web interface;

<host> – is an IP address of a device;

<port> – is a port of an HTTP server;

<URL-path>?<parameters> – is a URL-encoded command

[ENG] 14.2. [DKSF 52/202.10 IU] Relay Management

An interface of URL-encoded commands in a device can be used to integrate with web applications without using an SNMP protocol. A relay management is available through the interface of URL-encoded commands.

RELAY STATUS REQUEST

> http://192.168.0.100/relay.cgi?rN

where:

N – is a number of a relay, which is indicated after ?r.

RETURNED VALUES

An error (incorrect format of a request or an incorrect relay number):

> relay_result('error');

Successful completion of a command:

> relay_result('ok', 2, 1);

where:

The first argument is always 'ok' ('error' in the case of an error).

The second argument: a relay management source (values are represented for the firmware DKST70):

> 0 – turned off manually
>
> 1 – turned on manually
>
> 2 – watchdog
>
> 3 – schedule
>
> 4 – schedule + watchdog
>
> 5 – logic
>
> 6 – schedule + logic

The third argument is an instant current status of a relay («0» or «1») considering functioning of the mode «Watchdog», after activating a reset, pulse issue, etc.

SWITCHING A RELAY

Changing a control source as well as manual turning on and turning off a relay:

> http://192.168.0.100/relay.cgi?rn=s

After ?r a relay number is specified after = a number of the mode (source of control) is indicated.

where:

n is a relay number

s is a relay operation mode. It is one of the next values:

> 0 – Manual off
>
> 1 – Manual on

2 – Watchdog

3 – Schedule

4 – Schedule+Watchdog

5 – Logic

6 – Schedule+Logic

Switching (inverting) a relay,on <-> off:

http://192.168.0.100/relay.cgi?rn=f

A relay must be set to the mode «Manual off» or «Manual on».

Short term switching a relay into an inverted status (issuing a pulse of reset):

http://192.168.0.100/relay.cgi?rn=f,10

Duration in seconds is specified after a comma. It is applicable to all modes except "logic".

RETURNED VALUES

An error is returned in case of a wrong format of a request, as a result of an incorrect/invalid value of a number of a relay or a mode.

relay_result('ok')

relay_result('error')

AUTHORIZATION

To add a login and password to the structure of a URL-encoded command, it is possible to use the next scheme:

- http://<username>:<password>@<host>:<port>/<URL-path>?<parameters>

where:

<username>:<password> – are credentials for authorization in a device web interface;

<host> – is an IP address of a device;

<port> – is a port of an HTTP server;

<URL-path>?<parameters> – is a URL-encoded command

[ENG] 14.3. [DKSF 52/202.10 IU] Controlling Temperature Sensors

The interface of URL-encoded commands in the device can be used to integrate with web applications without using the SNMP protocol. Via the interface of URL-encoded commands, control of temperature sensors is available.

REQUEST OF THE STATE

http://192.168.0.100/thermo.cgi?tN

where:

N — number of the temperature sensor, indicated after ?t.

RETURN VALUES

Error in the request (wrong format or wrong number of sensor):

thermo_result('error')

Successful completion of the command

thermo_result('ok', 36, 2);

where:

The first argument: always 'ok' (upon request error - 'error').

The second argument: current temperature.

The third argument: the sensor status

0 - Sensor not connected or malfunctioning

1 - Temperature is below normal

2 - Temperature is normal

3 - Temperature above normal

AUTHORIZATION

To add a login and password to the structure of a URL-encoded command, it is possible to use the next scheme:

- http://<username>:<password>@<host>:<port>/<URL-path>?<parameters>

where:

<username>:<password> – are credentials for authorization in a device web interface;

<host> – is an IP address of a device;

<port> – is a port of an HTTP server;

<URL-path>?<parameters> – is a URL-encoded command

[ENG] 14.4. [DKSF 52/202.10 IU] Controlling a Humidity Sensor

The interface of URL-encoded commands in a device can be used for the integration with web applications without using an SNMP protocol. Controlling a humidity sensor is available through the interface of URL-encoded commands.

REQUESTING A STATUS

http://192.168.0.100/relhum.cgi

RETURNED VALUES

Successful execution of a command:

relhum_result('ok', 55, 25, 2)

where:

The first argument is always 'ok'

The second argument is a relative humidity in %

The third argument is a temperature of a humidity sensor

The fourth argument is a status of a sensor:

      0 – a sensor failed or is not connected

      1 – humidity is below normal

      2 – humidity is normal

      3 – humidity is above normal

AUTHORIZATION

To add a login and password to the structure of a URL-encoded command, it is possible to use the next scheme:

- http://<username>:<password>@<host>:<port>/<URL-path>?<parameters>

where:

<username>:<password> – are credentials for authorization in a device web interface;

<host> – is an IP address of a device;

<port> – is a port of an HTTP server;

<URL-path>?<parameters> – is a URL-encoded command

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[ENG] 14.5. [DKSF 52/202.10 IU] Managing an IR Commands Transceiver

An interface of URL-encoded commands in a device can be used to integrate with web applications without using an SNMP protocol. It is possible to control an IR command transceiver through the interface of URL-encoded commands.

SENDING AN IR COMMAND

http://192.168.0.100/ir.cgi?play=N

where:

N – is a number of a command.

RETURNED VALUES

ir_result('ok')

ir_result('error')

An error is returned only if a request format is incorrect or a command number is wrong. Errors of the module IRC-TRv2 are not checked when a response is formulated.

AUTHORIZATION

To add a login and password to the structure of a URL-encoded command, it is possible to use the next scheme:

- http://<username>:<password>@<host>:<port>/<URL-path>?<parameters>

where:

<username>:<password> – are credentials for authorization in a device web interface;

<host> – is an IP address of a device;

<port> – is a port of an HTTP server;

<URL-path>?<parameters> – is a URL-encoded command

[ENG] 14.6. [DKSF 52/202.10 IU] Controlling GSM Modem

REQUESTING A BALANCE OF A SIM CARD

http://192.168.0.100/ussdstart.cgi?requestcode

where:

requestcode – is a100x, which means *100#. In the code of the USSD request, «*» is replaced by «a», «#» is replaced by «x» (Latin characters).

RETURNED VALUES

Successful execution of a command:

ussdsend_result('ok');

GETTING A RESPONSE TO REQUESTING THE BALANCE OF A SIM CARD

http://192.168.0.100/ussdread.cgi

Evoke 20 seconds after requesting a balance of a SIM card.

RETURNED VALUES

Successful Execution of a Command:

ussdsend_result("response_from_gsm_operator");

AUTHORIZATION

To add a login and password to the structure of a URL-encoded command, it is possible to use the next scheme:

- http://<username>:<password>@<host>:<port>/<URL-path>?<parameters>

where:

<username>:<password> – are credentials for authorization in a device web interface;

<host> – is an IP address of a device;

<port> – is a port of an HTTP server;

<URL-path>?<parameters> – is a URL-encoded command

[ENG] NetPing 2/PWR-220 v3/ETH & NetPing 2/PWR-220 v4/SMS, User guide

NetPing server room environmental monitoring solutions and IP power distribution units.

[ENG] [2PWR,v2SMS] About What and for Whom Is This Document?

The document contains preparation of devices NetPing 2/PWR-220 v3/ETH and NetPing 2/PWR-220 v2/SMS for the operation, external electric interfaces and specifics of the 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.

[ENG] [2PWR,v2SMS] Liability Limitation and Copyright

The information, contained in this document, can be changed by a manufacturer without a prior notice. Although every effort was made to make the information in this document accurate and without errors, a manufacturer is not liable for their possible presence and for the consequences that may result from the errors herein. A manufacturer is not liable if supplied equipment, software and this user guide does not correspond to expectations of a user and his/her opinion about where and how to use all the above. All copyrights on supplied devices, described in this User Guide, as well as firmware and software of devices and this User Guide belong to NetPing global Ltd. Copying, replication and translation of this user guide to other languages are not allowed without a prior written permission of a rightholder. Copying, replication, changing, disassembling of provided software are not allowed without a prior written permission of a rightholder. For the part of software that is provided in source codes, there is a separate license agreement, which defines an order of its use and modification. Other trademarks used in this description belong to corresponding rightholders.

Developer and manufacturer:

NetPing east Co Ltd.

[ENG] [2PWR,v2SMS] Shipping Kit of a Device

A shipping kit includes:

1. NetPing device – 1 pc.;
2. Non-detachable power cord – 1 pc.;
3. GSM antenna (for a NetPing 2/PWR-220 v2/SMS device) – 1 pc.;
4. Packaging box – 1 pc.

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[ENG] [2PWR,v2SMS] Device Overview: Appearance and Basic Specifications of a Device

It is possible to plug up to two electricity consumers with a total capacity of 1000 Watts to a device through controlled electric 220V sockets. To be protected from a short circuit in load and/or exceeding a maximum allowable capacity, a device is equipped with automatic built-in self-resetting fuse. Load power distribution is random between two channels. Load connected to a device is controlled through own web interface, via an SNMP protocol, using URL-encoded commands (HTTP API) and using SMS commands (for a NetPing 2/PWR-220 v2/SMS device with a built-in GSM modem). A watchdog feature is implemented in a device that allows automatically reboot connected equipment using power supply if it freezes or according to a previously specified schedule. Electric load is controlled for each of two channels independently. At the same time, each channel can be possibly set up individually.

Appearance of Devices

Picture 1 – Front view (NetPing 2/PWR-220 v3/ETH device)

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Picture 2 – Front view (NetPing 2/PWR-220 v2/SMS device)
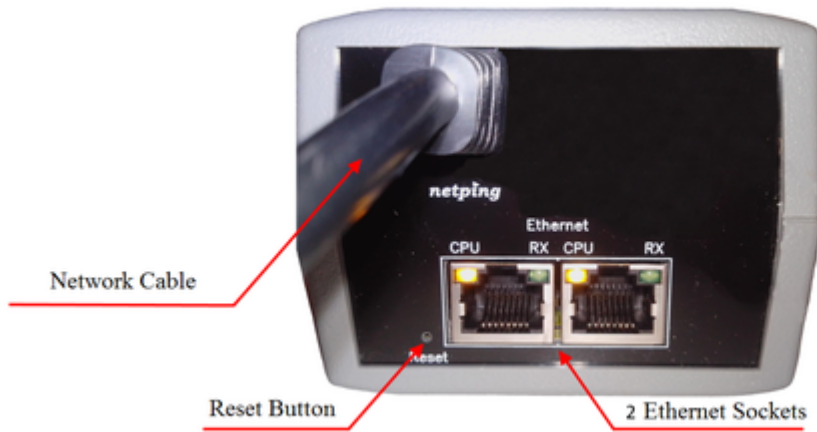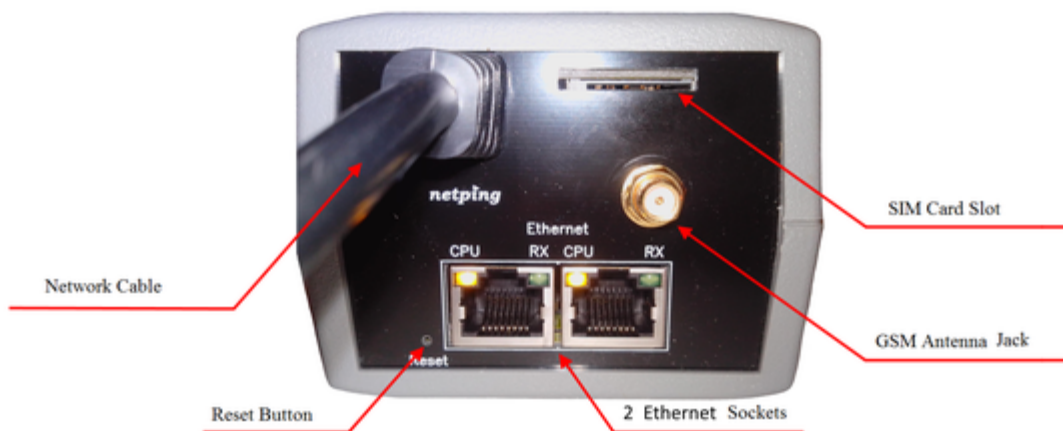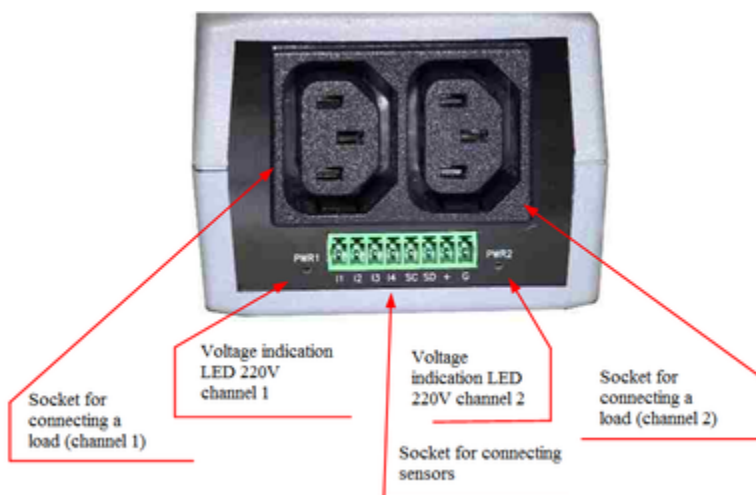

Picture 3 – Front panel (NetPing 2/PWR-220 v3/ETH device)

Picture 4 – Front panel (NetPing 2/PWR-220 v2/SMS device)

Picture 5 – Back panel (NetPing 2/PWR-220 v3/ETH, NetPing 2/PWR-220 v2/SMS devices)

Elements of a Front Panel

- two ports for connecting to the Ethernet network using plugs of RJ-45 type;
- «Reset» button to reset a device to default settings;
- a power cord of a device with a euro plug that is inseparably connected to a device;
- a jack for plugging GSM antenna (for a NetPing 2/PWR-220 v2/SMS device with a built-in GSM modem);
- a slot for a SIM card installation (for a NetPing 2/PWR-220 v2/SMS device with a built-in GSM modem)

Ports for connecting to the Ethernet network have two LEDs:

- CPU – glows continiously, is a device is powered; blinks 5-6 times when a device turns on (in the process of loading a microprogram); blinks 15-20 times when parameters of a device are reset to default values; blinks from time to time when a device sends packages to the Ethernet network; blinks intensively when indicating a software updating mode.
- RX – glows if a network connection is set (shows the presence of link) and periodically blinks when receiving packages.

Elements of a Back Panel

- Sockets for connecting a load that are «computer sockets». A load is connected using a specific cable «monitor – system unit» or a special adapter PWR-220 for a standard euro plug. An adapter is not included into a shipping kit. Sockets are protected from a short-circuit in a load with built-in self-resetting fuse;
- 220 V LEDs on sockets «PWR1» and «PWR2». «PWR1» LED with a socket located above it corresponds to the first channel of power management, «PWR2» LED with a socket located above it corresponds to the second channel of power management. «PWR1» and «PWR2» LEDs near sockets for connecting a load glow if there is 220V power on a corresponding socket, and do not glow if there is no

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voltage;
- Socket for plugging sensors

Specifications of a Device

Specifications of a device	Value
Total output power	1 kWt
Output power of one outlet	1 kWt
Power consumption of the device	5 Wt
Power supply voltage	110V .. 230V
Current frequency	50/60 Hz
Battery life (for a NetPing 2/PWR-220 v2/SMS device)	10 hours
Power plug type	Euro
Temperature range	0°C .. +40°C
Unplugged power cord length	1.2 m
Dimensions of a device	145 x 78 x 57
Dimensions of a package	225 x 93 x 82
Weight	538 g

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[ENG] [2PWR,v2SMS] Connecting, Installing, and Initial Configuration of a Device

> The page has photos of a NetPing 2/PWR-220 v2/SMS device in the text.

To prepare a device for operation, do the next:

1. Take a device out of the box and install on a horizontal surface.

2. Plug a GSM antenna to a device and locate it in the place of a reliable reception of the cell operator's signal (for a NetPing 2/PWR-220 v2/SMS device with a built-in GSM modem). The availability of a signal can be controlled using a cell phone according to the number of segments in the power indicator on a display of the phone.

3. Insert a SIM card until the click in a corresponding jack on a front panel of a device (for a NetPing 2/PWR-220 v2/SMS device with a built-n GSM modem). Please, pay attention so that a SIM card is turned contacts up.

A NetPing 2/PWR-220 v2/SMS device is designed to work with SIM-cards of GSM operators and cannot work with the R-UIM cards of CDMA standard (Skylink).

A SIM-card must be installed only in a de-energized NetPing 2/PWR-220 v2/SMS device.
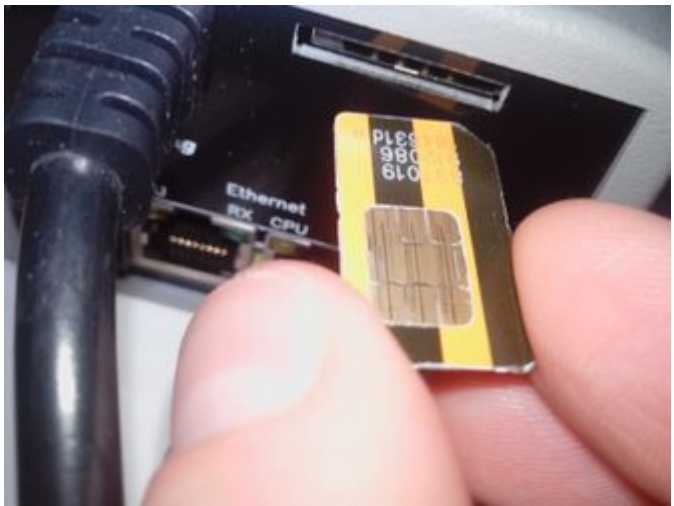
4. Plug the equipment, power of which must be controlled, to «PWR» sockets on a back panel of a device. To make a connection convenient, use the «monitor – system unit» cords or an adapter to connect PWR-220. Cords and adapters are not included into a shipping kit and can be purchased separately if necessary.

5. Plug external sensors to a device (see the details in the section «Plugging External Sensors») and/or a load.

External sensors and/or load can be plugged only to a de-energized device.

6. Plug a device to a power supply network.

Important! A device is designed to be connected to a power supply network with the voltage of 110V - 220V and a frequency of 50/60 Hz. Do not plug a device to power supply networks with other parameters!
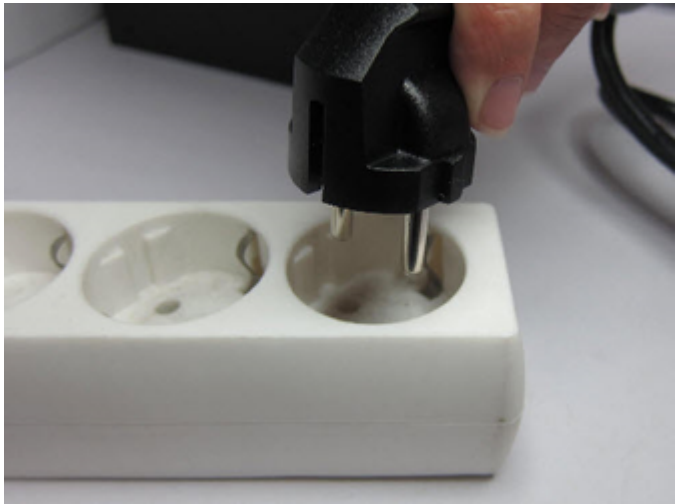
Glowing of CPU LEDs near Ethernet ports on a front panel of a device will be an indicator of power supply.

In the process of a device initialiation, LEDs blink several times indicating switching on of a device, and then will be glowing constantly.

7. Connect a device to the office Ethernet network to any free Ethernet port of a switch.

Glowing of a link LED near a corresponding Ethernet port on a front panel of a device will mean that a connection is successfully established.
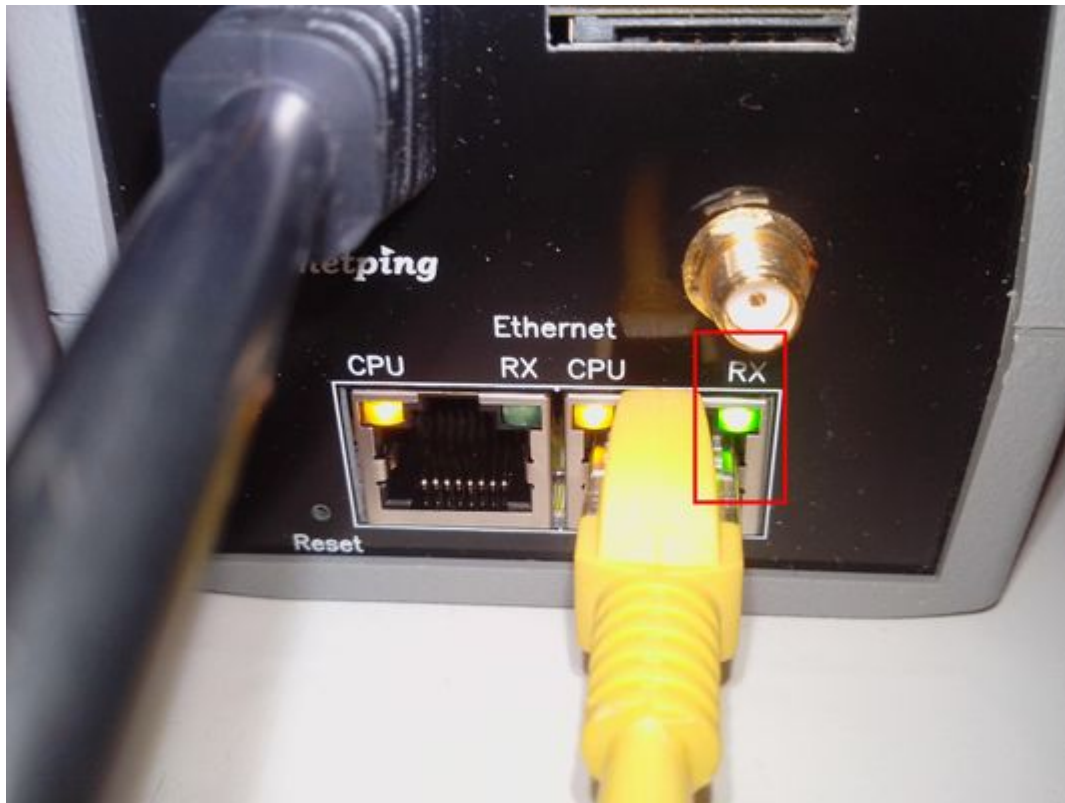
The second Ethernet port may be used to plug any Ethernet devices including other NetPing devices, in a «chain».

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A device is connected and ready to work.

A device that has been purchased right now or a device for which a procedure of resetting parameters to default values has been performed (see «Resetting Parameters to Default Values»), requires the initial configuration of network addresses and parameters of load control. After this, a device can be installed into an existing network. Its further configuration may be performed by using a remote access to a device. More detailed information about a configuration can be found in the document «Firmware description». Where to Get a Document with a Firmware Description?

Important! It is not recommended to connect real network and computer equipment to power sockets at the first switching on and familiarizing with the operation logic of a device. Frequent cycles of switching on/off may cause equipment failure. During the time of familiarizing with a device, it is possible to conect an indifferent load (for example, a table lamp) to power sockets or track a power supply status on power sockets by glowing of corresponding LEDs.

[ENG] [2PWR,v2SMS] Using IO Lines in the «Output» Mode to Control External Devices

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:

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

Equivalent Circuit

+5V

R6
3k3

R5

Input

51

IRLML6402
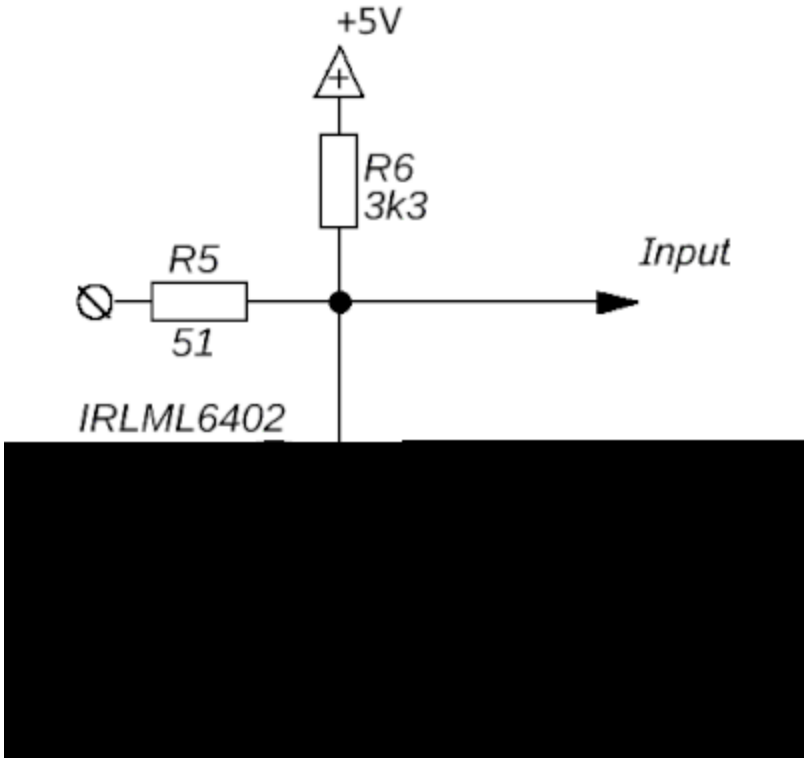
[ENG] [2PWR,v2SMS] Plugging External Sensors

It is prohibited to plug sensors and external modules into NetPing devices when a power supply is on!

Configuring a device and receiving notifications from sensors can be seen in the document «Firmware description».

Description of Contacts

To make plugging of sensors to a device convenient, a terminal block is used. To fix wires in a terminal block, use a slotted screwdriver with a slot width of 2,5 mm. Pinout of contacts on a terminal block looks like the next:

Contact	Description
I1-I4	IO line 1-4
SC	Contacts of a digital bus i2C, synchronization line
SD	Contacts of a digital bus i2C, data line
+	Power voltage +5V
G	Ground (common)

Plugging temperature sensors T811

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Eight temperature sensors are plugged in parallel one to another in the same terminals.

Colored Loop	Contact Name
Yellow	SC
Green	SD
Red	+
Black	G

Important! It is prohibited to plug temperature sensors with the same identification numbers (ID) to a device.

Set an ID for every temperature sensor using switches on a board of a sensor. To set switches, take off an upper lid of a sensor.
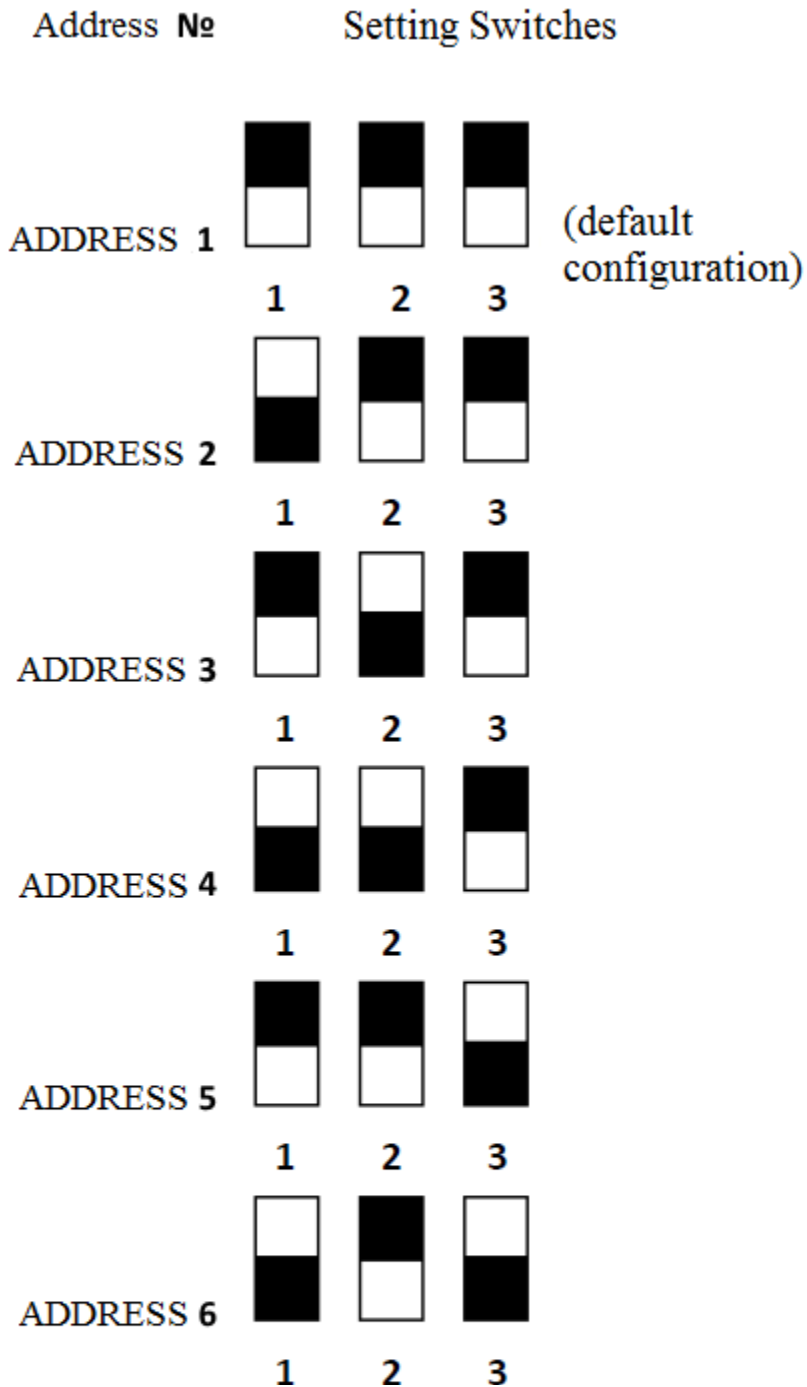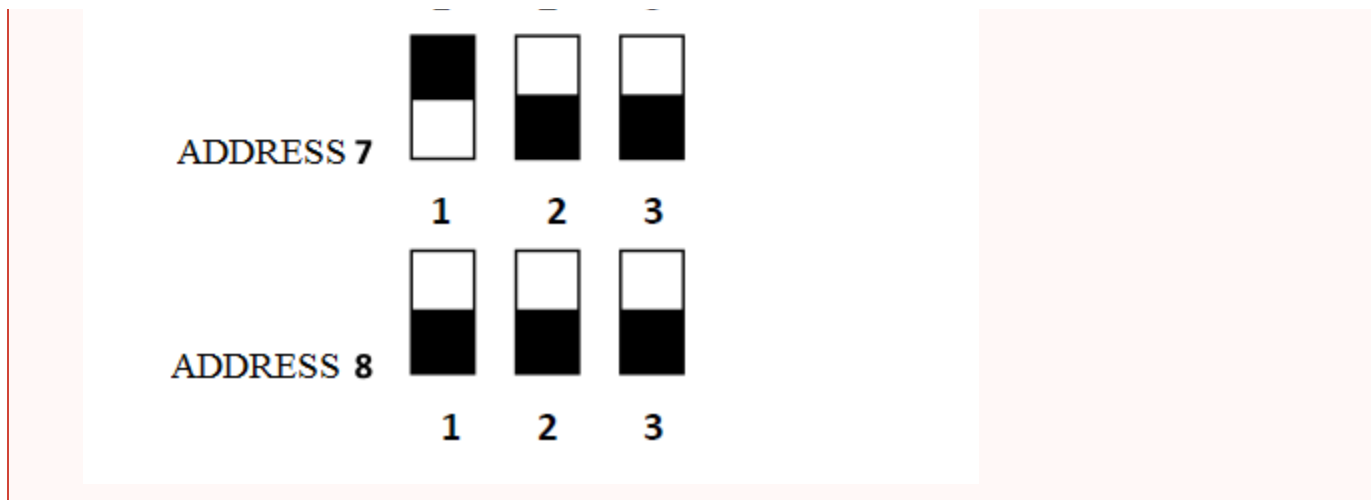
Address №   Setting Switches

ADDRESS 1   (default configuration)
1   2   3

ADDRESS 2
1   2   3

ADDRESS 3
1   2   3

ADDRESS 4
1   2   3

ADDRESS 5
1   2   3

ADDRESS 6
1   2   3

Depending on ID, a temperature sensor will be displayed on a corresponding channel in a web interface 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. Otherwise, it can be done independently with the help of any wire with a minimum cross section of 0,4 mm^2. Maximum allowable length of a flat cable is 10 m from each sensor to a device (star topology).

Plugging Temperature Sensors TS/WT

All 8 temperature sensors are plugged in parallel one to another.

Flat Loop	Contact Name
Labeled (red) wire	SC
The first wire after a labeled one	SD
The second wire after a labeled one	+
The third wire after a labeled one	G

Important! it is prohibited to plug temperature sensors with the same identification numbers (ID) to a device.

Depending on ID, a temperature sensor will be displayed on a corresponding channel in a web interface 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. Otherwise, it can be done independently with the help of any wire with a minimum cross section of 0,4 mm^2. Maximum allowable length of a flat cable is 10 m from each sensor to a device (star topology).

Plugging a humidity sensor WS-2

A loop of a sensor is a flat loop with a labeled first wire (red).

Colored Loop	Flat Loop	Contact Name
Yellow	Labeled (red) wire	SC
Green	The first wire after a labeled one	SD
Red	The second wire after a labeled one	+
Black	The third 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. Otherwise, it can be done independently with the help of any wire with a minimum cross section of 0,4 mm^2. Maximum allowable length of a flat cable is 10 m from each sensor to a device (star topology).

Plugging IR Module IRC-TR v2

Colored Loop	Flat Loop	Contact Name
Yellow	Labeled (red) wire	SC
Green	The first wire after a labeled one	SD
Red	The second wire after a labeled one	+
Black	The third 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. Otherwise, it can be done independently with the help of any wire with a minimum cross section of 0,4 mm^2. Maximum allowable length of a flat cable is 10 m from each sensor to a device (star topology).

Plugging a Supply Voltage Sensor

A sensor is a «dry contact», therefore the order of connecting wires is irrelevant. The number of plugged sensors is limited only by a number of free IO lines.

Loop	Contact Name
First wire	I1-I4
Second wire	G

The order of connecting wires is irrelevant. Depending on the output (I1-I4) on a terminal block, where a sensor is plugged in, it is displayed on the same channel IO1-IO4 in a web interface of a device.

IO lines, to which sensors are plugged must be configured as the «input» in an interface 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 mm^2. Maximum allowable length of a flat cable is 100 m.

Plugging a door sensor

A sensor is a «dry contact», therefore the order of connecting wires is irrelevant. The number of plugged sensors is limited only by a number of free IO lines.

Loop	Contact Name
First wire	I1-I4
Second wire	G

Depending on the output (I1-I4) on a terminal block, where a sensor is plugged in, it is displayed on the same channel IO1-IO4 in a web interface of a device.

IO lines, to which sensors are connected, must be configured as the «input» in an interface 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 mm^2. Maximum allowable length of a flat cable is 100 m.

Plugging a leakage sensor

The number of plugged sensors is limited only by a number of free IO lines.

Colored Loop	Contact Name
Green	I1-I4
Yellow (white)	G
Red	+

Black	G

Depending on the output (I1-I4) on a terminal block, where a sensor is plugged in, it is displayed on the same channel IO1-IO4 in a web interface of a device.

IO lines, to which sensors are connected, must be configured as the «input» in an interface 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 mm^2. Maximum allowable length of a flat cable is 100 m.

Plugging NetPing AC/DIN sockets

The number of plugged NetPing AC/DIN sockets is limited only by a number of free IO lines.

When connecting a socket to a device, all wires are used, except a brown (white) one. An IO line, to which a NetPing AC/DIN socket is connected, needs to be switched into the «output» status. When a status is «logic 0», 220V will be present on an IO line, and a load will be switched on. When a status is «logic 1» on an IO line, a socket will be de-energized, a load switched off.

> Important! A brown (white) wire is not used and must stay unplugged!

Loop	Contact Name
Red	+
Black	G
Blue (green)	I1-I4

To commute a load in NetPing AC/DIN, a relay with normally closed contacts is used. This means that if a control wire is unplugged, 220 V will be present in a 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 mm^2. Maximum allowable length of a flat cable is 100 m.

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[ENG] [2PWR,v2SMS] Resetting Parameters to Default Values

Resetting parameters of a device to default values is necessary in the next cases:

- login and/or password for accessing a web interface of a device is lost;
- no information about a current IP address of a device;
- in certain cases after updating firmware of a device

This procedure sets all customizable parameters of a device to default values (IP address, access filters, user name, password and other settings).

To reset parameters to default values, there is a need to consequently perform the next actions (for a NetPing 2/PWR-220 v3/ETH device without a built-in battery):

- switch off power of a device;
- press the reset button «Reset»;
- switch on power of a device keeping the «Reset» button pressed for 15-20 seconds;
- release the button, all parameters of a device are reset to default values

To reset parameters to default values, there is a need to consequently perform the next actions (for a NetPing 2/PWR-220 v2/SMS device with a built-in battery):

- press and keep the «Reset» button pressed for more than 5 seconds (use a pen/stilys/pencil, etc.);
- release the «Reset» button, CPU LEDs near Ethernet ports will blink, all parameters of a device are reset to default values

Short-term clicking the «Reset» button will reboot a device (for a NetPing 2/PWR-220 v2/SMS device with a built-in battery).

On default, a device has the next parameters:

User name: visor

Password: ping

IP address: 192.168.0.100

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Subnet mask: 255.255.255.0

Gate (gateway): is 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. Therefore, all devices have unique MAC addresses after being manufactured.

After resetting parameters to default values, there is a need to perform an initial configuration of a device – see more detailed description in the document «Firmware description». Where to Get a Document with a Firmware Description?

[ENG] [2PWR,v2SMS] Operating, Storage, Transportation and Disposal Conditions

It is allowed to use a device only in excellent technical condition and only for intended purpose according to a user guide. A device must be used according to «Safety Rules for Working with Electrical Equipment».

It is necessary to remove immediately all factors able to cause decreasing a safety level of using a device.

A device is designed for a continuous round the clock operation indoors only. A room designed for using a device must fulfill fire safety requirements.

In working conditions a device is resistant to air temperatures from 0°C to +40°C and relative humidity from 5% to 95 % when a temperature is 25°C (without a moisture condensation).

A construction of a device provides a reliable uninterrupted operation during long time with no need for special maintenance. Developed functionality for remote setup and configuration allows to change any parameters remotely and centrally for a big amount of devices.

> Kindly contact a technical support by the address support@netpingdevice.ru if any issues arise when using a device and for additional information.

A device can be stored within a temperature from 40°C below zero to 70°C above zero and atmospheric pressure from 675 to 800 mmHg. A device must not be stored longer than 6 hours within conditions with extreme values of a temperature.

The contents of a dust, vapors of acids and alkalis, aggressive gases and other harmful admixtures causing corrosion should not exceed the content of corrosion-active agents for the atmosphere type 1.

A device may be transported by any kind of transport when packaged and protected from a direct influence of precipitation when a temperature is from 40°C below zero to 70°C above zero. A device must not be transported longer than 6 hours within conditions with extreme values of a temperature range.
Before unboxing, after transporting within temperatures below zero, there is a need to keep a device in a package in normal conditions for at least an hour.

A device is not dangerous for life and health of people and environment. After its lifetime is over it must be recycled in a service organisation according to norms, rules and methods, used by the recycling organisation. A device is suitable for recycling. Do not throw it out with household waste.

[ENG] [2PWR,v2SMS] Safety Precautions

> The next information will allow users to avoid both injuries and damaging a device as well as connected equipment.

- A device must be plugged to a power supply socket with a ground or a hole, where a contact is inserted. A contact must be located at a plug and be connected to a ground wire. Grounding must be implemented according to ГОСТ Р 50571.21-2000;
- A device must be used only in a power supply network, indicated by a manufacturer. Using any other power supply types may lead to damaging a device;
- Do not use damaged power cords as well as insecurely fixed wall sockets;
- An electric equipment with electricity consumption of more than 1500 W must be grounded;
- It is prohibited to open the case of a device;
- Do not drop a device and avoid impact of force on it;
- Protect a device from high humidity levels. It is prohibited to touch a device and a connected equipment with wet hands;
- Use devices only indoors;
- Do not place a device at a surface or inside heating devices, such as microwaves, stoves and heaters;
- Do not use a device in locations marked as potentially explosive, with a possibility of an explosion and a ban on the use of wireless devices (works for devices with a built-in GSM modem);
- Protect a device against fire and extreme temperatures;
- Avoid impact of direct sunlight on a device;
- Do not allow children to use a device.

> Attention! Failure to comply with these conditions is a violation of the operating conditions of a device.

[ENG] [2PWR,v2SMS] Firmware Update

A device supports firmware update through a web interface of a device. More details are provided in the document «Software Description». Where to get a document with a firmware description?

[ENG] [2PWR,v2SMS] 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:
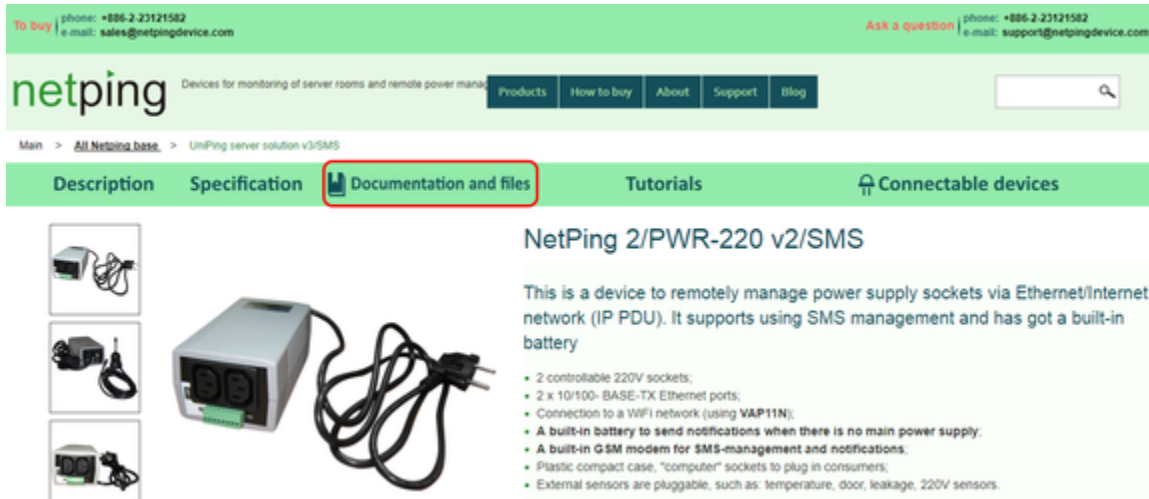
- A device failed because of the problems in a public electric network, plugging a device into power supply networks with invalid parameters, absence of grounding, etc. (power fluctuations and surges, overloading, etc.);
- A device failed because of having liquid inside;
- A device failed as a result 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.

[ENG] [2PWR,v2SMS] Where to Get a Document with a Firmware Description?

Configuration and operation order with control interfaces of a device are provided in the document «Firmware Description». A documentation is updated according to the changes that are added to firmware.

To find an actual version of «Firmware Description» on a manufacturer's web site, there is a need to:

1. Go to the page of a description of a chosen device:
   - NetPing 2/PWR-220 v3/ETH
   - NetPing 2/PWR-220 v2/SMS
2. Go to the section «Documentation and Files»:

3. Go to the link «DKSF 202.9 IU firmware description»:

A version of a «Firmware description» document must correspond with the firmware version of your device, i.e. the first two digits in the name of the firmware description document must be the same as the first two digits in the firmware version of your device.

NetPing server room environmental monitoring solutions and IP power distribution units.

[ENG] [2PWR,v2SMS] What Should I Do if I Have More Questions?

Technical support for Netping devices

Manufacturer's website: http://www.netpingdevice.com/

Kindly see our blog for articles with examples of using the devices and news on issuing new firmware versions.

If any problems arise when using a device or there is a need for additional information, contact a technical support by the address support@netpingdevice.com.

Pages of devices on the manufacturer's website:

- NetPing 2/PWR-220 v3/ETH
- NetPing 2/PWR-220 v2/SMS

Information about features of a devices and its configuration using a web interface can be seen in the document «Firmware Description». Where to Get a Document with a Firmware Description?