

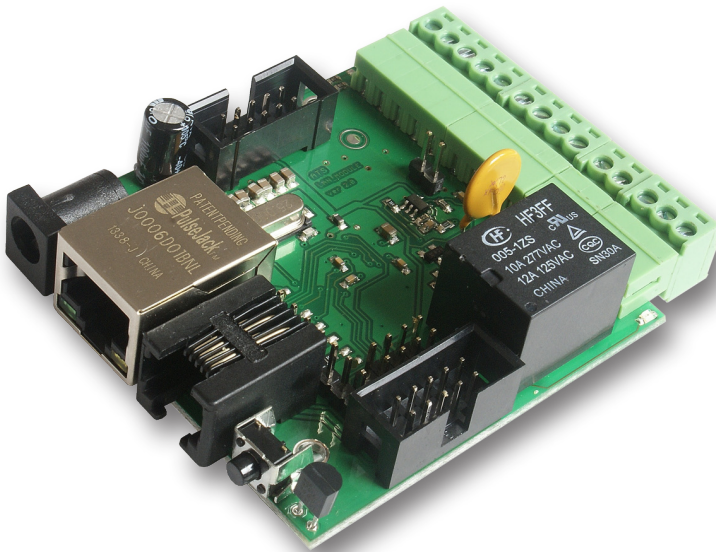
# Manual

## LAN Controller V2.0

Firmware:

HOME: from 3.13

ISP: from 2.09



# LAN Controller

LAN Controller is a simple, but innovative device which has long been lacking in the market network solutions. A small board serves as a web server which presents the various sensor readings and allows you to remotely control up to 6 outputs. For far from socket installation board could be powered by passive PoE. In order to expand the uses of our Lan Controller we introduced two types of management software (*firmware*) suitable for different applications. In both versions, in addition to the main page of the **Control Panel** from the sensor readings are tabs: **Events Config** for programming an array of events, **Scheduler** for programming timed events and the **Network Config** for all other settings. Differences (*described further below*) between firmware versions are as follows: **2.XX - ISP version** - contains an additional tab to set **Watchdog** to monitor 5-five network devices. **3.XX - Home edition** - **is devoid of tabs Watchdog**, but have been added: supports sensor DHT22, reading to 6 temperature probes DS18B20, working digital inputs as bistable switches - to use wall light switches. Changing the firmware is possible by the user program **LAN Controller Tools.exe** (Windows XP) or via the TFTP protocol - as described in this manual at p. 25. In Accessory ([www.tinycontrol.eu](http://www.tinycontrol.eu)) are presented all sensors and upgrade kits compatible with Lan Controller.

## Examples of applications

### ISP

- watchdog function to checking TCP/IP connection and launch outputs if hanging happen
- temperature, supply voltage and person occupancy control in server rooms
- weather condition report on the occasion of IP cameras views

### Home control

- home electric stove control (automatically or remote)
- turning on/off home lightening remote, by scheduler or by event, controlling intensity
- turning off TV box if remote is other person hands ;-)
- irrigation control - you don't need visit your garage to modify irrigation time or you can turn sprayer precisely in the moment when your favorite neighbor passes near ;-)

### Home installations

- temperature controlling and simple automation in your heating system
- temperature and pressure controlling in solar thermal installations
- measurements of heat pump operation
- monitoring of grid voltage and automatic switching to backup with mail notification
- remote control (by LAN or wirelesslan) understands as forwarding command to one of output of Lan controller from input of other Lan controller

### Renewable energy

- measurements of solar cells work
- measurements of wind turbines
- measurements of charging battery
- measurements of power consuming

### Agriculture

- Irrigation systems
- Animal food processing automatization

# RESTARTER, MONITOR, CONTROLLER

## FEATURES: *(may vary depending on the firmware version):*

- WWW or SNMP v2 management
- firmware upgrade via TFTP
- read data in real time without refreshing page
- possibility switch on/off to 5 relay direct and 1 transistor output up to 1A from page WWW
- events panel to self-programming by user
- Scheduler (switch on/off output for definite time in week days)
- IP watchdog to five IP device *(only v. 2.09)*
- monitoring additional devices eg. PIR sensors
- environmental temperature and supply voltage on board measurement
- temperature and current measurement from connected sensors
- temperature and humidity measurement by DTH22 sensor *(only v. 3.13)*
- power measurement for DC voltage
- power measurement from grid by electricity meterer impulse *(only v. 3.13)*
- possibility to connecting of the additional boards: with 4 switched PoE ports or 4 relays
- set time manually or by server NTP
- possibility sensors calibration
- frequency and duty modified PWM output
- remote control: each output of Lan controller setup as server can be controlled remotely by LAN network from inputs of others Lan controllers
- e-mail notification about programmed events
- SNMP TRAP notification about programmed events
- automatically send state or value inputs to SNMP server by POST or GET commands
- implemented protocols: HTTP, SNMP, SMTP, SNT, ICMP, DNS, DHCP.
- supported temperature sensors: PT1000, DS18B20
- support 1wire protocol

We hope that the LAN controller will have new applications not only in the ISP networks, but most of all as a simple home automation, control the status of any type of installation, the measurement of renewable energy sources or as a simple measure of the energy consumption of the various receivers. Therefore, the range of sensors will be expanded to implement such measurements.

***We invite you to visit our website***

***[www.tinycontrol.eu](http://www.tinycontrol.eu)***

***There you will find the firmware updates  
and information about the new possibilities.***

## FACTORY SETTINGS

IP address of the module: **192.168.1.100**

user: **admin**

password: **admin**

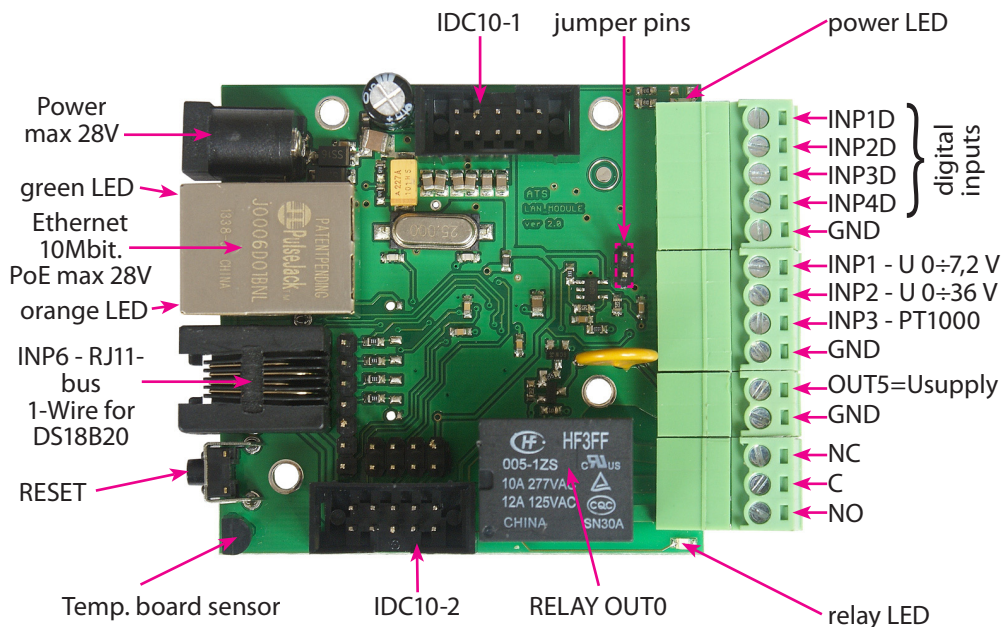
## TECHNICAL SPECIFICATIONS

- supply voltage: 8÷28 V DC
- power consumption : about 1W
- PoE supply: YES, passive (PoE max. <28V)
- Protection from wrong supply polarization: YES
- interface: ethernet 10Mbit/s
- relay: 255VAC 10A
- operating temperature: –20 to +85 °C
- weight: 50g
- dimensions (in a housing without plugs) 66 x 68 x 40 mm

## INPUT/OUTPUT:

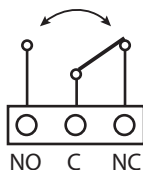
- **5 ANALOG INPUTS:**  
temperature, voltage, current (by additional boards) and another physics measurements
- **DIGITAL INPUT for 1WIRE bus (connector RJ11):**  
support for 4 (**v. 2.09**) or 6 (**v. 3.13**) temperature sensors DS18B20
- **DIGITAL INPUT:**  
support temperature and humidity sensor DHT22 (**only v. 3.13**)
- **4 LOGICAL INPUTS:**  
for monitoring, as a pulse counter from energy meter (**only v. 3.13**)
- **1 RELAY OUTPUT:**  
(NO, NC, C)
- **1 TRANSISTOR OUTPUT:**  
up to 1A
- **4 OUTPUTS (Connector IDC10-2):**  
to switch relays or transistors
- **4 PWM OUTPUT:**  
2,6 KHz do 4 MHz
- **measuring the temperature and supply voltage LAN Controller board**
- **reverse polarization protection**

## PINS and COMPONENTS DESCRIPTION



PIN / Component	Description
Power	Power supply 8V ÷ 28V DC
power LED	Shine LED means power on board
relay LED	Shine means relay active
green LED	Shine LED means eth link active
orange LED	Shine means data transmitted
IDC10-1	Additional outputs, for example, relays
IDC10-2	Additional Inputs / Outputs PWM1÷3
INP1÷4D	Logical inputs Low=0~0,8V, High=0,8V~20V
INP4D	Also supports a pulse counter ( <b>only v. 3.13</b> )
INP1	Input for voltage measure 0 ÷ 7.2V (3.6V if jumper on)
INP2	Input for voltage meas. 0 ÷ 36V
INP3	Input for PT1000 sensor for high temp. measure
GND	General ground
OUT5	Transistor output (+), voltage = power supply, max 1A
GND	Ground for transistor output (-)
NC	Relay OUT0, normally closed contact
C	Relay OUT0, common contact
NO	Relay OUT0, normally open contact

## RELAY BOND:



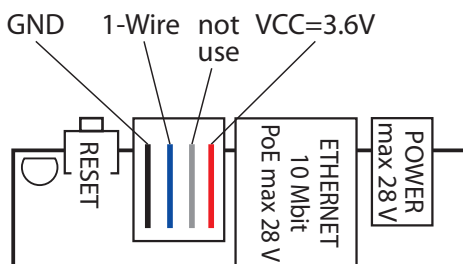
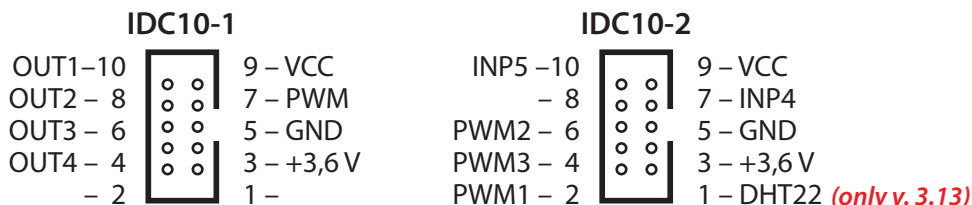
NO – contact normally open

C – common contact

NC – contact normally closed

**ATTENTION:** In spite of that relay can switch AC voltage 255 VAC 10A, board fail to comply with safety requirements (lack housing, earthing). Therefore that receiver connect with the assistance safety external relays eg. on DIN bus, controlled by relay on board.

## IDC10-1, IDC10-2 and RJ11 (bus 1-WIRE):



## RESET BUTTON

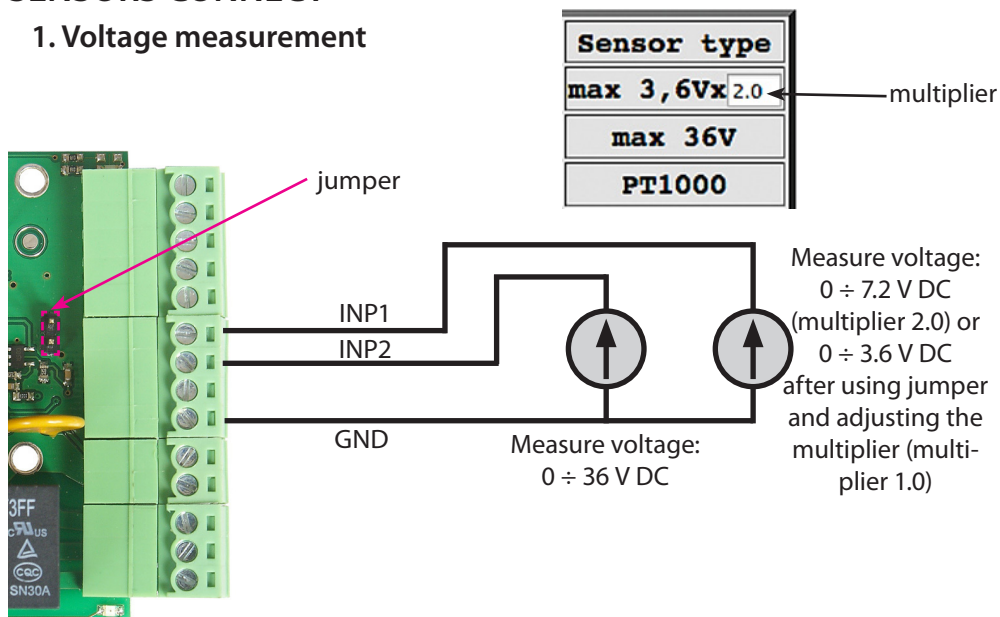
Pressing for about 0.5 seconds to change state relays, and withstand longer to near 5 seconds (when we're not logged by the Web module) will reset the module, further detention for about 10 seconds to change all settings (both network and configuration ) on the factory, reset confirmation of the settings is fast switching on and off the relay (click-click), not to be confused with the change of status and exclusion of the relay after a reboot.

User and password: **admin**

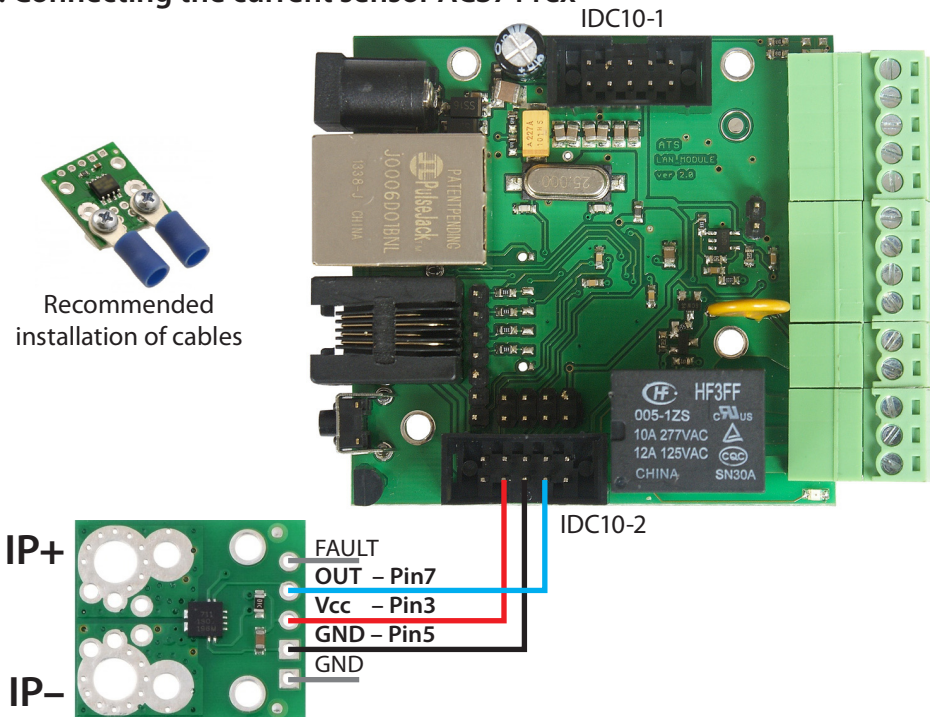
IP: **192.168.1.100**

## SENSORS CONNECT

### 1. Voltage measurement

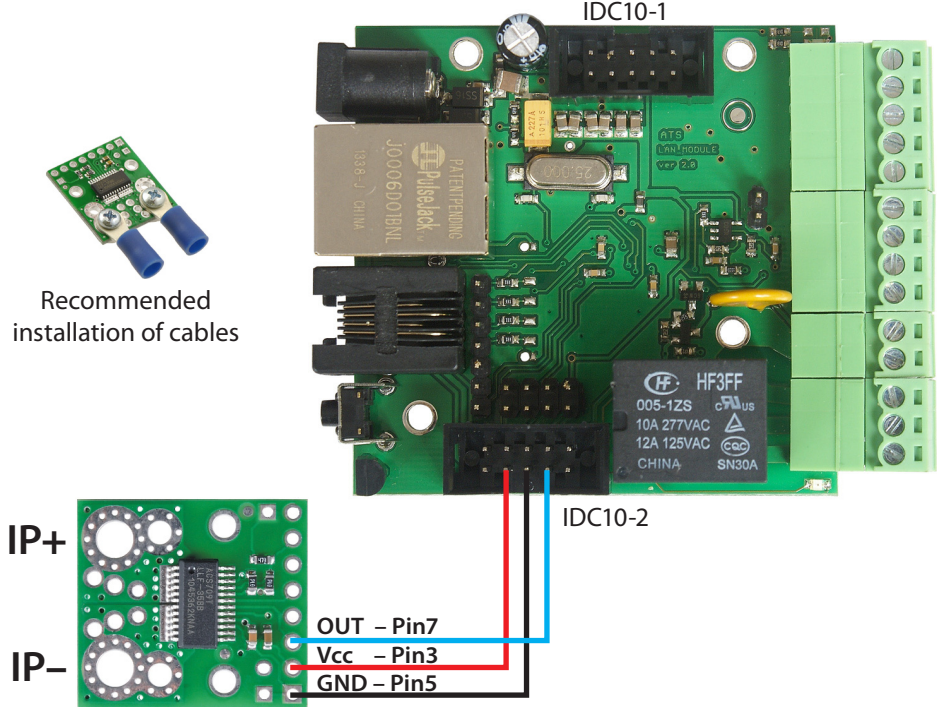


### 2. Connecting the current sensor ACS711ex

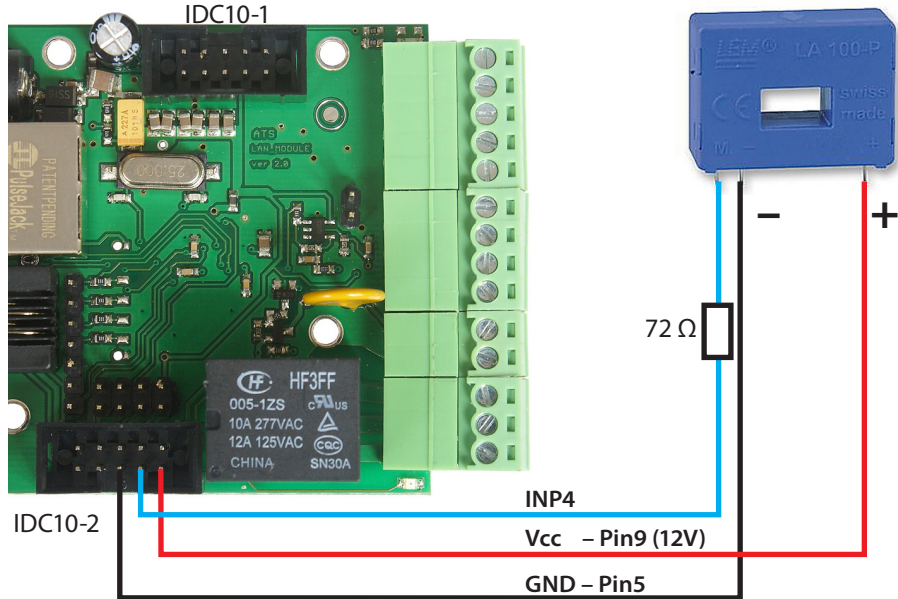




### 3. Connecting the current sensor ACS709

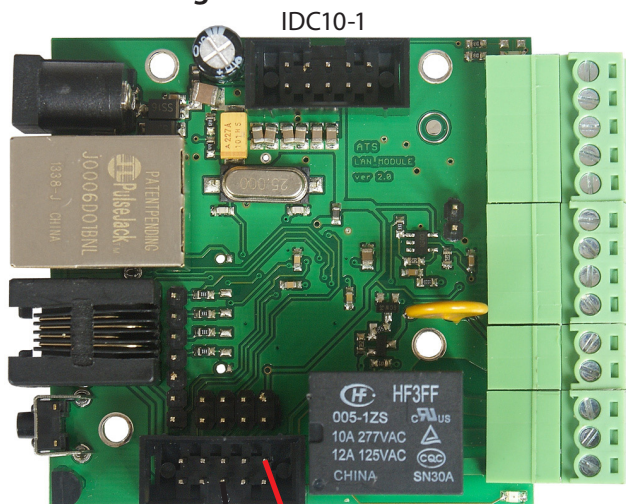
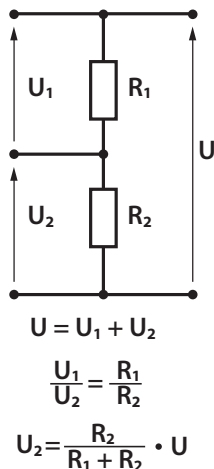


### 4. Connecting the sensor LA100-P

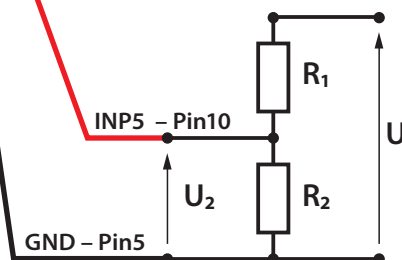




## 5. Voltage connections to INP5 using a resistive divider



IDC10-2



### EXAMPLE

$U$  – Input voltage for the measurement

$U_2$  – the voltage at the input INP5 (max. 3.6 V)

for the measurement of up to 36 V, use the divider:

$R_1 = 9 \text{ k}\Omega$ ,  $R_2 = 1 \text{ k}\Omega$ ,

for the measurement of up to 360 V, use the divider:

$R_1 = 99 \text{ k}\Omega$ ,  $R_2 = 1 \text{ k}\Omega$ ,

As a result of sharing multiplier enter:  $U / U_2$

## 6. Set the sensor type INP4 and the value of the multiplier INP5

ACS = 0 – No Reading

ACS = 1.0 – 15A (ACS711ex)

ACS = 2.0 – 30A (ACS711ex)

ACS = 3.0 – 75A (ACS709)

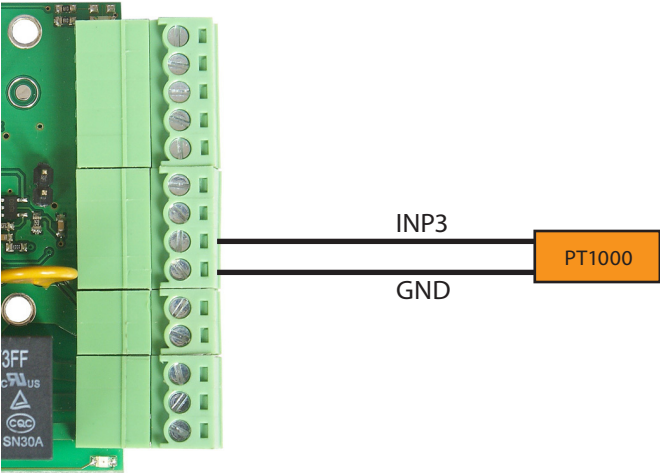
ACS = 4.0 – resistor 0,1 $\Omega$

ACS = 5.0 – LA100-P (through resistor 75 $\Omega$ )

Inp4	0.00	A	0.00	ACS 4.0
Inp5	0.0	V	0.0	3,6V x 10

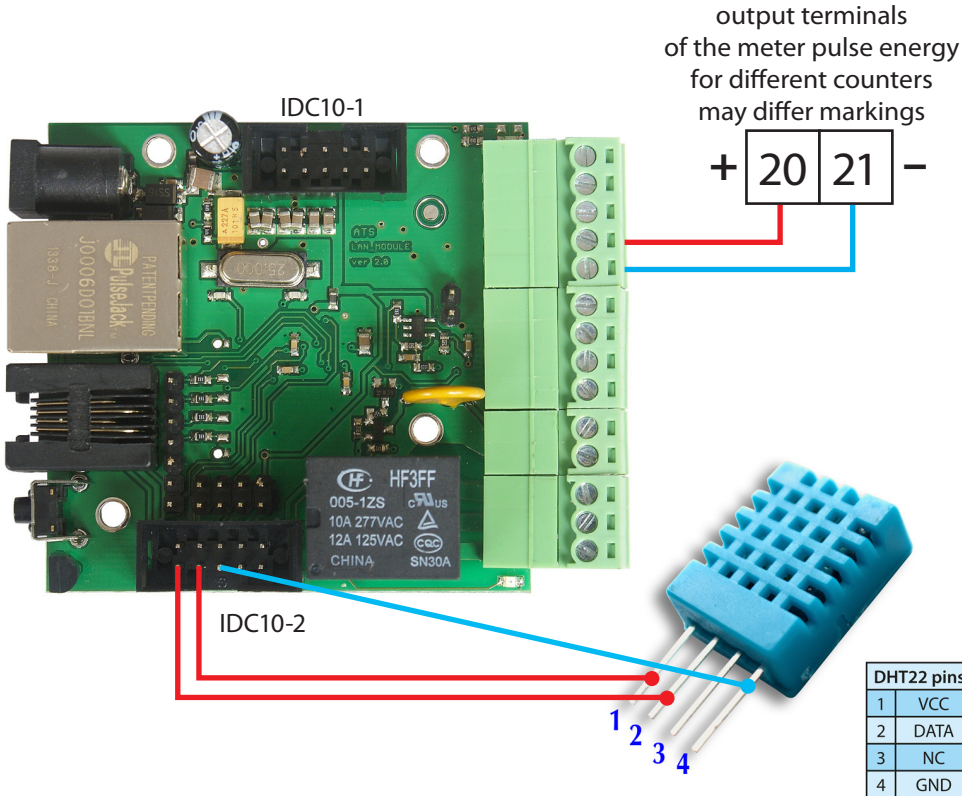
multiplier

### 7. Temperature measurement

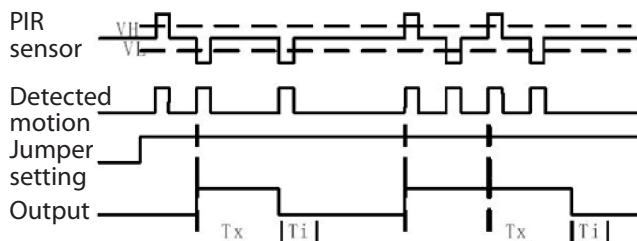
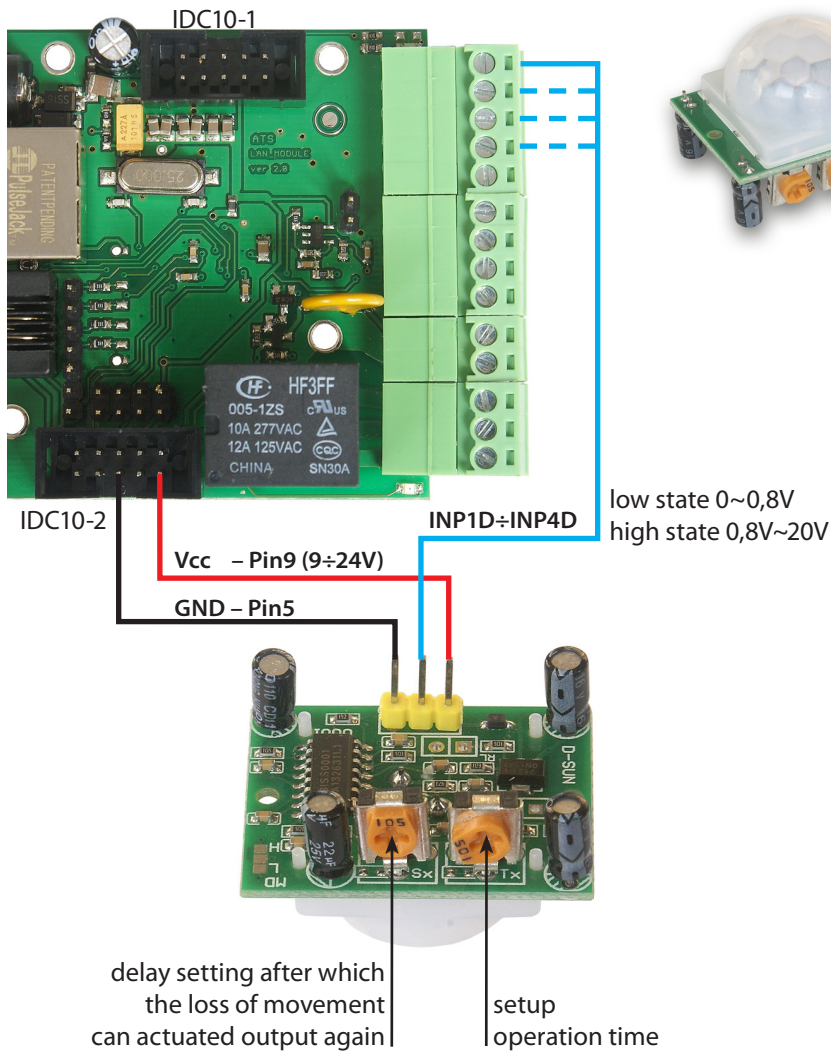


### 8. DHT22 sensor and pulse output from the counter (v. 3.13)

The maximum frequency of counting pulses is 10 pulses per 1 second.



## 9. PIR motion sensor interface



# Management by WWW.

## 1. Control Panel

Reset time – „0” for normal outputs work (ON/OFF), for time > 0 output change state and return to state before after the specified time in seconds (max 65534).

click cause change relay state on opposite (OUT0 relay on board)

Value of calibration - adds to or subtracts the desired value

Any text description, max 8 chars

Change outputs state display

**Set State**  
All output simultaneously according to combo box

automatic socket arming at fixed time (two panes: one - time arming, second - break time)

Run PWM generator (when changing frequency or fill does not need to turn off the generator)

Any description of the measured physical quantity, such as kWh, L/min, etc. **(only v. 3.13)**

Negation for digital input for Even Config tripping **(only v. 3.13)**

Divider pulse counter - for example as ours energy meter sends 1000 pulses per 1 kWh is enter 1000, as it sends 1600 pulses enter 1600, etc. **(only v. 3.13)**

Time averaged over a values of power measurement **(in minutes) (only v. 3.13)**

Run Power measure from INP3 (voltage) and INP5 (current) **(only v. 3.13)**

Up Time: 55sec, 23 min, 11 hour, 4 day .. 2014-12-17:11:54:59 LAN\_SWITCH-HOME/CONTROLLER

Control Panel | Events Config | Scheduler | Network Config HW:2.0 SW:3.10

### CONTROL PANEL

VCC SUPPLY = 24.3V 0.0 Board Temperature = 40.3 °C 0.0

#### Digital Outputs Control

Reverse out state

Reset time: 10 0 0 0 0 0

Out0 | Out1 | Out2 | Out3 | Out4 | Out5

OFF ON ON ON ON OFF

1 Off : 2 On : 3 On : 4 On : 5 On : 6 Off :

Set State

Auto switch Out

out0 out1 out2 out3 out4 out5

65535 65535 65535 65535 65535 65535

65535 65535 65535 65535 65535 65535

**PWM Output OFF**

Frequency = 5008 Hz 5008

Duty = 50.0 % 50.0 Start

#### ANALOG Inputs State

Input	Value	Unit	Cal	Sensor type
Inp1	0.00	V	0.00	max 3,6V x 2.0
Inp2	0.03	V	0.00	max 36V
Inp3	N/A	°C	0.0	PT1000
Inp4	0.00	A	0.00	ACS 4.0
Inp5	0.0	V	0.0	3,6V x 1.0
Inp6	N/A	°C		DS18
Inp7	N/A	°C		DS18
Inp8	N/A	°C		DS18
Inp9	N/A	°C		DS18
Inp10	N/A	°C		DS18
Inp11	N/A	°C		DS18
DTH22	0.0	°C		temperature
DTH22	0.0	%		humidity
DIFF	0.0	°C		0 - 10

**Power measure**

P	W	Inp4*Inp5
P*t	0.000 Wh	Start Reset
INP4D	0.000 kWh	1000 Start Reset
INP4D	0.000 kWh	65535

#### DIGITAL Inputs State

INP1D INP2D INP3D INP4D

HIGH HIGH HIGH HIGH

INPD INPD INPD INPD

Negation

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## 1.1 ANALOG Inputs State (*Control Panel*)

ANALOG Inputs State

Input	Value	Unit	kal	Sensor type
Inp1	0.00	V	0.00	max 3,6Vx2.0
Inp2	0.03	V	0.00	max 36V
Inp3	N/A	°C	0.0	PT1000
Inp4	0.00	A	0.00	ACS 4.0
Inp5	0.0	V	0.0	3,6V x 1.0
Inp6	N/A	°C		DS18
Inp7	N/A	°C		DS18
Inp8	N/A	°C		DS18
Inp9	N/A	°C		DS18
Inp10	N/A	°C		DS18
Inp11	N/A	°C		DS18
DTH22	0.0	°C		temperature
DTR22	0.0	%		humidity
DIFF	0.0	°C		0 - 0
Power measure				
P	0.000	W	Inp4*Inp5	
P*t	0.000	Wh	Start	Reset
INP4D	0.000	kwh	1000	Start Reset
INP4D	0.000	kwh/	65535	

only v. 3.13

Added measurement of temperature difference with the selected temperature sensors - the value of **DIFF** in the table.

(enter the numbers of temperature sensors in the boxes - in the „DIFF” shows the difference of their values).

The numbers of sensors:

**0** – inserts 0 value, (then receive a value from one sensor, **positive or negative**, depending on which window (first or second) enter zero, and what temp. (+ or -) indicates a sensor)

**3** – pt1000

**4** – temp

**6** – inp6 (DS18B20)

**7** – inp7 (DS18B20)

**8** – inp8 (DS18B20)

**9** – inp9 (DS18B20)

**10** – inp10 (DS18B20)

**11** – inp11 (DS18B20)

**12** – DTH22 temperature

**NOTE:** The calculation of the value of **DIFF** is:

[value (+ or -) temp. sensor in **field 1**] – [value (+ or -) temp. sensor in **field 2**] = **DIFF**

**Examples:**

[+25 °C] – [+5 °C] = +20 °C

[+5 °C] – [+25 °C] = -20 °C

[+25 °C] – [-5 °C] = +30 °C

[+5 °C] – [-25 °C] = +30 °C

[-25 °C] – [+5 °C] = -30 °C

[-5 °C] – [+25 °C] = -30 °C

[-25 °C] – [-5 °C] = -20 °C

[-5 °C] – [-25 °C] = +20 °C

[no sensor (typed 0)] – [+10 °C] = -10 °C

[no sensor (typed 0)] – [-10 °C] = +10 °C

[+10 °C] – [no sensor (typed 0)] = +10 °C

[-10 °C] – [no sensor (typed 0)] = -10 °C

## 2. Events Config

Delay of set outputs  
after occur events,  
in seconds max 65535

If checked it responds  
to a change of state,  
otherwise no reaction (off)

inclusion  
of an input

The hysteresis  
value for  
a given input.

After exceeding  
a preset value  
upwards will be:  
the inclusion  
of an exit /  
PWM generator /  
send e-mail /  
SNMP Trap

After crossing  
the setpoint down  
will be:  
the inclusion  
of an exit /  
PWM generator /  
send e-mail /  
SNMP Trap

Save settings  
(ON/OFF  
input  
you don't  
must save)

Email text taht  
will be send if  
events occurance,  
max amount char  
is 79. **Chars „="**  
**and „&” are not**  
**allowed**

LAN SWITCH / HOME

Control Panel Events Config Scheduler Network Config

### Events Config

INPUTS		OUTPUTS / ACTION									
	HYSTERESIS	OUT0	OUT1	OUT2	OUT3	OUT4	OUT5	PWM	E-MAIL	SNMP TRAP	
DIFF	0.0	90.0 -90.0	90.0 -90.0	90.0 -90.0	90.0 -90.0	90.0 -90.0	90.0 -90.0	90.0 -90.0 0 Hz 0.0 %	text	90.0 -90.0	
VCC	0.0	90.0 -90.0	90.0 -90.0	90.0 -90.0	90.0 -90.0	90.0 -90.0	90.0 -90.0	90.0 -90.0 0 Hz 0.0 %	text	90.0 -90.0	
INP1	0.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00 0 Hz 0.0 %	text	9.00 -9.00	
INP2	0.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00 0 Hz 0.0 %	text	9.00 -9.00	
INP3	0.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00 0 Hz 0.0 %	text	9.00 -9.00	
INP4	0.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00 0 Hz 0.0 %	text	9.00 -9.00	
INP5	0.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00 0 Hz 0.0 %	text	9.00 -9.00	
INP6	0.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00 0 Hz 0.0 %	text	9.00 -9.00	
INP7	0.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00 0 Hz 0.0 %	text	9.00 -9.00	
INP8	0.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00 0 Hz 0.0 %	text	9.00 -9.00	
INP9	0.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00	9.00 -9.00 0 Hz 0.0 %	text	9.00 -9.00	
DTH	0.0	90.0 -90.0	90.0 -90.0	90.0 -90.0	90.0 -90.0	90.0 -90.0	90.0 -90.0	90.0 -90.0 0 Hz 0.0 %	text	90.0 -90.0	
DTH	0.0	90.0 -90.0	90.0 -90.0	90.0 -90.0	90.0 -90.0	90.0 -90.0	90.0 -90.0	90.0 -90.0 0 Hz 0.0 %	text	90.0 -90.0	
INP1D	255	255	255	255	255	255	255	0 Hz 0.0 % B	text		
INP2D	255	255	255	255	255	255	255	0 Hz 0.0 % B	text		
INP3D	255	255	255	255	255	255	255	0 Hz 0.0 % B	text		
INP4D	255	255	255	255	255	255	255	0 Hz 0.0 % B	text		

Save Config

tylko  
v. 3.13

tylko  
v. 2.09





### 3. Scheduler

LAN SWITCH/HOME

Control Panel

Events Config

Scheduler

Network Config

Scheduler

DATE and TIME: 2014-02-20; 12:12:43

☐ Enable S0  
0,Mo,00:00:00

☒ ON | ☐ OFF | RESET= 10

☐ Auto switch if INP1D ☐ 0/1

☐ Enable S1  
0,Mo,00:00:00

☒ ON | ☐ OFF | RESET= 10

☐ Auto switch if INP1D ☐ 0/1

☐ Enable S2  
0,Mo,00:00:00

☒ ON | ☐ OFF | RESET= 10

☐ Auto switch if INP1D ☐ 0/1

☐ Enable S3  
0,Mo,00:00:00

☒ ON | ☐ OFF | RESET= 10

☐ Auto switch if INP1D ☐ 0/1

☐ Enable S4  
0,Mo,00:00:00

☒ ON | ☐ OFF | RESET= 10

☐ Auto switch if INP1D ☐ 0/1

☐ Enable S5  
0,Mo,00:00:00

☒ ON | ☐ OFF | RESET= 10

☐ Auto switch if INP1D ☐ 0/1

☐ Enable S6  
0,Mo,00:00:00

☒ ON | ☐ OFF | RESET= 10

☐ Auto switch if INP1D ☐ 0/1

☐ Enable S7  
0,Mo,00:00:00

☒ ON | ☐ OFF | RESET= 10

☐ Auto switch if INP1D ☐ 0/1

☐ Enable S8  
0,Mo,00:00:00

☒ ON | ☐ OFF | RESET= 10

☐ Auto switch if INP1D ☐ 0/1

☐ Enable S9  
0,Mo,00:00:00

☒ ON | ☐ OFF | RESET= 10

☐ Auto switch if INP1D ☐ 0/1

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Allows you to block actions of Scheduler, if you change the input state INP1D

allows you to choose which state INP1D turn on the lock

**Format:** number output (from 0 to 4),day1,day2,day3,day4,day5,day6, xx:xx:xx(time)

**Week Day:** Mo - Monday, Tu- Tuesday, We - Wednesday, Th - Thursday, Fi - Friday, Sa - Saturday, Su - Sunday, ## - all week day. Letter size is important.

#### Example:

**0,Mo,12:23:00** - sets out0 every Monday at 12:23:00

**1,Sa,Fi,Mo,23:22:03** - sets out1 every Saturday, Friday and Monday at 23:22:03

**1,Sa,Fi,Mo,Tu,Su,Th,23:22:03** - sets out1 every Saturday, Friday, Monday, Tuesday, Sunday and Thursday at 23:22:03

**0,##,12:01:30** - sets out0 every week day at 12:01:30

The effect of this may be the inclusion of a relay, switched off or reset (turn on and off) for a limited period in seconds. (max 65535).

**NOTE:**

Some servers (eg. Google) require authentication outgoing mail. Unfortunately, our device does not provide this functionality. To send e-mail messages, select the servers that do not require it.

## 4. Network Configuration

LAN SWITCH/HOME

Control Panel

Events Config

Scheduler

Network Config

### Network Configuration

#### Email client settings

**SMTP Server:**  **Port:**

**User Name:**

**Password:**

**To:**

**From:**

**Subject:**

When you change setting press "Save Config" before Test

e-mail client settings parameter. After changing the settings in order to test the customer - should be save your settings - the „Save Config” button.

#### Network settings

**MAC Address:**

**Host Name:**

☐ **Enable DHCP**

**IP Address:**

**Gateway:**

**Subnet Mask:**

**Primary DNS:**

**Secondary DNS:**

**HTTP Port:**  max 65534

**ACCESS settings**

☒ Enable auth

**User:**

**Password:**   
Max char 8

---

**NTP settings**

**NTP Server:**  **Port:**

**Time Interval**

**Time Zone**

---

**SNMP settings**

**Read Comm1 :**

**Read Comm2 :**

**Write Comm1:**

**Write Comm2:**

☐ TRAP Enable

**Trap Reciver IP**

**Trap Comm**

The user name and password to access the module.

You can disable authorization.

NTP server settings.

Time Interval - the interval in minutes between synchronizations.

Fields community (password) for SNMP, must be the same in your queries in order to LK replied.

TRAP Enable – enabled send TRAP by SNMP.

**HTTP client settings** - this is http client configuration.

**HTTP client settings**

**Server address**  **Port:**  **time:**

**Remote URL**

**Auto send** ☒

This tool can easily send at specified intervals (time) value of the input or output states on a remote server. As an example will use a free server <https://www.thingspeak.com>, which allows you to show data in graphs in the timeline. To the contents of the command to add value I/O, use the „#“ and enter the number (a list of numbers p. 20).

Said sample server requires in turn give the command „GET /update?Key=“ then the key to our account (Write API key. Then, in turn attach a data field &field=#xx where xx is the two-digit number of I/O, for example. „&field=#05“

(NOTE! Record must be double digit, as we enter „5“ to write „05“. If you need to send data from several sensors are fields „field“ separated by commas.

Maximum server name is 31 characters, the maximum string RemouteURL is 127 characters. The time window, type frequency in seconds with which data will be sent to the server. In the following example, and **for normal queries between „GET“ and „/“ is a space**. Selecting Auto send and save this state will activate the function.

Enable Automatic Send TRAP – enable automatic send TRAP by SNMP (above TRAP Enable must be enable)

**only v. 3.13**

Time Interval (max value 10555) – period to send TRAP from given INPUT, accuracy 10 s

Time is set individually or with an NTP server. When set manually each time you reboot the machine need to set the time.

Output status when you turn on or reboot the LAN Controller

**only v. 3.13**

**only v. 2.09**

**AUTO SEND TRAP settings**

☐ Enable Automatic Send TRAP

☐ TEMP  
☐ VCC  
☐ INP1  
☐ INP2  
☐ INP3  
☐ INP4  
☐ INP5  
☐ INP6  
☐ INP7  
☐ INP8  
☐ INP9  
☐ INP10  
☐ INP11  
☐ DTH22t  
☐ DTH22h  
☐ INP1D  
☐ INP2D  
☐ INP3D  
☐ INP4D

Time Interval 6 \* 10s = 1.00m

**Date and Time**

NTP ☐  
Set Manual ☒ 2014-02-20:12:13:08

**Relay after start**

OUT0: ☐ ON  
OUT1: ☐ ON  
OUT2: ☐ ON  
OUT3: ☐ ON  
OUT4: ☐ ON  
OUT5: ☐ ON

OUT0: ☐ ON  
OUT1: ☐ ON  
OUT2: ☐ ON  
OUT3: ☐ ON  
OUT4: ☐ ON  
OUT\_T: ☐ ON

**Remote Control**

☐ Enable  
Server ☒ Port: 30000  
Client ☐ IP - 192.168.1.10 Port: 30000  
Password - password  
INP1D - ☐ OUT0 ☐ OUT1 ☐ OUT2 ☐ OUT3 ☐ OUT4  
INP2D - ☐ OUT0 ☐ OUT1 ☐ OUT2 ☐ OUT3 ☐ OUT4  
Save

**DS18B20 sets**

Read ID DS18 ID=28:FF:E6:E4:15:14:00:E1  
Save to position



**Assigning an item number for the currently connected sensor DS18B20.**

1. Connect chosen sensor (*others should be removed*), 2. Refresh the button „Read ID“, (if it does not appear ID, reset Lan Controller), 3. Enter the position number and press „Save to“ button. The read ID number will be assigned to the desired position, where „1“ corresponds to INP6, „2“ is INP7 ... and „6“ is INP11.

**To add additional sensors, proceed as described above CONNECTED WITH ONLY ONE, CURRENTLY added SENSOR.**

If you want to remove the assignment, refresh the „Read ID“ without sensor (*so that the field was empty*) and memorize the redundant item number („Save to“).

## 5. Watchdog (*only v. 2.09*)

WatchDog

☐ Enable IP0  
**IP0** host or IP

**OUT: 0** ☒ ON | ☐ OFF | ☐ RESET= 10 s | PING Failures 3 ☐ WD

☐ Enable IP1  
**IP1** host or IP

**OUT: 1** ☒ ON | ☐ OFF | ☐ RESET= 10 s | PING Failures 3 ☐ WD

☐ Enable IP2  
**IP2** host or IP

**OUT: 2** ☒ ON | ☐ OFF | ☐ RESET= 10 s | PING Failures 3 ☐ WD

☐ Enable IP3  
**IP3** host or IP

**OUT: 3** ☒ ON | ☐ OFF | ☐ RESET= 10 s | PING Failures 3 ☐ WD

☐ Enable IP4  
**IP4** host or IP

**OUT: 4** ☒ ON | ☐ OFF | ☐ RESET= 10 s | PING Failures 3 ☐ WD

☐ Enable IP5  
**IP5** host or IP

**OUT: 5** ☒ ON | ☐ OFF | ☐ RESET= 10 s | PING Failures 3 ☐ WD

6 s interval time - between next ping,

30 s Wait time - before again ping, after event

Time to wait for respond is 4s

(max 65535s).

Time to respond is 4 seconds, after this time if no response one PING failure is counting. Then if it happen, during waiting for next respond PINGs to other IP addresses are not realised. It can stretch watchdog time to other IP addresses.

Amount PING failures, after this one of three events will be happen: set (ON) output, set (OFF) output reset (ON/OFF) output on definite time (max 65535s).

Selecting this option forces the watchdog off when in the Event Table occur off / on the socket.

Upon his return to the previous state output watchdog is started automatically.



**Remote Control** - working as a server (receiving packets and enables / disables the corresponding output) or client (send packets to the server status change to INP1D or INP2D). LK working as a server can be actuated from any number of clients, provided it is set to the same password. Change in INP1D or INP2D low can switch outputs selected in the state of „ON“, return to enter the high state output switches to „OFF“.

## I/O TABLE NUMBERS (soft 3.XX)

```
#define OUT0 (5)
#define OUT1 (6)
#define OUT2 (7)
#define OUT3 (8)
#define OUT4 (9)
#define OUT5 (10)
#define TEMP (11)
#define VCC (12)
#define INP1 (13)
#define INP2 (14)
#define INP3 (15)
#define INP4 (16)
#define INP5 (17)
#define INP6 (18)
#define INP7 (19)
#define INP8 (20)
#define INP9 (21)
#define INP10 (22)
#define INP11 (23)
#define DTH22_1 (24)
#define DTH22_2 (25)
#define DIFT (26)
#define I3XI5 (30)
#define PXT (31)
#define PINP4D (32)
#define PINP4D_24H (33)
#define INP1D (41)
#define INP2D (42)
#define INP3D (43)
#define INP4D (44)
```

## I/O TABLE NUMBERS (soft 2.XX)

```
#define OUT0 (5)
#define OUT1 (6)
#define OUT2 (7)
#define OUT3 (8)
#define OUT4 (9)
#define OUT5 (10)
#define TEMP (11)
#define VCC (12)
#define INP1 (13)
#define INP2 (14)
#define INP3 (15)
#define INP4 (16)
#define INP5 (17)
#define INP6 (18)
#define INP7 (19)
#define INP8 (20)
#define INP9 (21)
#define INP10 (22)
```

## Reading XML data

Enter the IP address and the page name eg 192.168.1.100/st0.xml

**The values of the sensors should be divided by 10**

**Control Panel:**

- Dynamic data - st0.xml

- Static data - st2.xml

**Events Config:** s.xml

**Scheduler:** sch.xml

**Network Config:** board.xml

**Working time:** s\_time.xml using the Timezone

## Switching sockets http request

You can arm / switch set out without clicking on the buttons in the control panel, making use of the following commands :

**IP/outs.cgi?out=xxxxx** – switches set the output to the opposite of the current

**IP/outs.cgi?outx=x** – disable or enable a specific output

when password authentication is enabled , the command of the following form :

**user:password@IP/outs.cgi?out=xxxxx**

**user:password@IP/outs.cgi?outx=x**

### Examples:

**192.168.1.100/outs.cgi?out=0** – changes the output state to the opposite out0

**192.168.1.100/outs.cgi?out=2** – out2 output changes state to the opposite

**192.168.1.100/outs.cgi?out=02** – changes the output state out0 and out2  
to the opposite

**192.168.1.100/outs.cgi?out=01234** – changes the state of the outputs of out0 to out4  
the opposite

**192.168.1.100/outs.cgi?out0=0** – turns out out0 ( ON state )

**192.168.1.100/outs.cgi?out0=1** – turns out out0 ( OFF )

**192.168.1.100/outs.cgi?out1=0** – turns out out1 ( ON state )

**192.168.1.100/outs.cgi?out1=1** – turns out out1 ( OFF )

**192.168.1.100/outs.cgi?out4=0** – turns out out4 ( ON state )

**192.168.1.100/outs.cgi?out4=1** – turns out out4 ( OFF )

## Managing PWM by HTTP GET:

change frequency:

**http://192.168.1.100/ind.cgi?pwmf=9777** – setup frequency to 9777

change duty:

**http://192.168.1.100/ind.cgi?pwmd=855** – setup duty to 85,5%

**http://192.168.1.100/ind.cgi?pwm=1** – activates pwm output

**http://192.168.1.100/ind.cgi?pwm=0** – off pwm output

**http://192.168.1.100/ind.cgi?pwmd=990** – setup duty cycle pwm to 99%

**http://192.168.1.100/ind.cgi?pwmf=5000** – setup 5 kHz frequency has all pwm outputs, that is, PWM, PWM1, PWM2, PWM3

**http://192.168.1.100/ind.cgi?pwm1=1** – activates pwm1 output

**http://192.168.1.100/ind.cgi?pwm1=0** – off pwm1 output

**http://192.168.1.100/ind.cgi?pwm2=1** – activates pwm2 output

**http://192.168.1.100/ind.cgi?pwm2=0** – off pwm2 output

**http://192.168.1.100/ind.cgi?pwm3=1** – activates pwm3 output

**http://192.168.1.100/ind.cgi?pwm3=0** – off pwm3 output

**http://192.168.1.100/ind.cgi?pwmd1=500** – setup duty cycle pwm1 to 50%

**http://192.168.1.100/ind.cgi?pwmd2=990** – setup duty cycle pwm2 to 99%

**http://192.168.1.100/ind.cgi?pwmd3=100** – setup duty cycle pwm3 to 10%

**An accurate description of all the settings by POST / GET  
for Even Config and the Scheduler is in a separate file  
„POST / GET data description”  
(downloadable from [www.tinycontrol.eu](http://www.tinycontrol.eu))**

## NUMBERS OID for SNMP

```
#define SYS_DESCR (99)      // iso.3.6.1.2.1.1.0: READONLY ASCII_STRING.
#define SYS_UP_TIME (97)    // iso.3.6.1.2.1.1.3.0: READONLY TIME_TICKS.
#define SYS_NAME (98)      // iso.3.6.1.2.1.1.4.0: READWRITE ASCII_STRING.
#define TRAP_RECEIVER_ID (1) // iso.3.6.1.4.1.17095.2.1.1.0: READWRITE BYTE.
#define TRAP_RECEIVER_ENABLED (2) // iso.3.6.1.4.1.17095.2.1.1.2.0: READWRITE BYTE.
#define TRAP_RECEIVER_IP (3) // iso.3.6.1.4.1.17095.2.1.1.3.0: READWRITE IP_ADDRESS.
#define TRAP_COMMUNITY (4) // iso.3.6.1.4.1.17095.2.1.1.4.0: READWRITE ASCII_STRING.
#define OUT0 (5)           // iso.3.6.1.4.1.17095.3.1.0: READWRITE BYTE.
#define OUT1 (6)           // iso.3.6.1.4.1.17095.3.2.0: READWRITE BYTE.
#define OUT2 (7)           // iso.3.6.1.4.1.17095.3.3.0: READWRITE BYTE.
#define OUT3 (8)           // iso.3.6.1.4.1.17095.3.4.0: READWRITE BYTE.
#define OUT4 (9)           // iso.3.6.1.4.1.17095.3.5.0: READWRITE BYTE.
#define ALL (90)           // iso.3.6.1.4.1.17095.3.100.0: READONLY OCTET_STRING.
#define TEMP (10)          // iso.3.6.1.4.1.17095.4.1.0: READONLY ASCII_STRING.
#define VCC (11)           // iso.3.6.1.4.1.17095.4.2.0: READONLY ASCII_STRING.
#define INP1 (12)          // iso.3.6.1.4.1.17095.4.3.0: READONLY ASCII_STRING.
#define INP2 (13)          // iso.3.6.1.4.1.17095.4.4.0: READONLY ASCII_STRING.
#define INP3 (14)          // iso.3.6.1.4.1.17095.4.5.0: READONLY ASCII_STRING.
#define INP4 (15)          // iso.3.6.1.4.1.17095.4.6.0: READONLY ASCII_STRING.
#define INP5 (16)          // iso.3.6.1.4.1.17095.4.7.0: READONLY ASCII_STRING.
#define INP6 (17)          // iso.3.6.1.4.1.17095.5.1.0: READONLY ASCII_STRING.
#define INP7 (18)          // iso.3.6.1.4.1.17095.5.2.0: READONLY ASCII_STRING.
#define INP8 (19)          // iso.3.6.1.4.1.17095.5.3.0: READONLY ASCII_STRING.
#define INP9 (20)          // iso.3.6.1.4.1.17095.5.4.0: READONLY ASCII_STRING.
#define INP10 (21)         // iso.3.6.1.4.1.17095.5.5.0: READONLY ASCII_STRING.
#define INP11 (22)         // iso.3.6.1.4.1.17095.5.6.0: READONLY ASCII_STRING.
#define DTH22_1 (23)       // iso.3.6.1.4.1.17095.6.1.0: READONLY ASCII_STRING.
#define DTH22_2 (24)       // iso.3.6.1.4.1.17095.6.2.0: READONLY ASCII_STRING.
#define I3XI5 (30)         // iso.3.6.1.4.1.17095.7.1.0: READONLY ASCII_STRING.
#define PXT (31)           // iso.3.6.1.4.1.17095.7.2.0: READONLY ASCII_STRING.
#define PINP4D (32)        // iso.3.6.1.4.1.17095.7.3.0: READONLY ASCII_STRING.
#define PINP4D_24H (33)    // iso.3.6.1.4.1.17095.7.4.0: READONLY ASCII_STRING.
#define INP1D (41)         // iso.3.6.1.4.1.17095.10.1.0: READONLY BYTE.
#define INP2D (42)         // iso.3.6.1.4.1.17095.10.2.0: READONLY BYTE.
#define INP3D (43)         // iso.3.6.1.4.1.17095.10.3.0: READONLY BYTE.
#define INP4D (44)         // iso.3.6.1.4.1.17095.10.4.0: READONLY BYTE.
```

## Firmware Upgrade

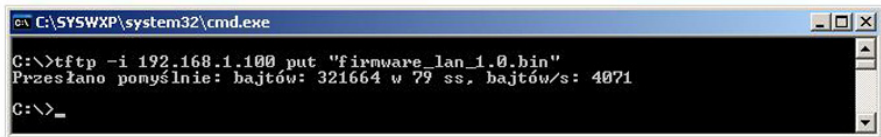
In the event that there is a new version of the software or special version for application, it is possible to load such software to the device. This can be done remotely over the network using TFTP.

You may upgrade firmware on two ways:

1. By dedicated software **LAN Controller Tools.exe** (find controller or put IP and click „Upgrade Firmware”).
2. By any TFTP client, description below.

Send firmware file by TFTP, you have 5 seconds (Green LED on RJ45 socket blink) to start sending firmware when module runs after reset (you may cause reset by clicking button „Save config and Reboot” in Network configuration or „Reset” button on board or dedicated software „LAN Controller Tools”). If start transmission does not happen that device starts work normally. If TFTP transmission will start then wait about 90 seconds to finish uploading firmware. After upload device will be reset and start normally. If you want to upload upgrade file choose „Save config and Reboot” in Network configuration or power OFF and power ON device.

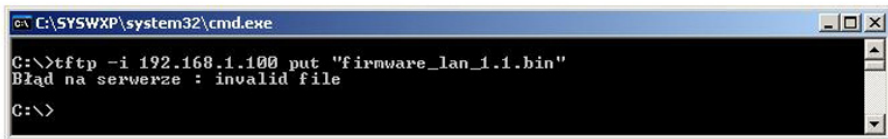
**The file must be sent in binary mode** eg. In Windows XP tftp client  
 tftp -i 192.168.1.100 put „file\_upgrade.bin”.



```
C:\SYSWXP\system32\cmd.exe
C:\>tftp -i 192.168.1.100 put "firmware_lan_1.0.bin"
Przesłano pomyślnie: bajtów: 321664 w 79 ss, bajtów/s: 4071
C:\>_
```

After successful loading, the device will reboot and will be ready to go.

If you try to send the wrong file get an error message „invalid file”



```
C:\SYSWXP\system32\cmd.exe
C:\>tftp -i 192.168.1.100 put "firmware_lan_1.1.bin"
Błąd na serwerze : invalid file
C:\>
```

Contents of the instructions is regularly checked and if necessary corrected. If the observations errors or inaccuracies, please contact us. It can not be ruled out that, despite best efforts, however, some discrepancies arose. To get the latest version, please contact us or distributors.

## NOTES



## NOTES

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