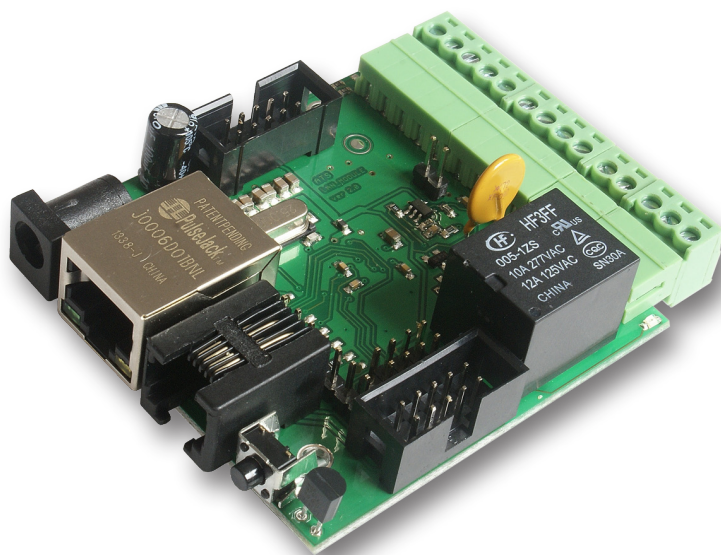


LAN Controller V2.0

Firmware version 3.10



Manual

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. Additionally Events Config feature allow you to program the appropriate action when sensor readings met certain conditions. ISP can use watchdog function, it check the ping up to 5 network devices, and if no response runs the relays. Useful for many applications can be a Scheduler, that allows the on / off the device at a specified time or for a specified period of time. There is also PWM outputs to control brightness of light or an electric motor speed. For far rom socket installation board could be powered by passive PoE. Few versions of firmware is available today, each is developed and after publication customer could upgrade it by preaped software (**LAN Controller Tools**). In Accessory (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

- Irigation 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
- 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
- power measurement for DC voltage
- power measurement from grid by electricity meterer impulse
- 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
- implemented protocols: HTTP, SNMP, SMTP, SNTP, 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

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

TECHNICAL SPECIFICATIONS

- supply voltage: 8÷28 V DC
- power consumption : about 1W
- PoE supply: YES, passive
- Protection from wrong supply polarization: YES
- interface: ethernet 10Mbit/s
- relay: 255VAC 10A
- operating temperature: –20 to +85 °C
- weight: 50g
- dimensions: 60 x 68 mm (without plugs)

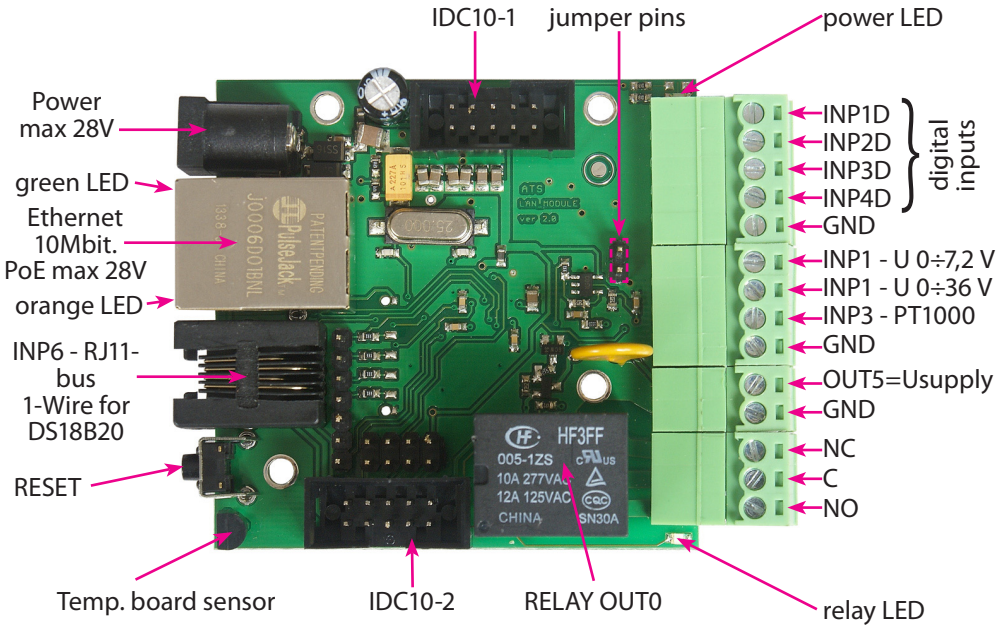
INPUT/OUTPUT:

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

Default user and password is „admin”,

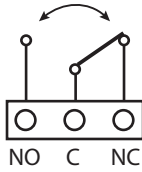
IP address is 192.168.1.100

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
INP4D	Also supports a pulse counter
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

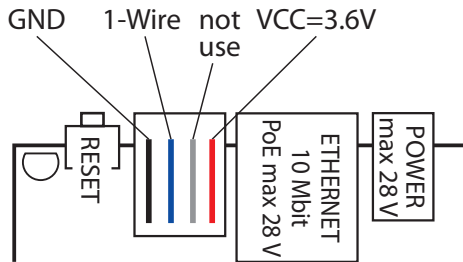
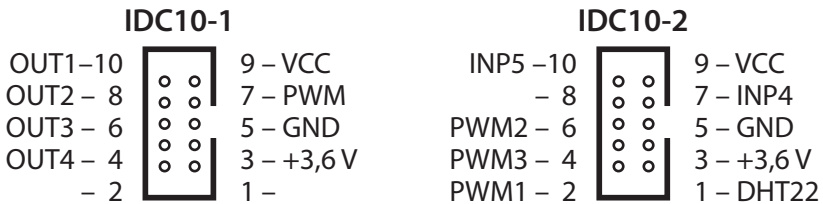
RELAY BOND:



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

Push about 0,5 second cause change relay state on opposite, push and keep longer about 5 second (if we not logged by WWW on modul) cause modul reset, next if you still keep button about 10 second cause set all settings to default. Set all settings to default confirmation is fast switch relay on/off (klik-klik), don't wrong this with change relay state about 0,5s and switch relay off after restart.

User and password: admin

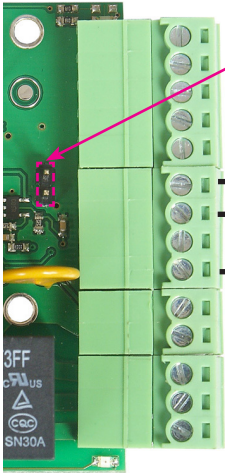
IP: 192.168.1.100

SENSORS CONNECT

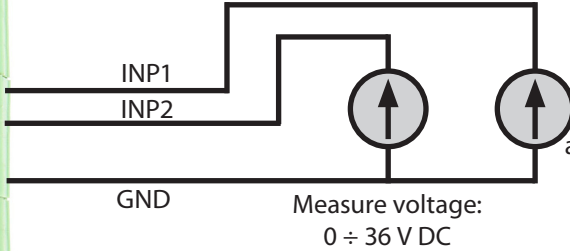
1. Voltage measurement

Sensor type
max 3,6Vx 2.0
max 36V
PT1000

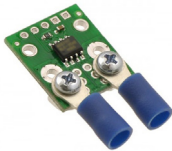
multiplier



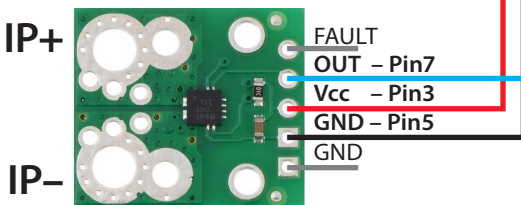
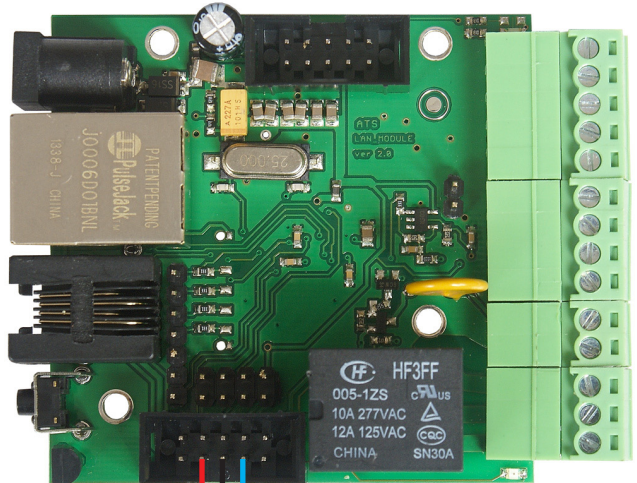
jumper



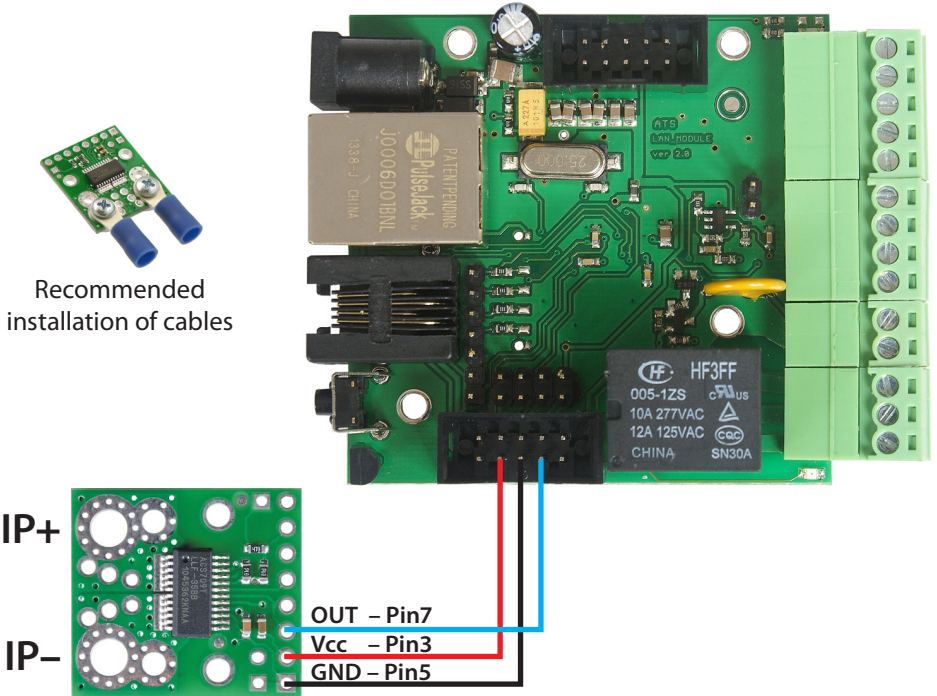
2. Connecting the current sensor ACS711ex



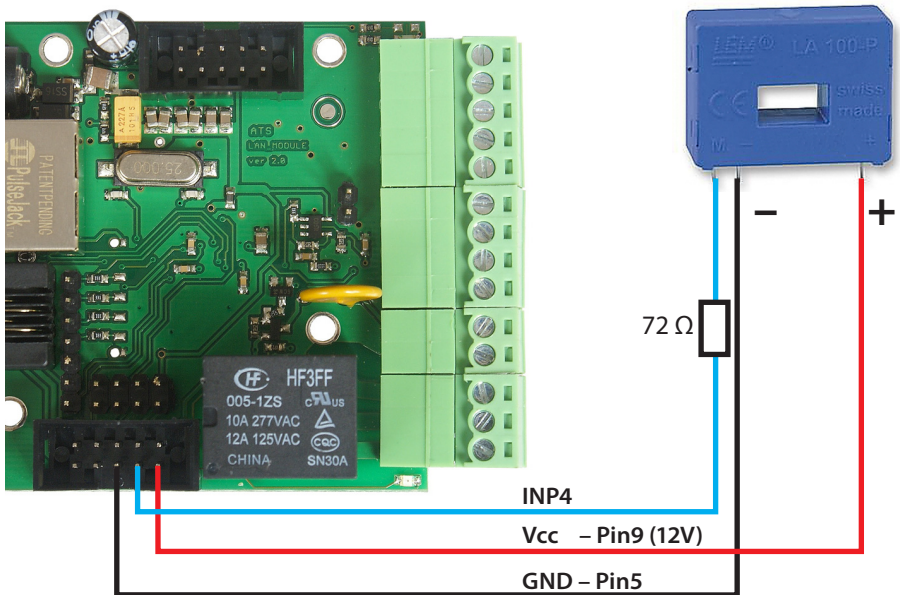
Recommended installation of cables



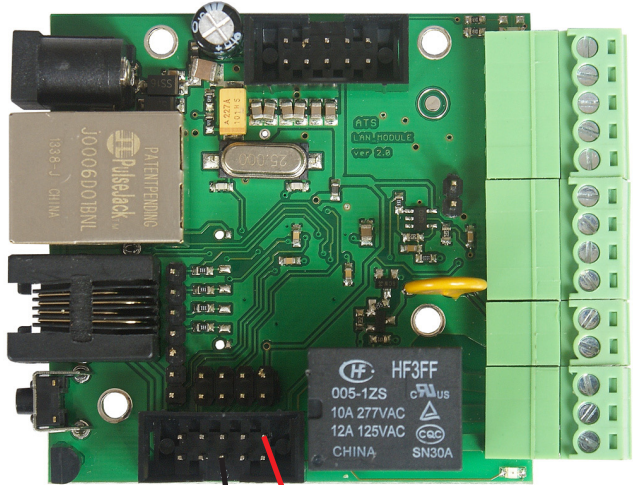
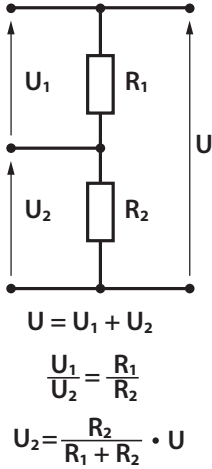
3. Connecting the current sensor ACS709



4. Connecting the sensor LA100-P



5. Voltage connections to INP5 using a resistive divider



EXAMPLE

U – Input voltage for the measurement

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

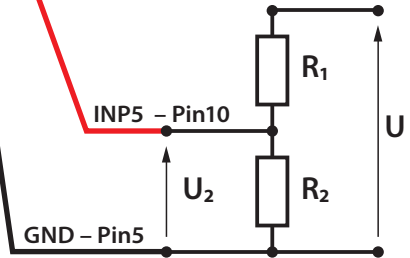
for the measurement of up to 36 V, use the divider:

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

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)

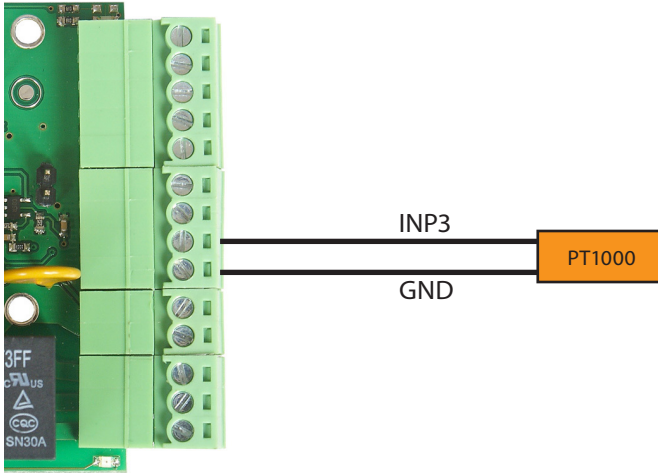
ACS = 4.0 – resistor 0,1 Ω

ACS = 5.0 – LA100-P (through resistor 75 Ω)

Inp4	0.00	A	0.00	ACS 4.0
Inp5	0.0	V	0.0	3,6V x 1.0

← multiplier

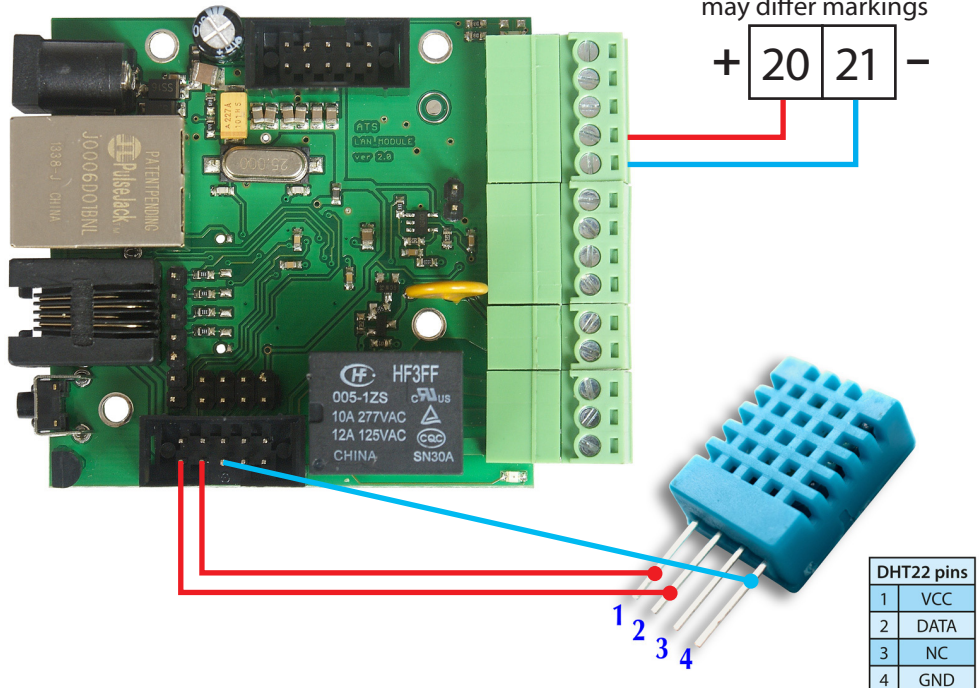
7. Temperature measurement



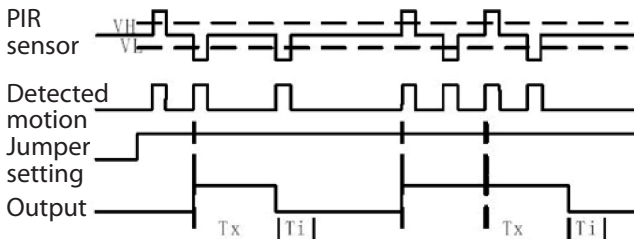
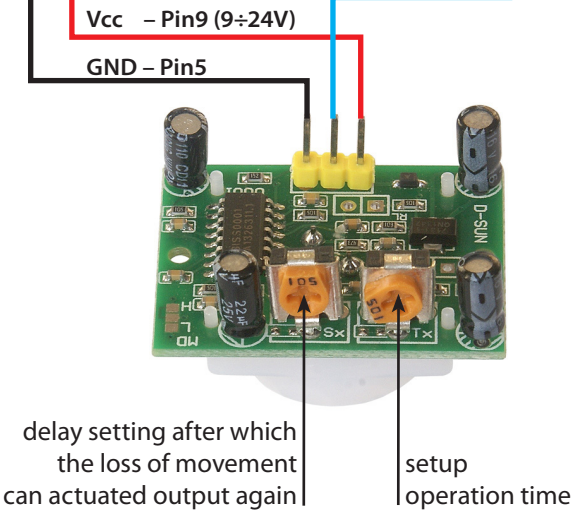
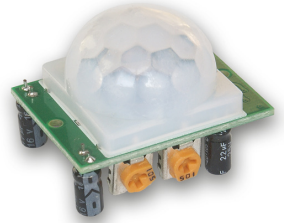
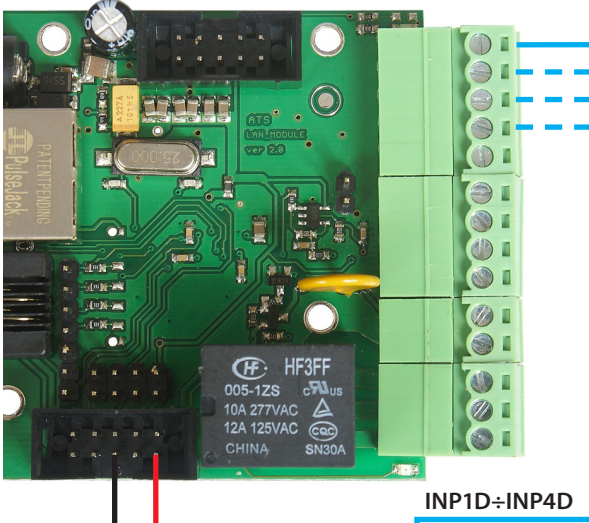
8. DHT22 sensor and pulse output from the counter

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

output terminals of the meter pulse energy for different counters may differ markings



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

Select the type of sensor connected to the corresponding input

Any text description, max 8 chars

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 :

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 - 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

DIGITAL Inputs State

INP1D INP2D INP3D INP4D

HIGH HIGH HIGH HIGH

INPD INPD INPD INPD

Negation

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.

Negation for digital input for Even Config tripping

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.

Time averaged over a values of power measurement (in minutes)

Run Power measure from INP3 (voltage) and INP5 (current)

1.1 ANALOG Inputs State (Control Panel)

ANALOG Inputs State

Input	Value	Unit	kal	Sensor type
Inp1	0.00	V	0.00	max 3,6Vx 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
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	

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 window in which you type)
 - 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

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)

LAN SWITCH / HOME

Control Panel **Events Config** Scheduler Network Config

Events Config

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

Save Config

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 that will be send if events occurrence, max amount char is 79. **Chars „=" and „&" are not allowed**

For logical input INP1D ÷ INP4D, e-mail and SNMP Trap notification are send when input level change from 1 to 0 or 0 to 1, additional to email text (at end) will be add value 1 or 0 mark actual input state.

INP9 <input type="checkbox"/> 0.0	<input type="checkbox"/> 90.0 <input type="checkbox"/> -90.0	<input type="checkbox"/> 90.0 <input type="checkbox"/> -90.0	<input type="checkbox"/> 90.0 <input type="checkbox"/> -90.0	<input type="checkbox"/> 90.0 <input type="checkbox"/> -90.0	<input type="checkbox"/> 90.0 <input type="checkbox"/> -90.0	<input type="checkbox"/> 90.0 <input type="checkbox"/> -90.0	<input type="checkbox"/> 0 Hz <input type="checkbox"/> 0.0 %	<input type="checkbox"/> 90.0 <input type="checkbox"/> -90.0 text	<input type="checkbox"/> 90.0 <input type="checkbox"/> -90.0
INP1D	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 0 Hz <input type="checkbox"/> 0.0 % <input type="checkbox"/> B	<input type="checkbox"/> text	<input type="checkbox"/>
INP2D	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 0 Hz <input type="checkbox"/> 0.0 % <input type="checkbox"/> B	<input type="checkbox"/> text	<input type="checkbox"/>
INP3D	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 0 Hz <input type="checkbox"/> 0.0 % <input type="checkbox"/> B	<input type="checkbox"/> text	<input type="checkbox"/>
INP4D	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 255 <input type="checkbox"/> B	<input type="checkbox"/> 0 Hz <input type="checkbox"/> 0.0 % <input type="checkbox"/> B	<input type="checkbox"/> text	<input type="checkbox"/>

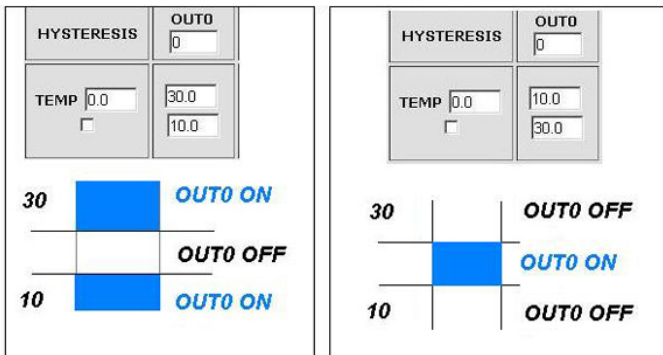
Save Config

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Bistable operation input - the first change at INPD to turn on output, the second amendment to disable output

If a value greater than 0, is at work bistable output is automatically switched off after this time, max 255 seconds

Functional Description Event Table



With this change, you can flexibly define thresholds and intervals in which such slot is to be enabled / disabled.

If you have the proper checks the condition of a number of sensors is to force the state OUTX outputs and setting the PWM generator to be that was last registered event.

3. Scheduler

LAN SWITCH/HOME

Control Panel
Events Config
Scheduler
Network Config

Scheduler

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

<input type="checkbox"/> Enable S0	0,Mo,00:00:00	<input checked="" type="radio"/> ON <input type="radio"/> OFF RESET= 10	<input checked="" type="checkbox"/> Auto switch if INP1D <input type="checkbox"/> 0/1
<input type="checkbox"/> Enable S1	0,Mo,00:00:00	<input checked="" type="radio"/> ON <input type="radio"/> OFF RESET= 10	<input type="checkbox"/> Auto switch if INP1D <input type="checkbox"/> 0/1
<input type="checkbox"/> Enable S2	0,Mo,00:00:00	<input checked="" type="radio"/> ON <input type="radio"/> OFF RESET= 10	<input type="checkbox"/> Auto switch if INP1D <input type="checkbox"/> 0/1
<input type="checkbox"/> Enable S3	0,Mo,00:00:00	<input checked="" type="radio"/> ON <input type="radio"/> OFF RESET= 10	<input type="checkbox"/> Auto switch if INP1D <input type="checkbox"/> 0/1
<input type="checkbox"/> Enable S4	0,Mo,00:00:00	<input checked="" type="radio"/> ON <input type="radio"/> OFF RESET= 10	<input type="checkbox"/> Auto switch if INP1D <input type="checkbox"/> 0/1
<input type="checkbox"/> Enable S5	0,Mo,00:00:00	<input checked="" type="radio"/> ON <input type="radio"/> OFF RESET= 10	<input type="checkbox"/> Auto switch if INP1D <input type="checkbox"/> 0/1
<input type="checkbox"/> Enable S6	0,Mo,00:00:00	<input checked="" type="radio"/> ON <input type="radio"/> OFF RESET= 10	<input type="checkbox"/> Auto switch if INP1D <input type="checkbox"/> 0/1
<input type="checkbox"/> Enable S7	0,Mo,00:00:00	<input checked="" type="radio"/> ON <input type="radio"/> OFF RESET= 10	<input type="checkbox"/> Auto switch if INP1D <input type="checkbox"/> 0/1
<input type="checkbox"/> Enable S8	0,Mo,00:00:00	<input checked="" type="radio"/> ON <input type="radio"/> OFF RESET= 10	<input type="checkbox"/> Auto switch if INP1D <input type="checkbox"/> 0/1
<input type="checkbox"/> Enable S9	0,Mo,00:00:00	<input checked="" type="radio"/> ON <input type="radio"/> OFF RESET= 10	<input type="checkbox"/> Auto switch if INP1D <input type="checkbox"/> 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 Receiver 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 Configuration - Below is a sample screenshot settings HTTP client to send data to the server <https://www.thingspeak.com>, (you can create an account and test) . To add a content query the value of a specific sensor or I/O , use the „# „ and enter the number (below the list of numbers for I/O). Said sample server requires a field name = value, you can type on a matter such as field = 12.4, then you will be sent a constant value 12.4 to the server. To send a specific value , enter the sensor field = # xx, where xx - a two-digit number of I/Os. **(NOTE! Record must be double digit, as we enter „5” to write „05”.** How do we want to send data from several sensors that use the #xx several times). 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.

HTTP client settings

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

Remote URL

Auto send

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

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

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 * 10s = 1.00m

Date and Time

NTP

Set Manual

Relay after start

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

Remote Control

Enable

Server

Client

INP1D - OUT0 OUT1 OUT2 OUT3 OUT4
INP2D - OUT0 OUT1 OUT2 OUT3 OUT4

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 3.00)

#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 I3X15 (30)
#define PXT (31)
#define PINP4D (32)
#define PINP4D_24H (33)
#define INP1D (41)
#define INP2D (42)
#define INP3D (43)
#define INP4D (44)

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)**

NUMBERS OID for SNMP

```

#define SYS_DESCR (99)      // iso.3.6.1.2.1.1.1.0: 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.3.6.1.4.1.17095.2.1.1.1.0: 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

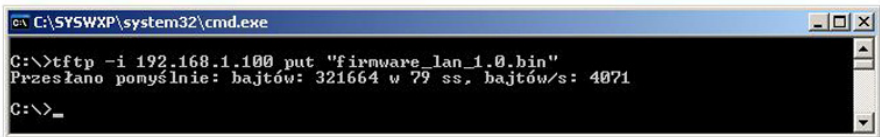
In the event that there is a new version of the software or special version for application, it is possible to load such software to the device. This can be done remotely over the network using TFTP.

You may upgrade firmware on two ways:

1. By dedicated software „LAN Controller Tools” (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 also reset by clicking button „Save config and Reboot” in Network configuration or „Reset” button on board or dedicated software „LAN Controller Tools”). If transmission does not happen, the device starts working normally. If TFTP transmission will start, then wait about 90 seconds to finish uploading firmware. After upload, the device will be reset and start normally. If you want to upload an 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”.

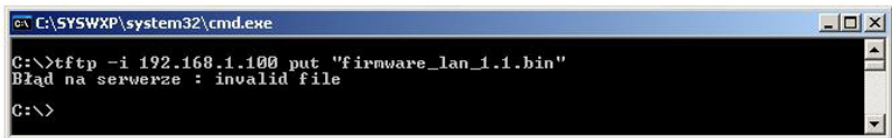


```

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, you 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

NOTES

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