

SNMP 12 Channel I/O Relay Module

User's Manual
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1. About this document

This document describes only the specific features of the device [Internet/Ethernet 12 Channel I/O Relay Module \(Board\) - IP, SNMP](#). This module consist of [DAEnetIP1](#) controller and extension I/O relay board which is the main object of this document. For full description of the all DAEnetIP1 features, you can refer to [DAEnetIP1 user's manual](#).

2. Overview

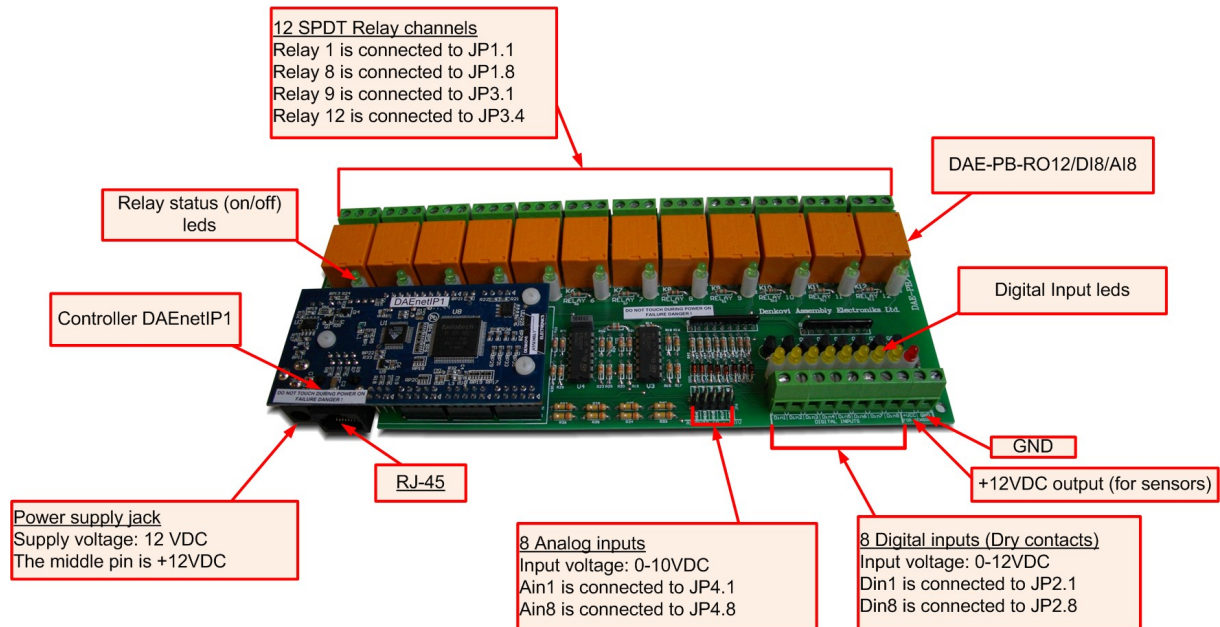


Figure 1. Module overview

The module has:

- 12 x SPDT relays RAS-12-15 or JQC-3FC/T73 (selectable during purchase):
 - JQC-3FC/T73 (7A / 250VAC, 10A / 125VAC, 12A / 120VAC, 10A / 28VDC)
 - RAS-12-15 (10A / 250VAC, 15A / 120VAC, 15A / 24VDC)
- 8 x digital inputs (0-12VDC)
- 8 x analog inputs (0-10VDC)
- Leds for: relays, digital inputs, power on
- 12VDC sensor supply output
- Some of the above parameters can be changed by request

MPN reference (ordering codes):

- DAE-PB-RO12-JQC/DI8/AI8 + DAEnetIP1 (for JQC-3FC/T73 relays)
- DAE-PB-RO12/DI8/AI8 + DAEnetIP1 (for RAS-12-15 relays)

3. Relay outputs

Because of the control logic of the relays, when the digital output is in High Level, the relay is OFF. When it is in Low Level, the relay is ON.

Table 1. Relays electrical characteristics

Type			RAS-12-15	JQC-3FC/T73
Relay outputs count			12	12
Contact type			NO, NC	NO, NC
Current consumption	12 VDC	mA	30	30
Switching parameters		A	15 (24 VDC)	10 (28 VDC)
		A	15 (120 VAC)	12 (120 VAC)
		A	10 (250 VAC)	10 (125 VAC)
		A		7 (250 VAC)

Table 2. Mapping to DAEnetIP1 JP1/JP3 digital output port

Digital output pin # (DAEnetIP1 JP1 and JP3)	Relay # (from peripheral board)
JP1.1	Relay 1
JP1.2	Relay 2
JP1.3	Relay 3
JP1.4	Relay 4
JP1.5	Relay 5
JP1.6	Relay 6
JP1.7	Relay 7
JP1.8	Relay 8
JP3.1	Relay 9
JP3.2	Relay 10
JP3.3	Relay 11
JP3.4	Relay 12

3.1. How to control the relays

3.1.1. Web browser

IO

Control

8xDO (JP1)

8xDIO (JP2)

4xDO (JP3)

8xAI (JP4)

Pings

System

Setup

SNMP

Admin

WEB Firmware Update

TFTP Firmware Update

Restart

JP1 Control

Save Pin State Switch delay, sec.

☒ Pin1
☐ 0

☒ Pin2
☐ 0

☒ Pin3
☐ 0

☒ Pin4
☒ 0

☒ Pin5
☒ 0

☒ Pin6
☒ 0

☒ Pin7
☐ 0

Set

SetDelay

JP1 Description

Description, 14chr.

Relay 1

Relay 2

Relay 3

Relay 4

Relay 5

Relay 6

Relay 7

Relay 8

SetDescr

Figure 2. JP1 web page

IO Control
8xDO (JP1)
8xDIO (JP2)
4xDO (JP3)
8xAI (JP4)
Pings
System
Setup
SNMP
Admin
WEB Firmware Update
TFTP Firmware Update
Restart

JP3 Control			JP3 Description
Save Pin	State	Switch delay, sec.	Description
☒ Pin0	☐	0	
☒ Pin1	☐	0	
☒ Pin2	☐	0	
☒ Pin3	☒	0	
☒ Pin4	☐	0	
☒ Pin5	☐	0	
☒ Pin6	☐	0	
☒ Pin7	☐	0	

Figure 3. JP3 web page

3.1.2. Example SNMP commands

○ **SNMP GET COMMANDS**

Get Relay 1 State

```
snmpget -v1 -c private 192.168.0.100 .1.3.6.1.4.1.32111.1.1.1.1
answer: INTEGER: High(1) //Relay is OFF
```

Get Relay 8 State

```
snmpget -v1 -c private 192.168.0.100 .1.3.6.1.4.1.32111.1.1.1.8
answer: INTEGER: Low(0) //Relay is ON
```

Get Relay 9 State

```
snmpget -v1 -c private 192.168.0.100 .1.3.6.1.4.1.32111.1.4.2.1
answer: INTEGER: Low(0) //Relay is ON
```

Get Relay 12 State

```
snmpget -v1 -c private 192.168.0.100 .1.3.6.1.4.1.32111.1.4.2.4
answer: INTEGER: High(1) //Relay is OFF
```

○ **SNMP SET COMMANDS**

Set Relay 1 State ON

```
snmpset -v1 -c private 192.168.0.100 .1.3.6.1.4.1.32111.1.1.1.1 i 0
```

Set Relay 8 State OFF

```
snmpset -v1 -c private 192.168.0.100 .1.3.6.1.4.1.32111.1.1.1.8 i 1
```

Set Relay 9 State ON

```
snmpset -v1 -c private 192.168.0.100 .1.3.6.1.4.1.32111.1.4.2.1 i 0
```

Set Relay 12 State OFF

```
snmpset -v1 -c private 192.168.0.100 .1.3.6.1.4.1.32111.1.4.2.4 i 1
```

3.1.3. DAEnetIP1 Manager

DAEnetIP1 Manager - ver 1.3

Log in Port JP1 Port JP2 Relay control ADC SNMP Settings Admin Update

JP1 - Eight general purpose digital outputs

Save Pin	State	Sw. Delay sec.	Description
☒	☒ P3.1	0	Relay 1
☒	☒ P3.2	0	Relay 2
☒	☒ P3.3	0	Relay 3
☒	☒ P3.4	0	Relay 4
☒	☐ P3.5	0	Relay 5
☒	☐ P3.6	0	Relay 6
☒	☐ P3.7	0	Relay 7
☒	☒ P3.8	0	Relay 8

☐ Inverse states

Set Set

Refresh 18.01.2014 / 14:35:04 >>> Data received

Figure 4. DAEnetIP1 Manager - JP1

DAEnetIP1 Manager - ver 1.3

Log in Port JP1 Port JP2 Relay control ADC SNMP Settings Admin Update

JP3 - Four relay outputs

Save Pin	State	Sw. Delay sec.	Description
☒	☒ P3.1	0	00
☒	☒ P3.2	0	00
☒	☒ P3.3	0	00
☒	☐ P3.4	0	00

☐ Inverse states

Set Set

Refresh 18.01.2014 / 14:35:04 >>> Data received

Figure 5. DAEnetIP1 Manager - JP3

3.2. How to use the relays

3.2.1. Controlling lamp

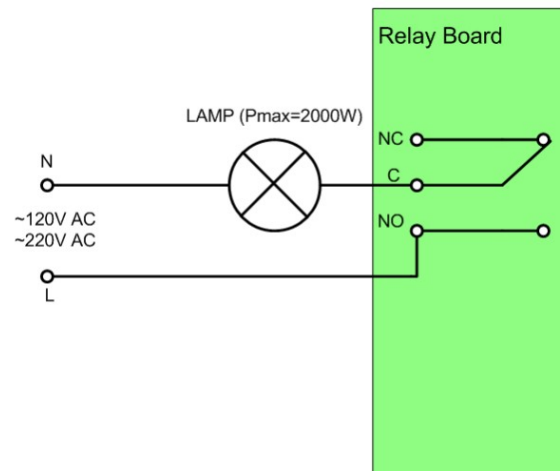


Figure 6. Controlling lamp

3.2.2. Controlling inductive load

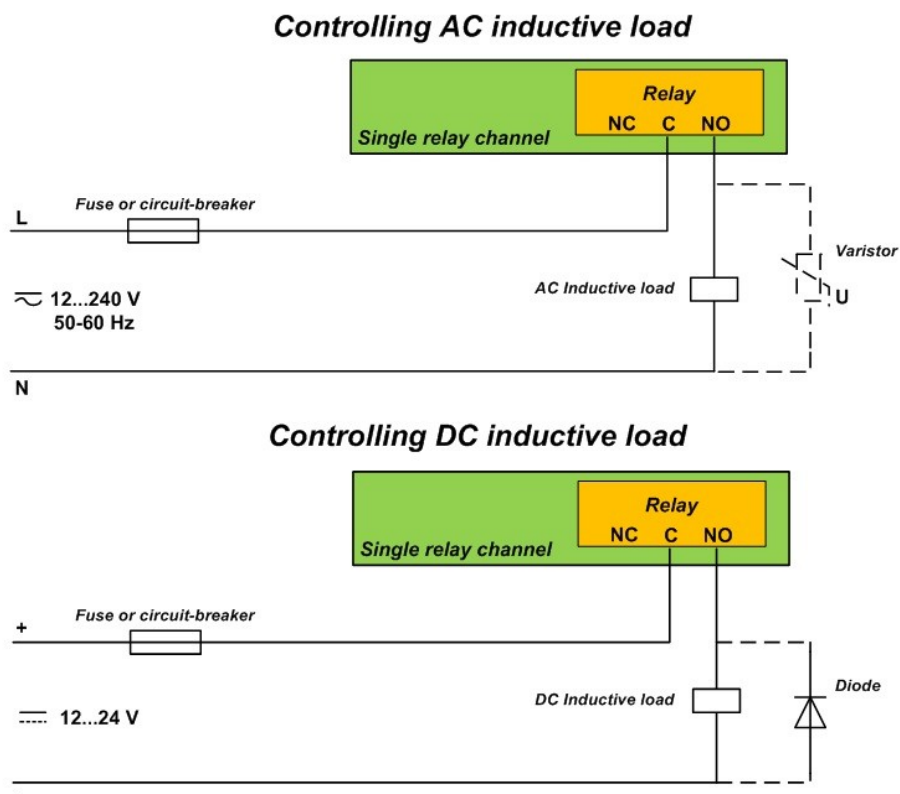


Figure 7. Controlling inductive load

4. Digital Inputs

Table 3. Digital inputs electrical characteristics

Type			Peripheral board
Digital inputs count			8
Nominal value of inputs	Voltage Current	VDC mA	12 5.2
Max non destructive voltage		VDC	24.0
Input switching limit values	From 0 to 1 Voltage Current From 1 to 0 Voltage Current	VDC mA VDC mA	>7.6 >3.2 <4.5 <1.8
Input impedance at state 1		kΩ	2.2
Sensor compability	2-wire 3-wire		Yes PNP No
Input type			Resistive with Schmitt trigger
Isolation	Between supply and inputs Between inputs		No No
Protection	Against reverse polarity		Yes

Table 4. Mapping to DAEnetIP1 JP2 digital I/O port

Digital input pin # (DAEnetIP1 JP2)	Digital Input # (peripheral board)
PortB.0	Din1
PortB.1	Din2
PortB.2	Din3
PortB.3	Din4
PortB.4	Din5
PortB.5	Din6
PortB.6	Din7
PortB.7	Din8

4.1. How to read the digital inputs

4.1.1. Web browser

Currently the digital inputs can not be read via web browser.

4.1.2. Example SNMP commands

Get Din1 Value

```
snmpget -v1 -c private 192.168.0.100 .1.3.6.1.4.1.32111.1.6.5.1
answer: INTEGER: High(1) //Din1 is High level
```

Get Din8 Value

```
snmpget -v1 -c private 192.168.0.100 .1.3.6.1.4.1.32111.1.6.5.1
answer: INTEGER: Low(0) //Din8 is Low level
```

4.1.3. DAEnetIP1 Manager

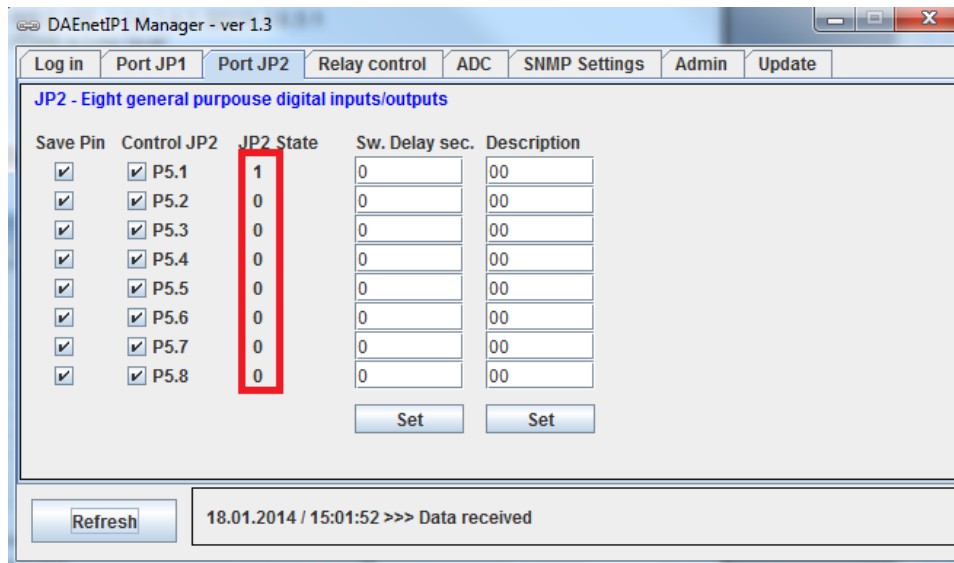
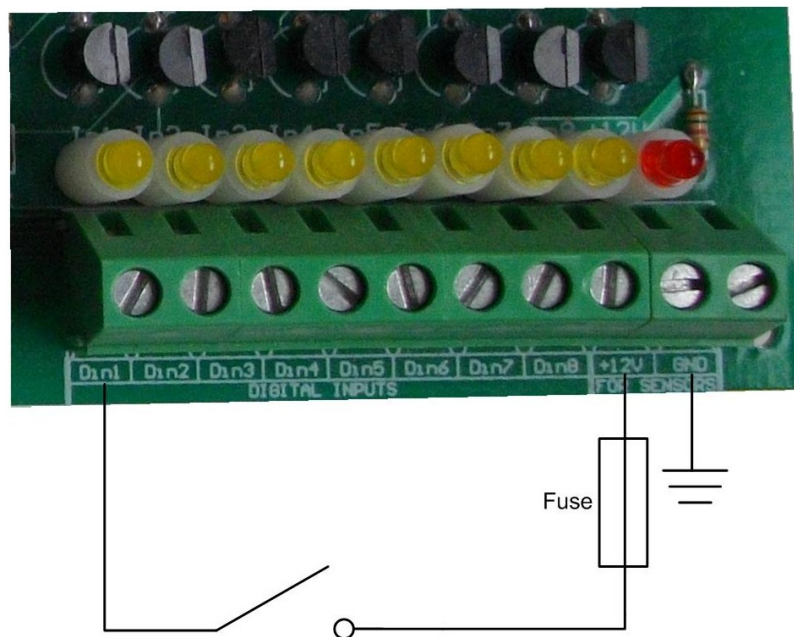


Figure 8. DAEnetIP1 Manager - JP2

4.2. How to use the digital inputs



Switch button connected to Din1
When the contact is closed Din1 level is logical 1
When the contact is opened Din1 level is logical 0

Figure 9. Using digital inputs

5. Analog Inputs

Table 5. Analog inputs electrical characteristics

Type			Peripheral board
Analog inputs count			8
Input range		VDC	0...10
Input impedance		MΩ	3
Max non destructive voltage		V	24
Value of LSB		mV	10
Input type			Common mode
Conversion	Resolution Conversion time Precision Repeat accuracy	V Sec V mA	10 bits at maximum voltage 0.1...255 determined by parameter determined by parameter
Isoation	Beteen analog channel and supply		No
Protection	Against reverse polarity		Yes

Table 6. Mapping to DAEnetIP1 JP4 analog input port

Analog input pin # (DAEnetIP1 JP4)	Analog Input # (peripheral board)
JP4.1	Ain1
JP4.2	Ain2
JP4.3	Ain3
JP4.4	Ain4
JP4.5	Ain5
JP4.6	Ain6
JP4.7	Ain7
JP4.8	Ain8

5.1. How to read the analog inputs

5.1.1. Web browser

ADC values		Threshold		Hyst		Others					Description
Curr	Refresh	Low	High	Low	High	Mode	SNMP trap	to JP1	to JP3	to JP2	max 14 ch.
786	1	100	200	5	5	Low	☐	☐	☐	☐	
278	1	100	200	5	5	Low	☐	☐	☐	☐	
969	1	100	200	5	5	Low	☐	☐	☐	☐	
0	1	100	200	5	5	Low	☐	☐	☐	☐	
217	1	100	200	5	5	Low	☐	☐	☐	☐	
388	1	100	200	5	5	Low	☐	☐	☐	☐	
942	1	100	200	5	5	Low	☐	☐	☐	☐	
121	1	100	200	5	5	Low	☐	☐	☐	☐	
SetRefresh		SetThr		SetHyst		SetMode					SetDescr

Figure 10. JP4 web page

5.1.2. Example SNMP commands

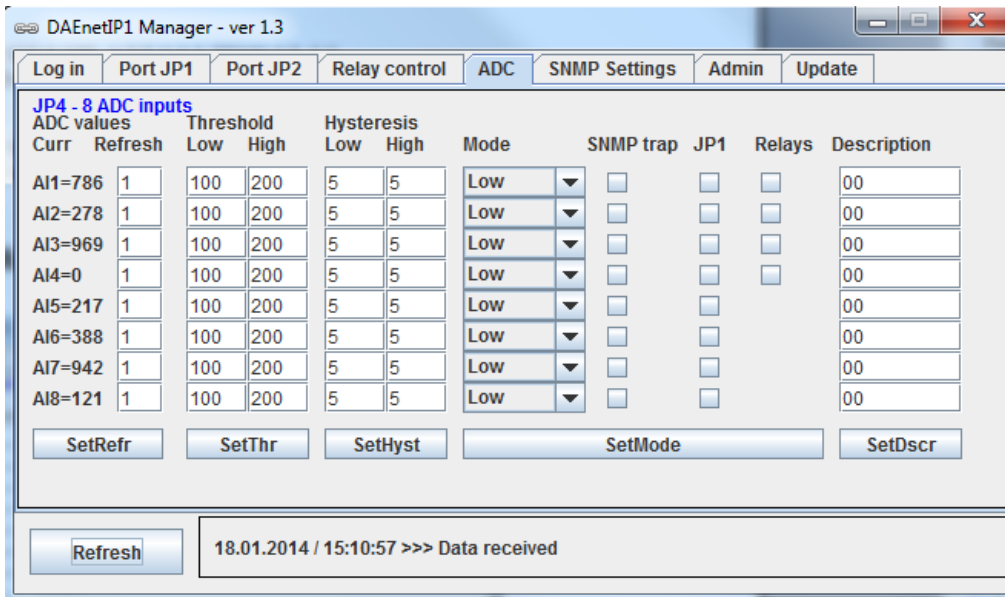
Get Ain1 Level

snmpget -v1 -c private 192.168.0.100 .1.3.6.1.4.1.32111.1.5.1.1
answer: INTEGER: 786 //Ain is 786 (from 1023 max)

Get Ain8 Level

snmpget -v1 -c private 192.168.0.100 .1.3.6.1.4.1.32111.1.5.1.8
answer: INTEGER: 123 //Ain is 123 (from 1023 max)

5.1.3. DAEnetIP1 Manager



DAEnetIP1 Manager - ver 1.3

Log in Port JP1 Port JP2 Relay control ADC **SNMP Settings** Admin Update

JP4 - 8 ADC inputs

ADC values		Threshold		Hysteresis		Mode	SNMP trap	JP1	Relays	Description
Curr	Refresh	Low	High	Low	High					
AI1=786	1	100	200	5	5	Low	☐	☐	☐	00
AI2=278	1	100	200	5	5	Low	☐	☐	☐	00
AI3=969	1	100	200	5	5	Low	☐	☐	☐	00
AI4=0	1	100	200	5	5	Low	☐	☐	☐	00
AI5=217	1	100	200	5	5	Low	☐	☐	☐	00
AI6=388	1	100	200	5	5	Low	☐	☐	☐	00
AI7=942	1	100	200	5	5	Low	☐	☐	☐	00
AI8=121	1	100	200	5	5	Low	☐	☐	☐	00

SetRefr SetThr SetHyst SetMode SetDscr

Refresh 18.01.2014 / 15:10:57 >>> Data received

Figure 11. DAEnetIP1 Manager - JP4

6. Power supply

- Power supply: DC 12 V / 1000 mA (stabilized and filtered);
- Polarity: Center positive, the inner pin of the power supply adaptor jack must be +12VDC;
- DAEnetIP1 does not have reverse polarity and overvoltage protection!

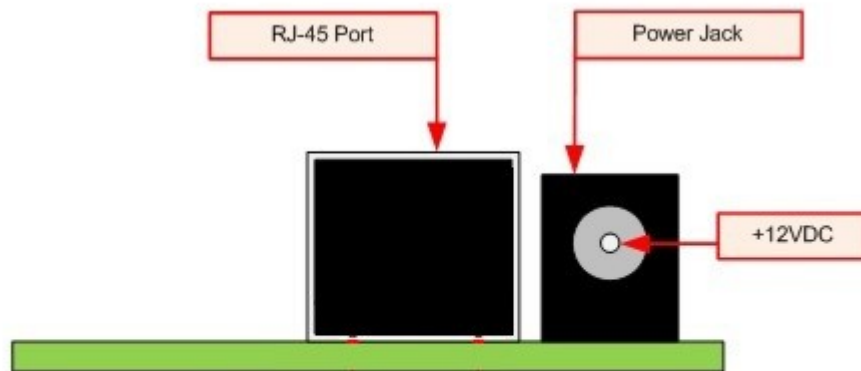


Figure 12. DAEnetIP1 power supply

7. Installation instructions

7.1. Connect the DAEnetIP1 module to computer for first time

1. Connect your DAEnetIP1 controller with UTP cable.
2. Connect the PC with the other end of this cable
3. Check out carefully that there is not danger of short cuts or metal surface around the controller
4. If there are additional wires from the DAEnetIP1 controller connect them (to the relay board or any other device) first
5. Check out the power supply you will use for DAEnetIP1 if it is correct according this document
6. Plug in the DC jack from the power adaptor to the device DC plug
7. TURN ON the power supply source
8. The power led (red one) must be on
9. The DAEnetIP1 needs about 10 seconds to boot, so please wait.
10. Adjust your PC IP to be 192.168.0.1
11. Access the device via Web browser - type its IP (192.168.0.100) in the url address line and use **admin / admin** for username / password

7.2. Connect DAEnetIP1 module to router

1. We assume you have PC IP - 192.168.1.2, Router IP - 192.168.1.1 and DAEnetIP1 factory IP - 192.168.0.100
2. Connect your DAEnetIP1 controller (or kit) with UTP cable.
3. Connect the PC with the other end of this cable.
4. Plug the DC jack from the power adaptor to the device DC plug.
5. TURN ON the power supply source.
6. The power led (red one) must be on
7. The DAEnetIP1 needs about 10 seconds to boot, so please wait.
8. Adjust your PC IP to be 192.168.0.1
9. Access the device via Web browser - type its IP (192.168.0.100) in the address bar and use **admin / admin** for username / password.
10. Change the DAEnetIP1 IP to be 192.168.1.3 (to mach your network).
11. Change back the old IP of your PC - 192.168.1.2
12. Turn off the DAEnetIP1 controller
13. Unplug the UTP cable from PC and connect it to router.
14. Power on the DAEnetIP1 controller
15. Type in browser 192.168.1.3 (the new IP) and access the controller.

8. Loading the default settings

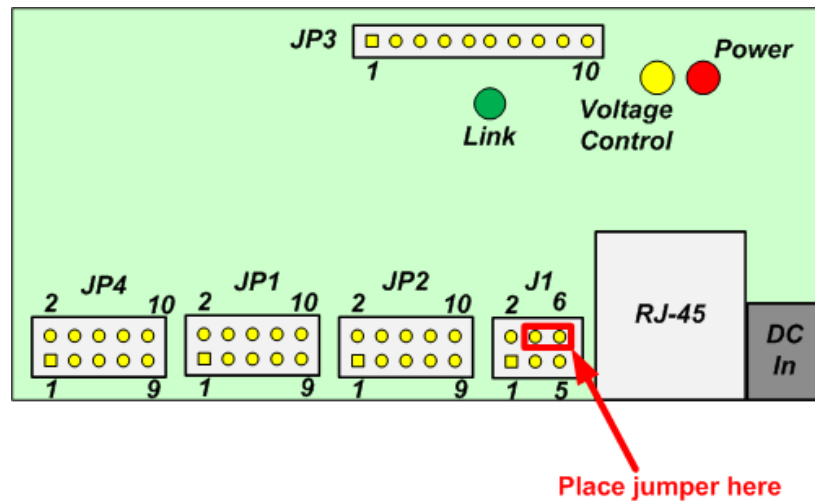


Figure 13. DAEnetIP1 jumper for default settings

1. power off the device
2. place jumper on J1 pin 4 and 6 (shown on figure...)
3. power on the device and wait around 40 seconds
4. power off the device
5. remove the jumper
6. power on the device

Because the system DAEnetIP1 J1 port is hidden, to load the default settings, firstly it must be removed from the peripheral board.

9. PCB dimensions

