Procontrol®

Network Controllable Power Socket Strip

0802-03_R9C revision

May 2012.

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IPStecker

Welcome

Thank you for choosing a Procontrol product.

Procontrol Electronics Ltd has grown to an important national company of developing and manufacturing software, hardware, electronic devices, access control, time-attendance systems, queue control, client caller and access protection systems since 1981.

Thousands of satisfied customers have experienced the security ensured by our long time period planning, reliable work and the world trademarks standing behind us. Our qualified staff does its best to satisfy your requirements in the electrical development.

Safety Precautions

Please read this guide before installing and using the device. Please use the device properly and as described in the following manual.

The guarantee is insured only if the device is used with the implements approved or specified by the manufacturer, and it is cleaned and maintained as described in this guide.

The authors are NOT liable for any claim, damages or other liability out of:

- using not the proper way
- incorrect installation
- connecting to inappropriate electronic network
- incorrect maintenance
- not approved modifications, interventions
- using non-original elements
- using with implements not approved or specified by the manufacturer

Only the technical service authorized by the manufacturer is allowed to do interventions in the device.

Maximum number of connectable devices using switching power supply is 2/socket!

Do not try to modify or dismount any part of the device

Do not store and operate the device out of the given ranges

Only use the device the proper way as described in guide.

Do not store the device close to a heat source or direct flame, because the device may explode

Never allow water or any other foreign matter to get into the unit. The unit contains sensitive electronic parts, so water and foreign matter not only can cause malfunction, they also create the risk of overheating due to short circuiting and insulation failure, fire and smoke, combustion, and electric shock. Should water or foreign matter ever get into the unit, immediately turn off the unit and contact a qualified service person.

Only use the product for it's intended purpose!

Security

Keep the device in operation only from electric sources defined in this user manual. Do not open the device, there are no user serviceable parts inside!

Attention! Connect the product exclusively to a grounded power outlet with relay contact protection network.

To avoid fire and risk of electronic shock:

Beware that your children do not throw or push objects through the slots of the device.

Do not mount accessories or attachments on the device that are not designed for this device. If you do not use the device for longer time or in case of lightning, you shall unplug the power cord.

Risks at Installation

Do not store anything on the power cord. Do not place the device, where the power cord can be damaged. Do not use the device under wet circumstances or in humid premises.

Cleaning

Switch off the device before cleaning. Use slightly wet mop. Excessive humidity may cause electric shock.

General rights and responsibility

Manufacturing rights of this device are reserved by Procontrol Electronics Ltd. Modifying or copying of this device or parts is prohibited!

Procontrol Ltd. reserves the right to modify this documentation without prior notice

Procontrol Ltd. is not liable for using of this device and the consequences of the application.

Introduction

The **IP Stecker** is an intelligent socket strip with IP address and individually, remotely controllable power outlets for switching up to four devices on and off through the Internet and Ethernet using a notebook, pocket PC.

Types:

- IPStecker 3
- IPStecker 4

IPStecker 4

Plans for Product Enhancement

• We currently provide the two models above - series R9C, both provided with Ethernet and USB port. The USB (12C) connector is prepared for future enhancements.

- As advanced option you will be able to connect external thermometer sensors (TS-05 or THS-05) through the USB (I2C) port, for applications e.g. emergency stop at a certain temperature, i.e. the user sets a threshold value, when exceeded, the device stops operating. This „Smart Metering" will be available, when the manufacturing of next series has been launched, which is at present in the process of development.
- A built in current and voltage meter function is planned, this „Smart Metering" will be available similarly, when the manufacturing of next series has been launched, which is at present in the process of development.

In case of any requested modification and enhancement please do not hesitate to contact us, any individual request is highly appreciated. Please contact our colleagues for details and prices!

Properties, types

Type	IPStecker 3	IPStecker 4
Picture		
Revision	0802-03-R9C	0802-03-R9C
Part number	141108	141106
Number of remotable switched sockets	3 sockets	4 sockets
Ethernet interface	10/100BaseT	10/100BaseT
Remote abilities	o Web /internet browser o Telnet o Command prompt remote control, Perl script, PHP script o PCSW protokoll	o Web /internet browser o Telnet o Command prompt remote control, Perl script, PHP script o PCSW protokoll
Compatibility	Can be used in all operation system, with all browsers: Microsoft Internet Explorer, Opera, Mozilla Firefox, Netscape, etc. Windows 98SE / 2000 / XP / XP SP1-SP2, Server 2003 / Vista / Linux / Me / Mac OS etc.	Can be used in all operation system, with all browsers: Microsoft Internet Explorer, Opera, Mozilla Firefox, Netscape, Windows 98SE / 2000 / XP / XP SP1-SP2, Server 2003 / Vista / Linux / Me / Mac OS
Language	english, hungarian	english, hungarian
Mounting	19 "rack mountable with included metal fixing brackets	19 "rack mountable with included metal fixing brackets
Connectors	RJ45, USB B	RJ45, USB B
Socket standard	F (Hungary)	F (Hungary)
Power supply	AC 230V, 50Hz	AC 230V, 50Hz
Power consumption	max: 3 VA	max: 3 VA
Capacity	max: 230V, Σ16A total, max: 230V 8A / socket at continuous load. Maximum number of devices using switching power supply is 2/socket.	max: 230V, Σ16A total, max: 230V 8A / socket at continuous load. Maximum number of devices using switching power supply is 2/socket.
Needed cable type	CAT5, CAT6	CAT5, CAT6
Support / feedback on hardware	- double-pole main switch - 1 hidden reset button - 3+2 pcs status LED - Ethernet status leds for , a LINK signal and 10/100Mbit mode - Built-in clock, and memory protection batteries	- 1 hidden reset button - 3+2 pcs status LED - Ethernet status leds for , a LINK signal and 10/100Mbit mode - Built-in clock, and memory protection batteries
Casing	Indoor durable case, compact, distinguished	Indoor durable case, compact, distinguished
Dimensions	Without fixing brackets: 430x60x45mm With fixing brackets: 480x60x45mm	Without fixing brackets: 430x60x45mm With fixing brackets: 480x60x45mm
Weight	Net 1000g, gross 1130g	Net 1000g, gross 1140g
Operating temperature	-25 - +50 °C	-25 - +50 °C
Storage temperature	-40 - +60 °C	-40 - +60 °C

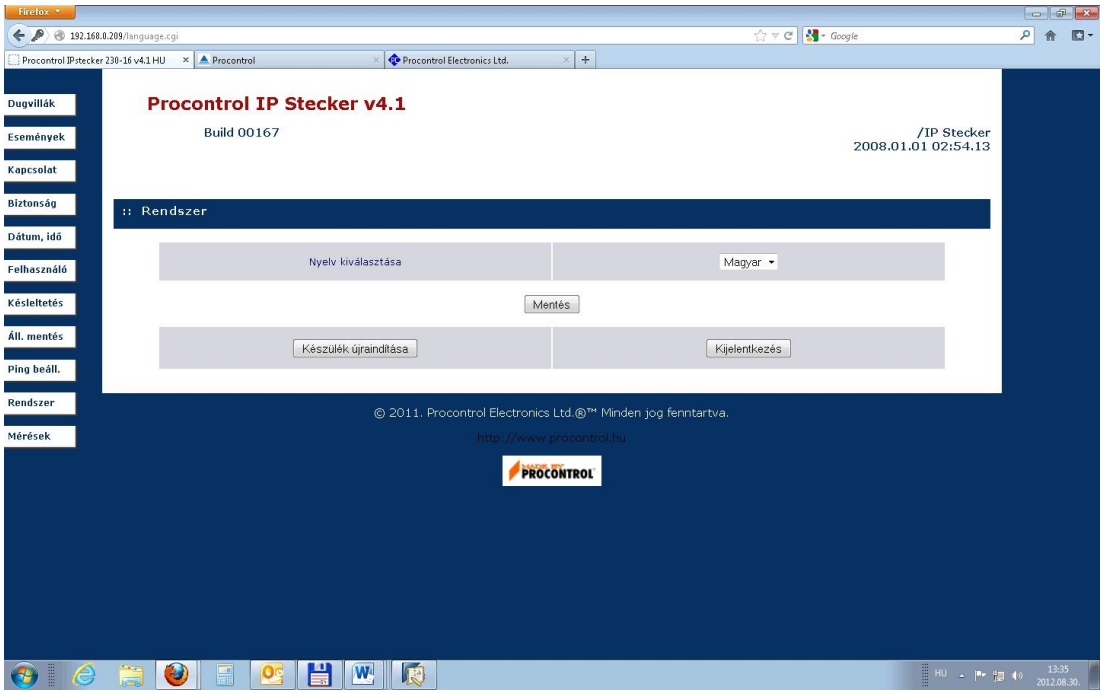
Operating relative humidity	max. 80%	max. 80%
Storage relative humidity	max. 90%	max. 90%
Standards	Ethernet IEE802	Ethernet IEE802
USB (I2C) - prepared for later developments	x	x
Smart Metering: current and voltage measurement functions	under development	under development

*** A Special communication protocol developed by Procontrol, which allows the implementation and communication of IPStecker with other Procontrol manufactured products and systems.**

Attention! Maximum number of devices using switching power supply is 2/socket.

For English users

If the web interface of the IPStecker is in Hungarian, you can change it to English in Rendszer section, by changing the dropbox value Magyar to English, and clicking Mentés button.



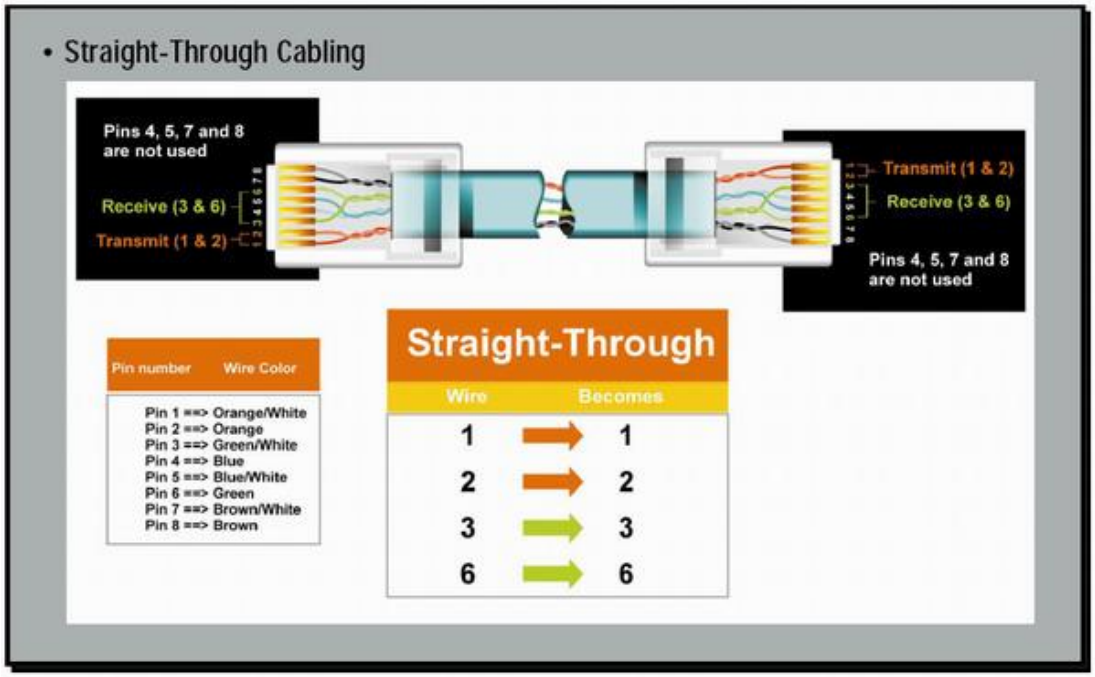
What kind of Ethernet network we have?

(Estimation of Ethernet network topology)

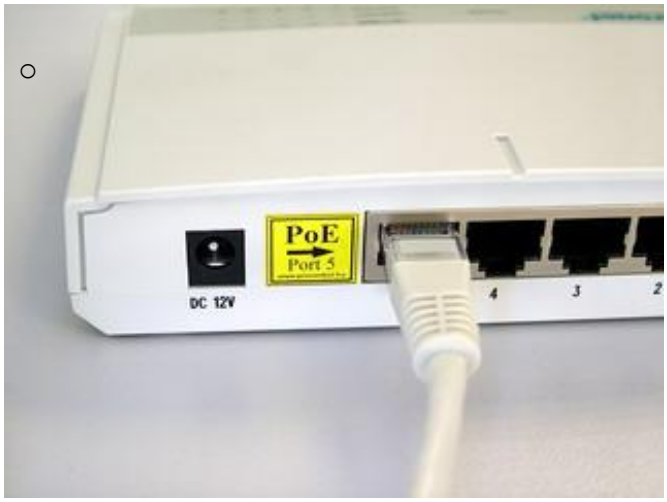
Connect the device to a free end point (or directly to your PC) of an established Ethernet network as following.

Ethernet on PC network is not everywhere accessible, therefore we suggest two solutions for testing your device:

1. In Case of Established Computer Network

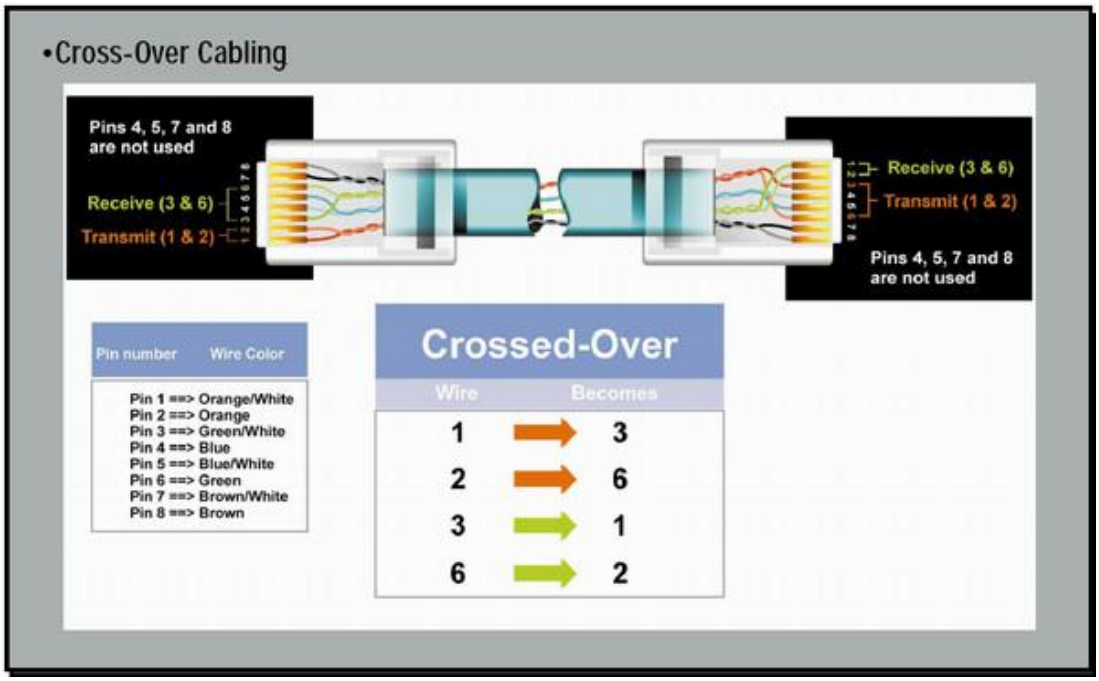


Connect a free end point of the PC network with a straight patch cable (Straight-Trough) to the device. We recommend this solution, if possible. Test the device with a patch cable (Straight-Trough, attached to the customer package) on an Ethernet socket of a network-connected PC. Connect the Ethernet cable to the SWITCH or HUB of your PC network (Ethernet).

- 
PoE
Port 5
DC 12V
4
3
2

2. Directly Wired Connection between Terminal and PC

If a network SWITCH is not available, but you want to connect it directly to the Ethernet socket of your PC, you need a special Cross-Over wire. Connect the device to your PC's built in connector through the Cross-Over patch cable.



Ethernet data connection establishment

Product setup

Connect the socket strip to a 230V mains socket outlet. Use a grounded outlet only. Connect the Ethernet network cable, then turn on the power switch of the device (I O labeled rocker switch). After about 10 seconds the device is available on the computer network with default connection settings.

IP address: 192.168.0.250
Subnet mask: 255.255.255.0
Web port: 80

You can now connect the remotely switched 230V powered devices as you wish.

The product is supplied with the relays switched on, so after switching on the first time, all four sockets will be powered with 1-2-3-4 seconds delay.

IPStecker remote control function

The remote control modes of the IPStecker were developed according to different customer needs and requests. Controlling the power supply of the connected devices is available through the following channels:

- **Web browser** port 80 / internet browser (IPStecker Online)

  Most of the user's choice, the simplest plausible method for remote control via an Internet Browser with graphic interface. Most parameters of the unit are accessible through this default interface. The following browsers were tested:

  a. Internet Explorer 5,6,7,8

  b. Mozilla

  c. Opera

- **Telnet** port 23 / command line

  a. Microsoft Telnet

  b. Debian linux – telnet

- **PCSW protocol**, port 1001

  Secret internal protocol of Procontrol Ltd., used to edit system parameters and for firmware upgrades. Only for system administration purposes.

- Through web port 80 instead of web browser, even scheduled, or command line remote control, Perl script, PHP script. (sample script is available on the product’s website)

  Power supply control of the connected devices is even possible scheduled through web port 80 (instead of web browser), or controlled by program code. Tested under the following environment:

  a. Microsoft Windows 2000, Windows XP, Windows Vista, Windows 2003 Server, Windows 2008 Server, Windows 7

Testing the IPStecker Ethernet connection

- Ping test: enter following command into the command line: PING 192.168.0.250
- If you receive a reply, you can try with your browser according to description below. If you do not receive any reply, check as follows:

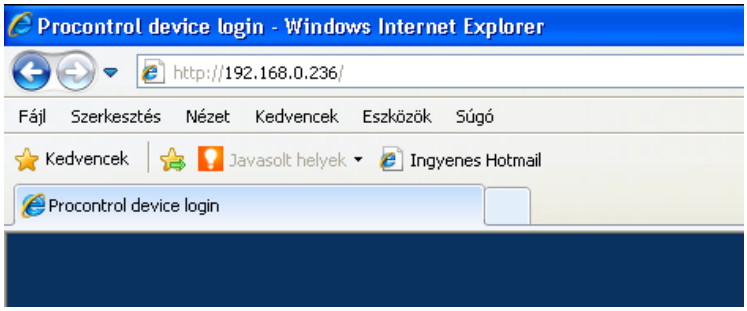
- **FIREWALL DIFFICULTIES**: A well operating firewall may prevent the program from running correctly.

1. Web browser / IP Stecker Online

Power of the IPStecker's sockets can be individually switched on and off through a web browser. Access to the control page can be password protected.

FIREWALL DIFFICULTIES: A well operating firewall may prevent the program from running correctly.

Enter the default IP address into the browser: **192.168.0.250**



If the user interface is not displayed, please check:

- Whether you established all connections properly?
- Whether at least one of the IPStecker's status LEDs is lit?
- Whether your PC's IP address is in the same network: 192.168.0.xxx?

After displaying the user interface you can enter a new IP address into the IP field of connection preferences.

To log in, enter the correct password. (default is admin)

To set interface language see section 10 below.

Sections of the web interface:

1. Plugs – Remote access of powers sockets.

The first section of the IPStecker's user interface displays the **current status of power socket strip**. A powered plug is marked green (ON), an unpowered plug is marked red (OFF).

With a single click on the buttons in the On/Off column, power can be switched ON or OFF in each plug (R1, R2, R3).

Restarting of each plug is also possible, they remain unpowered till the time delay set in section **Delays**. After the time period expires, the plug automatically switches on, and the web page is being refreshed. Each plug can be renamed by the user for easier identification in the **User** section of the web interface. The names given there are displayed in the User name column.

ATTENTION! ALWAYS USE THE SAVE BUTTON AFTER SETTINGS MODIFICATION AND DATA ENTRY!

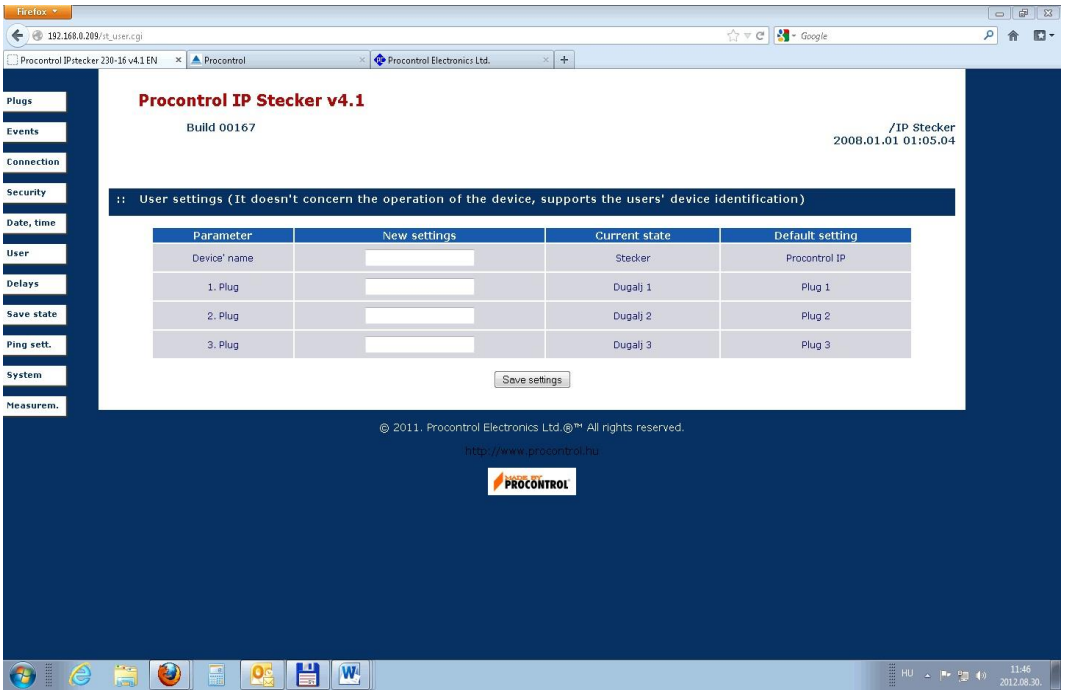
2. Events – User operations log

The device logs each user operation and stores the last 128 event

3. User – User settings

(Operation of the IPStecker is not affected by the settings in this section)

Each plug can be renamed (according to the connected devices e.g.) by the user for easier identification in this section. The names given here are displayed in the User name column of the first section. A maximum 10 character long name can be given to each plug with contents of the English alphabet.

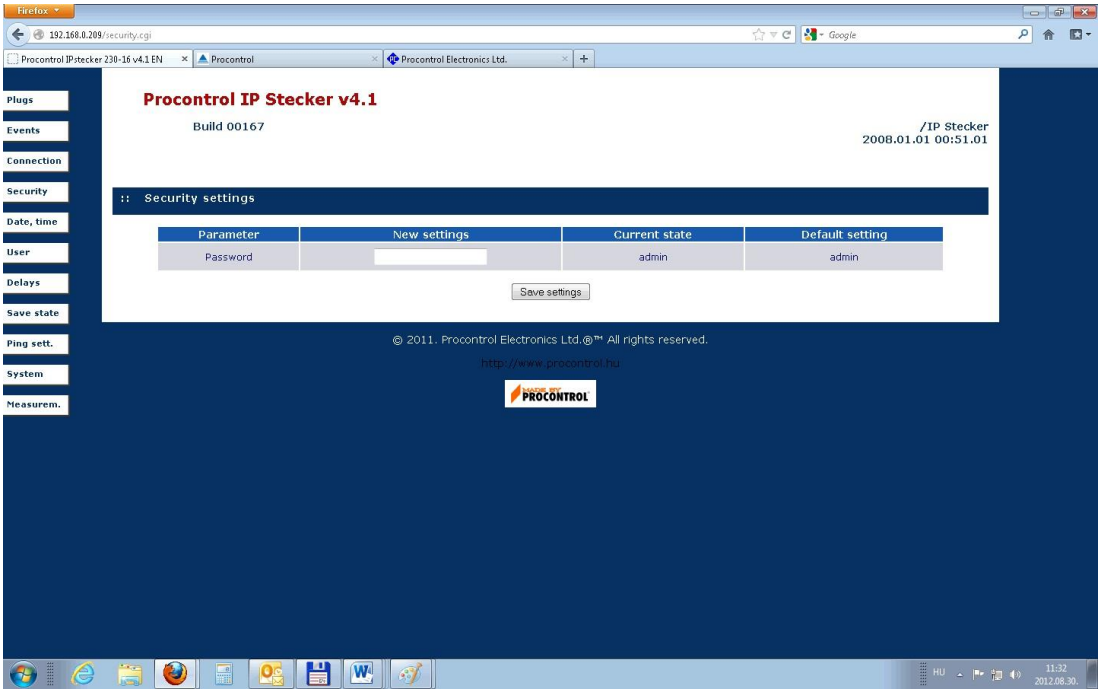


4. Connection – Connection settings

Parameters of the connection with the IPStecker can be changed here: IP address, default gateway, subnet mask, TCP/IP port.

5. Security – Security settings

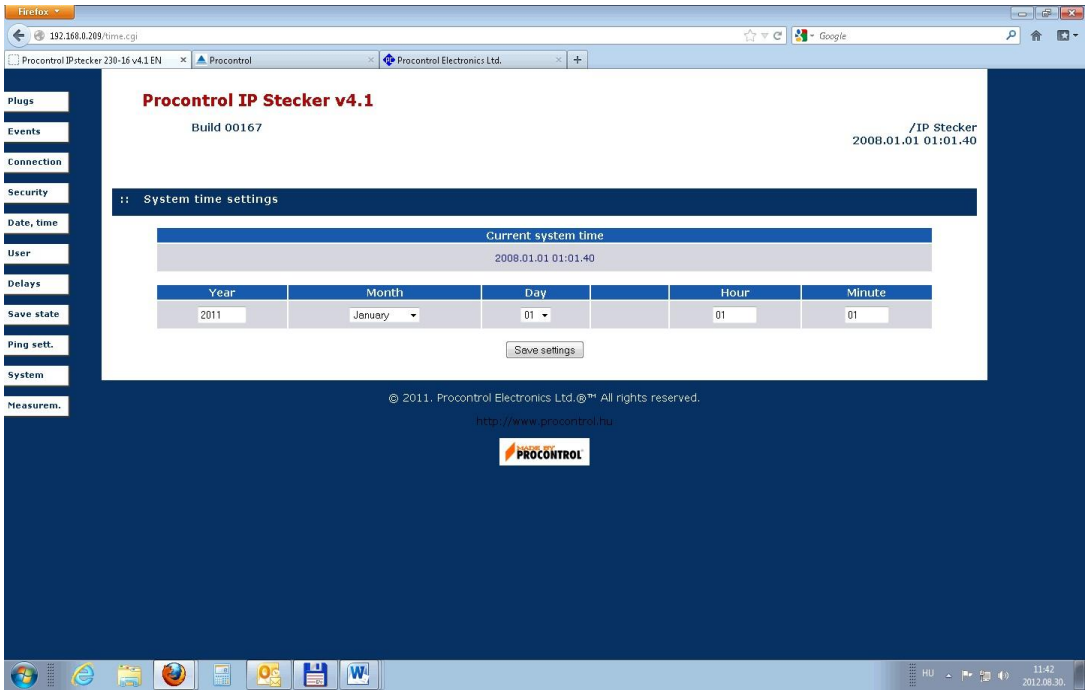
A password can be set here to access the IPStecker's web interface. The password can be changed any time inside the control page. If you set and save a password here, the device asks for it the next time you want to log in. The default password is "admin". (Recommended to change it after the first login)



The Current state column gives information if a password is required to enter the web interface. If you do not wish to use a password, just leave the New settings field empty and click the Save setting button. The next login can be done without using a password. To restore password controlled access, it is only needed to type in a new password and click the Save setting button.

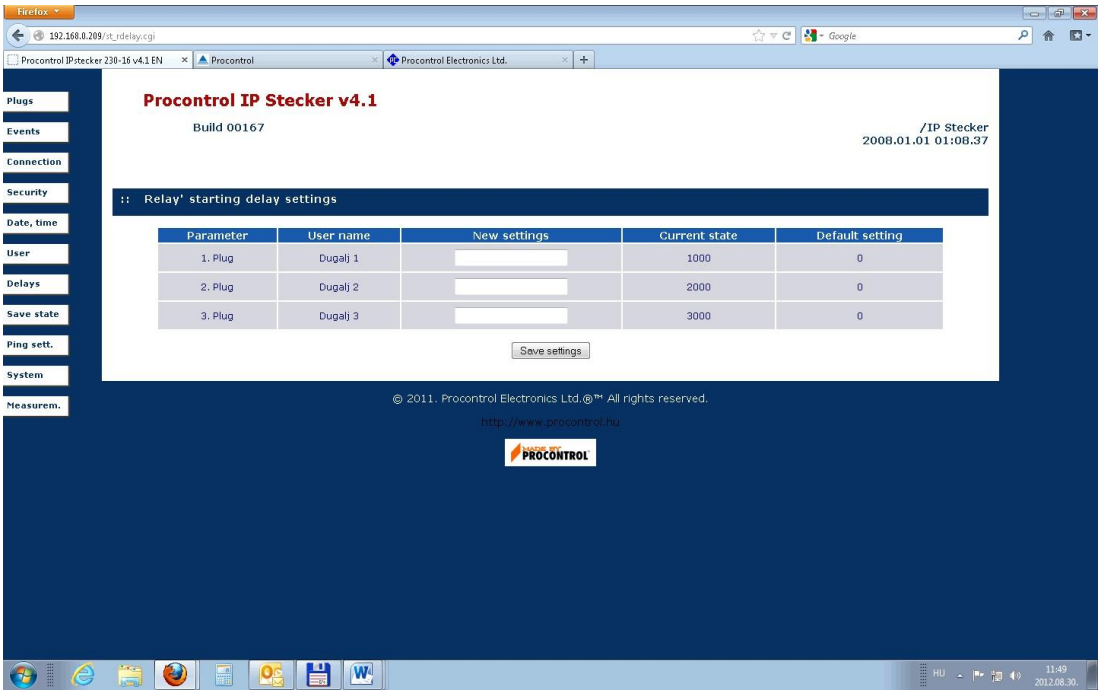
6. Date time – Date and time settings

The actual date and time can be set in this section. Certain types of IPStecker can automatically synchronize date and time data from an NTP server.



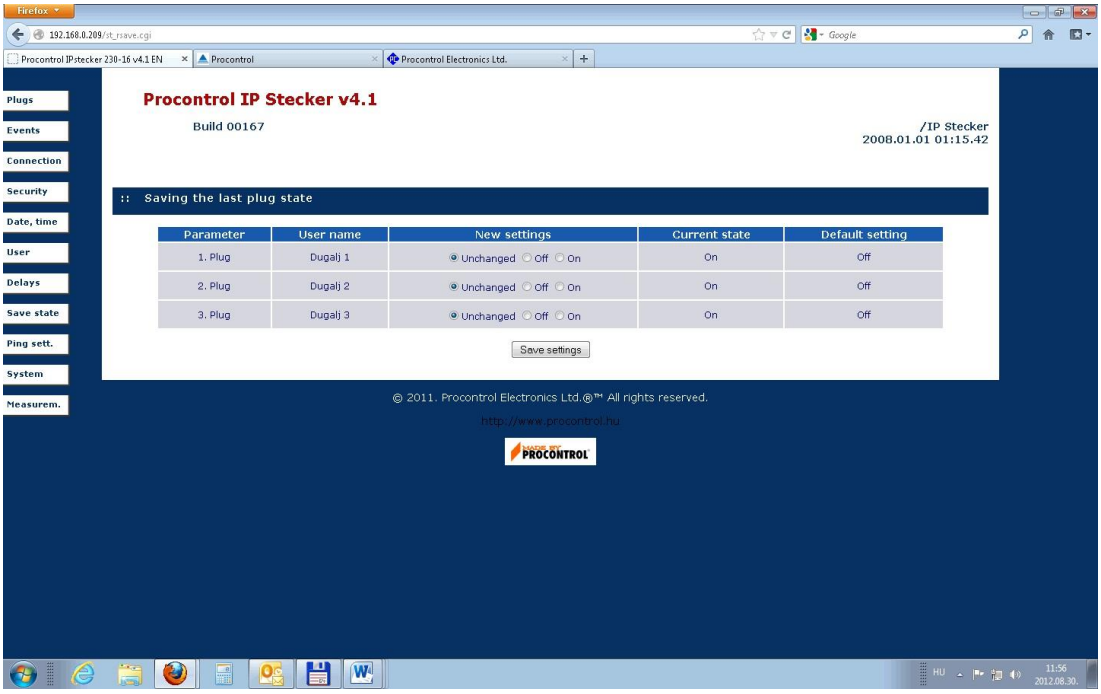
7. Delays – Plug power on delay settings

A power on time delay can be set to each plug, measured in milliseconds. Using this option a heavy startup load is avoidable in case of devices with high power consumption starting simultaneously.



8. Save state – Saving the states of plugs

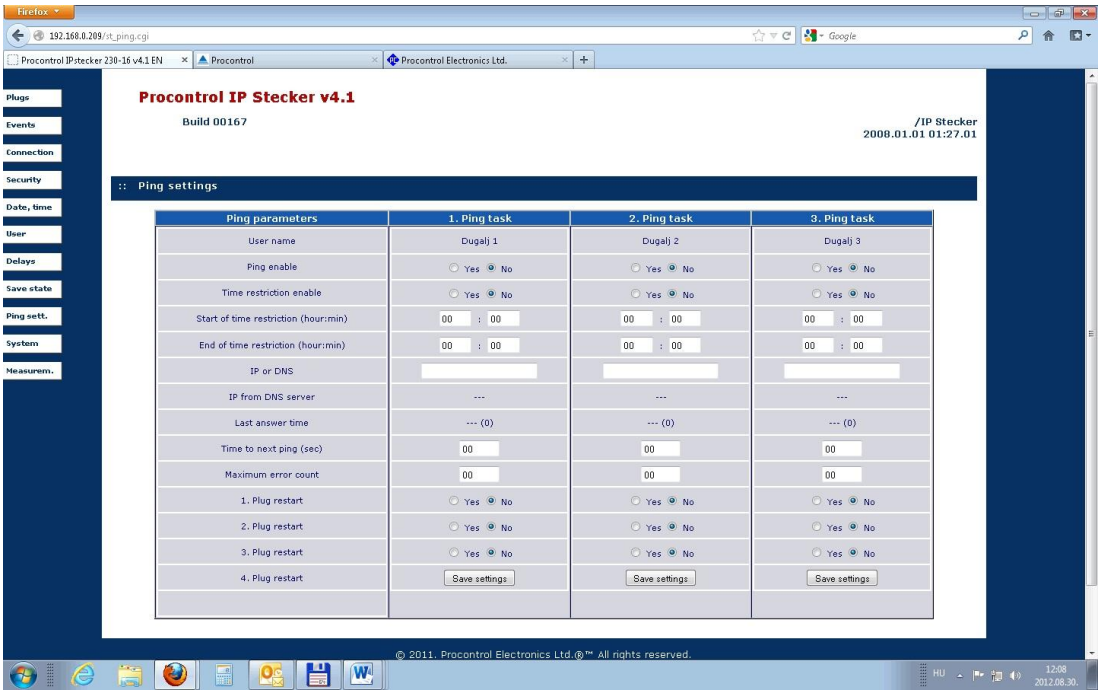
In this section the states of each plug can be set after a device restart or switching off. In the New settings column “Unchanged” leaves the plug in the current state, the “On” or “Off” changes the mode currently set. Currently stored state is displayed in the Current state column. During a power failure, or a blackout the IP Stecker’s non-volatile memory "remembers" the latest switching states and settings and re-establishes them when the power supply is restored. So the IP Stecker operates unchanged until you give a new command. This function can be turned off.



9. Ping settings – Automatic plug restart (automatic restart of crashed systems e.g., RESET)

With this function any number of operation checking signal can be sent out at any time to devices connected to the network. A device crash or a network failure is easily detectable with this method, and the malfunctioning device connected to the specific plug can be restarted.

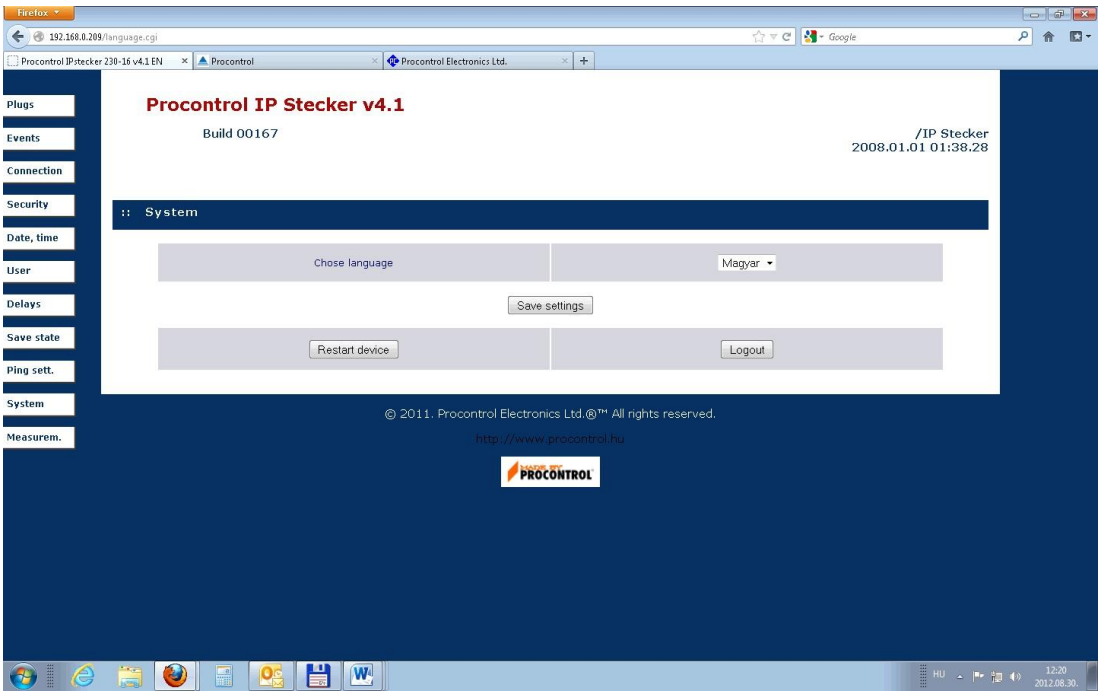
The pinger pings a given IP address at specified time intervals, and if there is no answer after 5 times, the appropriate plug will be switched off and after 5 seconds on again.



10. System – Language settings and device restart/logout

Language of the web interface can be set to Hungarian or English.

Clicking the Restart device button, the IPStecker restarts, and by clicking the Logout button we can leave the web interface.



ATTENTION! ALWAYS USE THE SAVE BUTTON AFTER SETTINGS MODIFICATION AND DATA ENTRY!!

2. Telnet

Some functions of the IPStecker is available via Telnet. If a password was set to access the device, it will be also required to establish a Telnet connection. To access the IPStecker this way, create a command prompt: type in Start menu / Run window "cmd"; in case of Windows 98: command; and enter OK. Into the appearing textbox type in "telnet (IP address of the device)"

E.g. **telnet 192.168.0.250**

After the welcome screen of the IPStecker appears, you can type in any command. For the list of available commands type "," or "help".

Accessing the plugs, modifying connection settings and changing password are also available via Telnet. The password set this way is the same to reach the web interface.

3. Command line remote control through user developed program (SDK)

Remote control of the IPstecker through command prompt is also possible by downloading a utility software (Perlscript), which is available free of charge from www.activeperl.com.

Perl script usage:

1. Install Perl interpreter to the computer. (interpreter / motor / engine)
2. Start the command line script: stecker.pl [*IP address*][*settings*]

The script can be accessed from a webpage or from a unique program.

E.g. `stecker.pl 192.168.2.25 +1 -2 +3` (this sample command switches on plug 1 and 3, and switches off plug 2.)

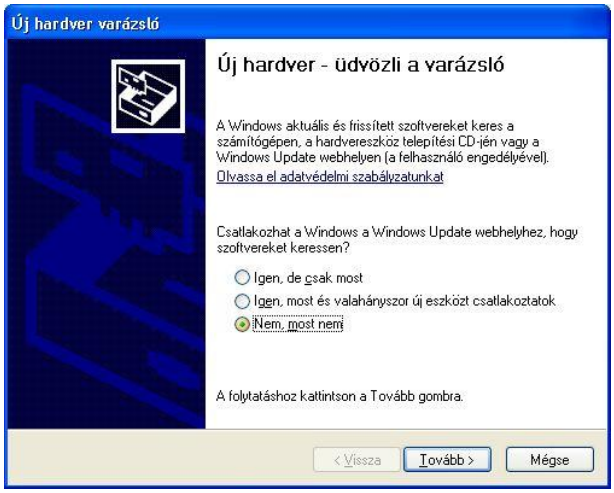
E.g. `stecker.pl +1 Pass=admin`

4. Command line control through USB connection

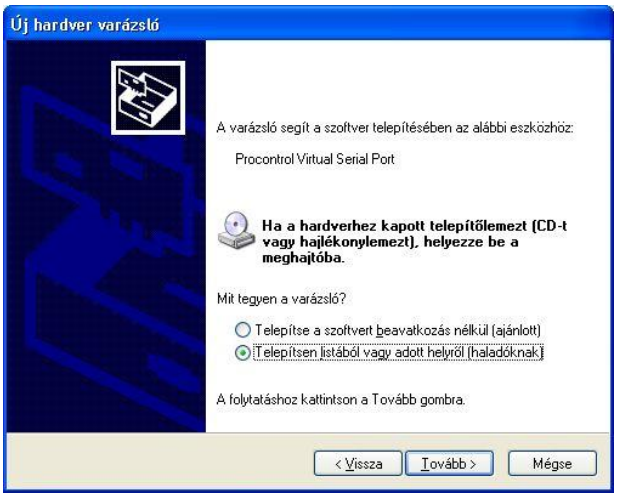
IPStecker is accessible not exclusively through Ethernet but it is connectible to your PC also through USB A-B wire and enables you to switch the sockets on a command line interface.

When you attach the device to your computer the first time, a dialogue box appear which guides you through the steps of driver setup. Once you click on „Not now" option you are enabled to give the path of the driver.

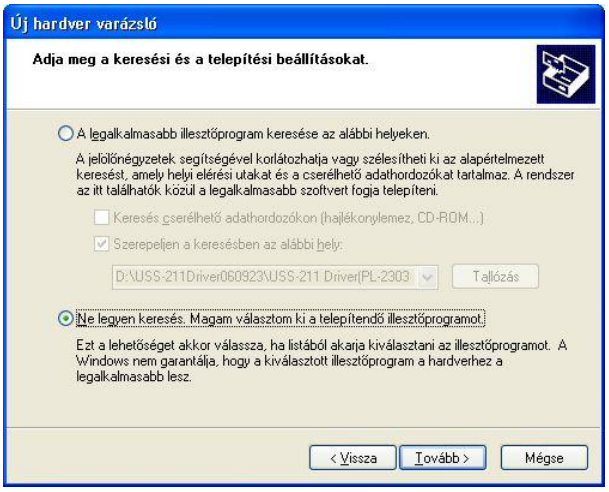
(The window below appears in the default language of Setup Wizard on your PC.)



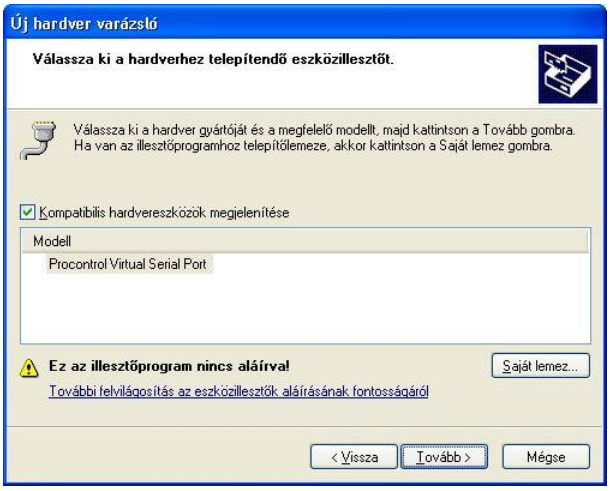
Select the option of alternative setup path (advanced) and click „Continue”.



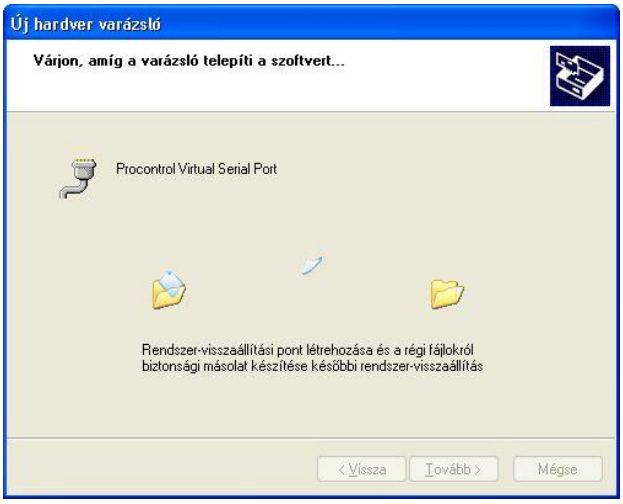
Select the option „No search. I select the setup driver”:



Int he next window click on „My disc” and browse „usbser.info” file:



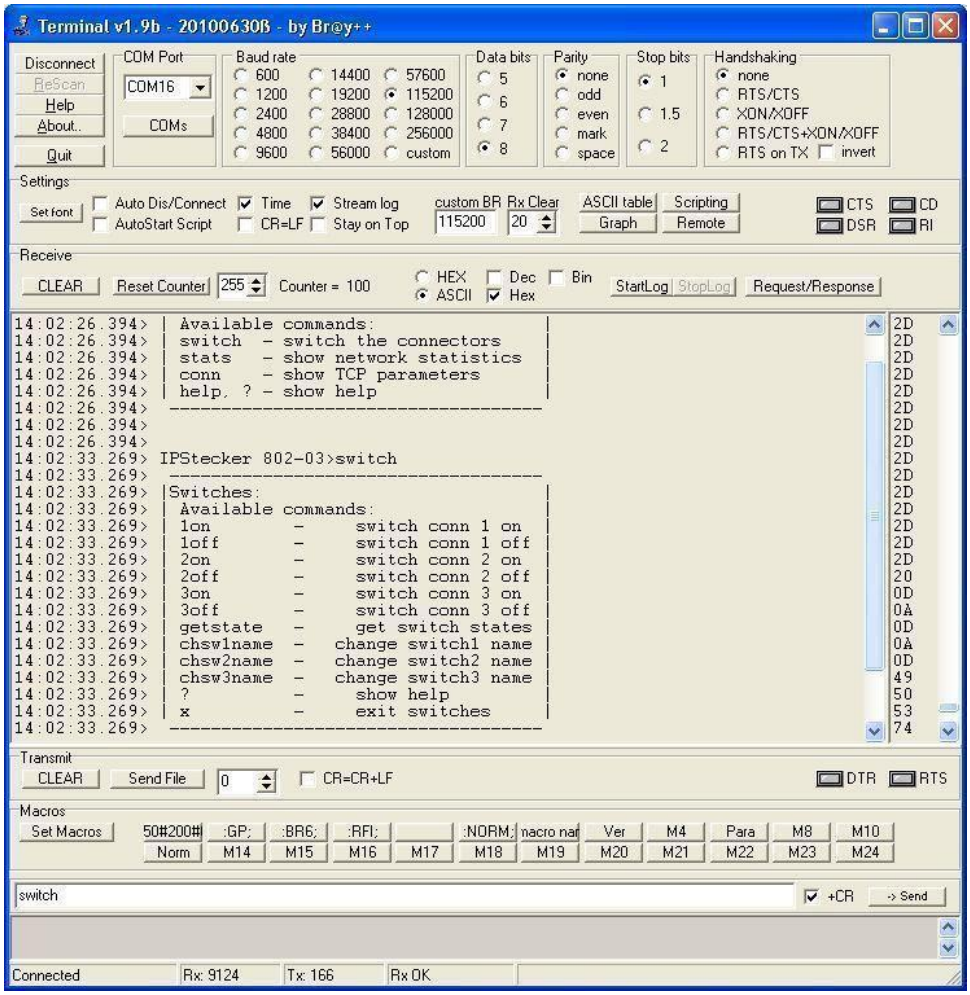
Click „Continue” and Windows executes the driver setup. The device is now available in your system as a serial port device.



Command line interface:

You can control the device by a simple line command user interface. Attach it with a USB wire, from your user kit, to your PC and start „Terminal” software, from your user kit.

- COM Port: select the COM Portot, which you connected with your device
- Baudrate: 115200
- Data bits: 8
- Parity: none
- Stop bits: 1
- Handshaking: none
- Tick „+CR” option beside „Send” button


Terminal v1.9b - 20100630ß - by Br@y++
Disconnect
ReScan
Help
About..
Quit
COM Port
COM16
COMs
Baud rate
600
1200
2400
4800
9600
14400
19200
28800
38400
56000
57600
115200
128000
256000
custom
Data bits
5
6
7
8
Parity
none
odd
even
mark
space
Stop bits
1
1.5
2
Handshaking
none
RTS/CTS
XON/XOFF
RTS/CTS+XON/XOFF
RTS on TX
invert
Settings
Set font
Auto Dis/Connect
AutoStart Script
Time
CR=LF
Stream log
Stay on Top
custom BR
115200
Rx Clear
20
ASCII table
Graph
Scripting
Remote
CTS
DSR
CD
RI
Receive
CLEAR
Reset Counter
255
Counter = 100
HEX
ASCII
Dec
Hex
Bin
StartLog
StopLog
Request/Response
14:02:26.394> | Available commands: |
14:02:26.394> | switch - switch the connectors |
14:02:26.394> | stats - show network statistics |
14:02:26.394> | conn - show TCP parameters |
14:02:26.394> | help, ? - show help |
14:02:26.394> ----------
14:02:33.269> IPStecker 802-03>switch
14:02:33.269> ----------
14:02:33.269> |Switches: |
14:02:33.269> | Available commands: |
14:02:33.269> | 1on - switch conn 1 on |
14:02:33.269> | 1off - switch conn 1 off |
14:02:33.269> | 2on - switch conn 2 on |
14:02:33.269> | 2off - switch conn 2 off |
14:02:33.269> | 3on - switch conn 3 on |
14:02:33.269> | 3off - switch conn 3 off |
14:02:33.269> | getstate - get switch states |
14:02:33.269> | chsw1name - change switch1 name |
14:02:33.269> | chsw2name - change switch2 name |
14:02:33.269> | chsw3name - change switch3 name |
14:02:33.269> | ? - show help |
14:02:33.269> | x - exit switches |
14:02:33.269> ----------
2D 2D 2D 2D 2D 2D 2D 2D 2D 2D 2D 2D 2D 2D 2D 20 0D 0A 0D 0A 0D 49 50 53 74
Transmit
CLEAR
Send File
0
CR=CR+LF
DTR
RTS
Macros
Set Macros
50#200#
:GP;
:BR6;
:RFI;
:NORM;
nacro nar
Ver
M4
Para
M8
M10
Norm
M14
M15
M16
M17
M18
M19
M20
M21
M22
M23
M24
switch
+CR
-> Send
Connected
Rx: 9124
Tx: 166
Rx OK

Contact to the manufacturer

If any remark, question or request occurs to you contact us as follows:

PROCONTROL ELECTRONICS LTD.

www.procontrol.hu

email: service@procontrol.hu

Hardware manufacturing/service:

6725 Szeged, Cserepes sor 9/b.

Hungary

Tel: +36-62-444-007

Fax: +36-62-444-181

Please turn to us with your requests concerning the program in written form possibly, as obvious and detailed as possible.