ePowerSwitch-4

Power Management

User's Guide

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ePowerSwitch-4

User's Guide

ePowerSwitch-4 is a power control unit with a built-in Web server, an Ethernet port and a serial RS 232 port. It is used for switching up to four power sockets on and off either remotely through a network (an Intranet or the Internet), or locally through a serial connection.

Contents

1. Safety guidelines: Read before use!

- Check that the used power cables, plugs and sockets are in good condition.
- Always plug the ePowerSwitch-4 into a properly grounded power outlet (two poles plus ground).
- The electrical mains sockets to which the power cables of the ePowerSwitch-4 are connected must be easily accessible and close to the ePowerSwitch.
- Connect the ePowerSwitch-4 to a three-wire 230 V AC (50–60 Hz) outlet.
- The total load must never exceed 10 amperes.
- Replace the fuse only with a 10 A/250 V T fuse.
- This equipment is intended for indoor use only. Do **not** install it in an area where excessive moisture or heat is present.
- This device contains potentially hazardous voltages. Do **not** attempt to disassemble it.
- ePowerSwitch-4 does not contain any user-serviceable parts. Repairs must be performed only by factory-trained service personnel.
- Disconnect the ePowerSwitch-4 from the AC power outlet before installing it or connecting it to other equipment.
- The ePowerSwitch-4 must be installed and used only by qualified personnel. The manufacturer accepts no responsibility for damage or injury – either direct or indirect – resulting from improper use of the ePowerSwitch-4.
- Do not open devices that are connected to the ePowerSwitch-4. Always disconnect the mains plug first.
- Connect only one consumer to each socket of the ePowerSwitch-4.

2. Package List

The following items are included:

- 1 extension lead, 19" rack mountable,
- 1 wall mounting kit (2 metal brackets, 4 cage nuts, washer and screws),
- 1 serial cable SUB-D 9 points male / female,
- CD including this user guide and the epsFinder program.

The figure shows how to fix the metal brackets:

3. Configuring the ePowerSwitch

Before you can use the ePowerSwitch on your network, you must configure its network settings. Ask your network administrator for the correct settings.

You can configure the ePowerSwitch by one of three different methods:

Method 1: Through a network using the epsFinder program

This is the simplest and fastest configuration method, but you need access to a PC running the Windows operating system. You should use this program at least for the first configuration, because it lets you configure your ePowerSwitch through your local network even if its network settings (IP address, subnet mask and port number) are not the same as those of your PC or your local network.

The epsFinder program is included on the supplied CD.

Method 2: Through a network using a Web browser

(Your Web browser must be Internet Explorer 6.0 or higher or Netscape 6.1 or higher.)

This method can be used only if the network settings of the ePowerSwitch (IP address, subnet mask, etc.) have already been configured either using the epsFinder program (method 1) or using a terminal program (method 3).

During the first configuration, you can also change the network settings of your PC to the default settings of the ePowerSwitch.

Default Network setting of the ePowerSwitch are:

IP address:	192.168.100.100
Subnet mask:	255.255.255.0
Gateway:	0.0.0.0
Port number:	80

If you decide to use this method, go to section 3.2, “Configuration using a Web browser”.

Method 3: Through an RS 232 serial connection using a terminal program

(For the pin assignment of the serial connector, see section 5, “Serial port pin assignment”).

If you are using a PC, use the supplied serial cable and a terminal program, such as HyperTerminal, which is a component of Windows.

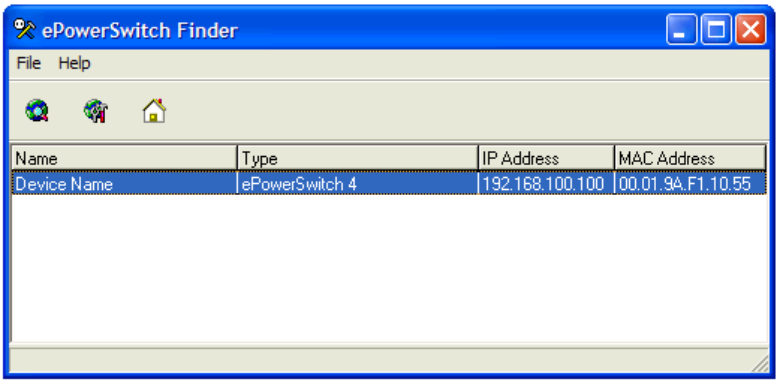
If you decide to use this method, go to section 3.3, “Configuration using a terminal connection”.

3.1. Configuration using the epsFinder program

Notes:

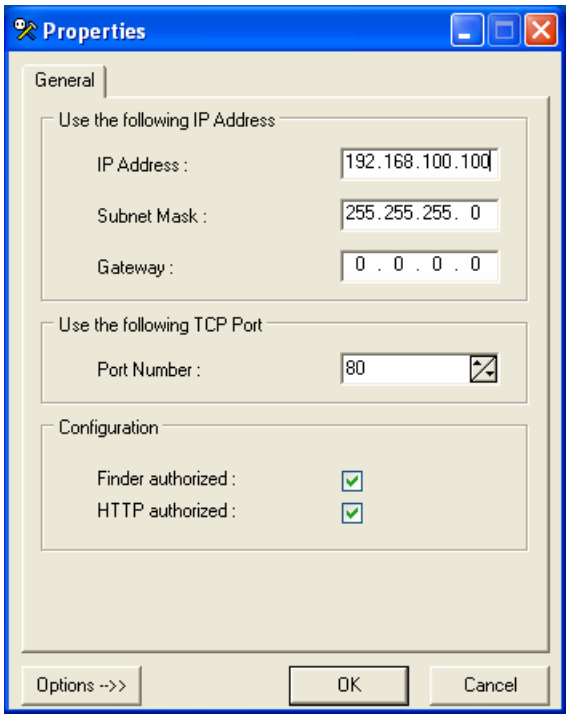
- The ePowerSwitch and the PC used to configure it must be connected to the same network segment. Because the protocol of the epsFinder program can not be routed, it can not be used to configure the ePowerSwitch through a WAN or the Internet.
- The epsFinder program does not work if the administrator has deactivated it in the ePowerSwitch configuration settings (for example for security reasons).

1. Start the program ***epsFinder.exe*** on the CD-ROM. The ePowerSwitch Finder window appears:



2. On the toolbar, click the ***first button on the left*** or select ***Scan*** from the ***File*** menu. The program scans the network segment to which your PC is connected and displays the name, type and IP and MAC addresses of the connected ePowerSwitch.

3. On the toolbar, click the ***second button from the left*** or select ***Configure*** from the ***File*** menu. In the Properties dialog box that appears, enter the required network settings. To set the remaining parameters, click the ***Options*** button at the bottom of the dialog box.



General tab
On this tab you can make the required network settings (IP address, subnet mask, gateway and port number) and authorise or deny the configuration of the ePowerSwitch either using the Finder program or through HTTP.

Labels tab
On this tab, you can assign a name to the device and its four controlled power outlets.

Note: Never use inverted commas (") in the name fields.

Administrator Account tab
On this tab, you can assign a name and a password to the administrator.

Note: Never use inverted commas (") in the name and password fields.

User Accounts tab
On this tab, you can assign user names and a passwords and specify the outlet(s) each user has the right to control.

Note: Never use inverted commas (") in the name and password fields.

Security tab
On this tab, enter the IP addresses that are allowed or denied access to the ePowerSwitch over the network. For details about this features, see section 4, “Configuring the security settings”.

Options tab
On this tab, define individually the default states of each power outlet after power-up and the delay for the restart function for each power outlet.

Miscellaneous tab
This tab displays the number of power-ups and the number of Off–On switching cycles for each power outlet.

3.2. Configuration using a Web browser

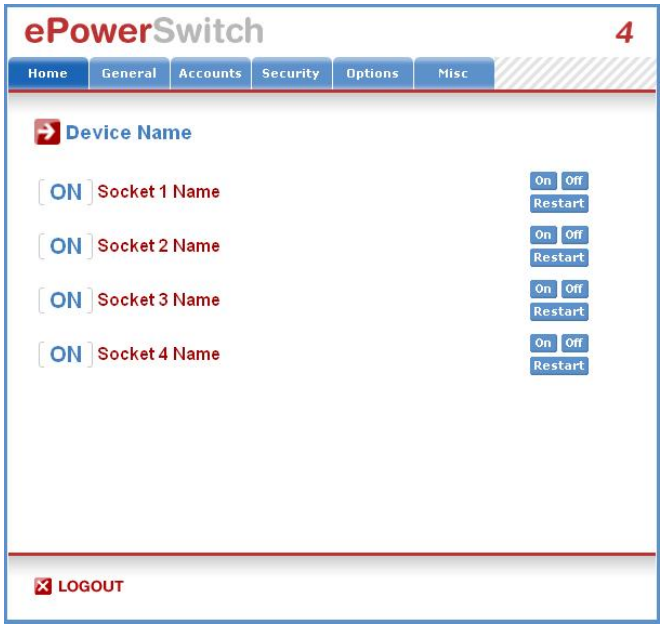
Notes:

- ∇ Before you can access the Web server of the ePowerSwitch, you must define the ePowerSwitch's network settings. (Ask your network administrator for the correct settings).
- ∇ The Web server of the ePowerSwitch works with Internet Explorer version 6.0 or higher and with Netscape version 6.1 or higher.

1. Start your Web browser.

2. Enter the IP address of your ePowerSwitch. The browser displays the login dialog.

3. Enter the administrator name (default: "admin") and password (default: "admin") and click ***OK***. The browser now displays the homepage of the ePowerSwitch, where you can define the ePowerSwitch settings.



Home tab
On this tab, you can switch on, off and restart the controlled power outlets.

General tab
On this tab, you can:
- assign a label to the ePowerSwitch and its 4 controlled power outlets,

Note: Never use inverted commas (") in these fields.

- define the IP parameters (IP address, subnet mask, gateway and port number),
- enable or disable the use of the ePowerSwitch Finder program,
- enable or disable the configuration of the ePowerSwitch using HTTP.

Accounts tab
On this tab, you can assign a name and password to the administrator and up to four users and specify the power outlets each user can control.

Note: Never use inverted commas (") in these fields.

Security tab
On this tab, define your network security masks. For details about this feature, see section 4, “Configuring the security settings”.

Options tab
On this tab, define the default states (On, Off or last memorised state) of each power outlet after power-up and the delay for the restart function for each power outlet.

Misc tab
This tab displays the number of power-ups and the number of switching cycles from Off to On for each controlled power outlet.

To save your settings, click ***Apply changes***.

To cancel the changes, click ***Discard changes***.

To exit without saving the settings, click ***Exit***.

3.3. Configuration using a terminal connection

You can also control the ePowerSwitch's power outlets and configure its Web server through its RS 232 serial port.

To configure the Web server:

1. Using the supplied RS 232 serial cable, connect the ePowerSwitch-4 to a free serial port of your PC.

2. Run a terminal program, such as Windows HyperTerminal. (To run HyperTerminal, click the ***Start*** button and select ***Programs –> Accessories –>HyperTerminal***.)

3. Configure the appropriate serial port with the following settings:

Bits per second:	9600
Data bits:	8
Parity:	None
Stop bits:	1
Flow control:	None

4. On your computer, press <**Enter**> until the prompt "**>**" appears on your screen.

   Note: The ePowerSwitch is now in Command mode and is waiting for commands to control the power outlets.

5. Press the <**Tab**> key on your keyboard.

   The Configuration menu appears on your screen and the ePowerSwitch is now in Configuration mode. Configure the Web server of your ePowerSwitch using the commands listed on screen.

```
Commands :

Display

   /DS      Display the Sockets Status

Control

   /SS      Switch the Sockets

Configuration

   /NP      Network Parameters Settings
   /PS      Passwords Settings
   /NS      Device and Socket Names Settings
   /SP      Socket Parameters Settings
   /IS      IP Security Settings
   /RS      Restart the Device
   /FS      Factory Settings
   /RC      Reset Counters

Enter Selection

>_
```

   All commands start with a slash (*/*).

(**Example:** To go to the **N**etwork **P**arameters settings menu, type "/NP" and press <**Enter**>.)
To display the current menu again, press <**Enter**>.
To return to the previous menu, press <**Esc**>.

Note: to exit Configuration mode and activate the new configuration, enter the restart command ***/RS***. This is especially important if you later want to control the power socket through a serial connection.

4. Configuring the security settings

Explanation of the mask settings

- Each mask consists of an IP address or an IP address range and defines the access rights to the ePowerSwitch's Web server for those addresses or address ranges.
- Each mask can be activated or deactivated.
- Each IP address consists of a series of four eight-bit numbers. The number 255 is a wildcard representing any number.
- Masks are listed in order of descending priority; mask 1 has the highest priority.
- Higher-priority masks override lower-priority ones.

Example 1

⇒ Deny access to all IP addresses except 192.168.001.015

Mask	IP address	Permit	Deny	Activated
1	192.168.001.015	✓		✓
2	255.255.255.255		✓	✓

Example 2

⇒ Permit access only to IP addresses beginning with 192

Mask	IP address	Permit	Deny	Activated
1	192.255.255.255	✓		✓
2	255.255.255.255		✓	✓

Example 3

⇒ Permit access only to IP addresses beginning with 192
⇒ Deny access to IP address 192.168.001.010

Mask	IP address	Permit	Deny	Activated
1	192.168.001.010		✓	✓
2	192.255.255.255	✓		✓
3	255.255.255.255		✓	✓

Example 4

⇒ Permit access to IP addresses beginning with 192
⇒ Deny access to address 192.168.001.010
⇒ Permit access to IP addresses beginning with 217.128.103

Mask	IP address	Permit	Deny	Activated
1	192.168.001.010		✓	✓
2	192.255.255.255	✓		✓
3	217.128.103.255	✓		✓
4	255.255.255.255		✓	✓

5. Serial port pin assignment

The 9-pin Sub-D connector for the serial connection has the following pin assignment:

Pin 2: TxD (transmit data to the PC)
Pin 3: RxD (receive commands)
Pin 5: GnD (ground)

The port settings are:

Bits per second:	9600
Data bits:	8
Parity:	None
Stop bits:	1
Flow control:	None

6. Controlling the power outlets

6.1. Controlling the power outlets through a Web browser

1. Start your Web browser.
   Enter the IP address of your ePowerSwitch.
   The browser displays the login dialog box.

2. Enter a user name and its corresponding password.

   – If you log on as administrator (default name: “admin”, default password: “admin”), you can control all power sockets and change all ePowerSwitch settings.

   – If you log on as a user (default names: “user1”, “user2”, “user3”, “user4”; corresponding default passwords: “user1”, “user2”, “user3”, “user4”), you can control only the sockets to which this user has authorized access.

   Use the **On / OFF** button to switch the socket On or Off.

   Use the **Restart** button switches the socket Off. It is automatically switched on again after a delay specified by the administrator (default value: 5 seconds).

6.2. Controlling the power outlets through a serial connection

The power outlets of the ePowerSwitch-4 can also be controlled through an RS 232 serial connection using a simple ASCII protocol.

To control the power outlets:

1. With the supplied RS 232 serial cable, connect the ePowerSwitch-4 to an available serial port of your PC.

2. Run a terminal program, such as Windows HyperTerminal.

3. Configure the appropriate serial port with the following settings:

Bits per second:	9600
Data bits:	8
Parity:	None
Stop bits:	1
Flow control:	None

4. On your computer, press <**Enter**> until the prompt (**>**) appears on your screen.
   The ePowerSwitch is now in Command mode and is waiting for user input to switch the power outlets.

Note: The power outlets of the ePowerSwitch can be controlled only if the ePowerSwitch is in Command mode and **not** in Configuration mode. To exit Configuration mode and activate the new configuration, enter ***/RS***. By default, the ePowerSwitch is in Command mode after a power-up.

6.2.1. Switching the power outlets

The command syntax is *Px=y*

Where x is the power outlet number (0 to 4):

- 0: all power outlets together
- 1: power outlet 1
- 2: power outlet 2
- 3: power outlet 3
- 4: power outlet 4

and y defines the action to be performed:

- 0: switch power outlet(s) Off
- 1: switch power outlet(s) On
- r: restart power outlet(s)
- t: toggle power outlet(s)

Examples:

Switch power outlet 1 On:	p1=1
Switch power outlet 2 Off:	p2=0
Restart power outlet 1:	p1=r
Restart power outlet 4:	p4=r
Toggle power outlet 3:	p3=t
Switch all power outlets On:	p0=1
Restart all power outlets:	p0=r

The commands are not case-sensitive, i.e. you can use upper- and lower-case letters.
To display the firmware version, type “?” followed by <**Enter**>.

6.2.2. Reading out the status of the power outlets

In the same way, the status of the power outlets can be read out using the following syntax:

Rx <ENTER>

The ePowerSwitch then sends the status with the following syntax:

Px=y<CR><LF>">"

y = 0 if the power outlet is Off

y = 1 if the power outlet is On

<CR> = Carriage Return

<LF> = Line Feed

">" = ">" character as prompt

Examples:

Read out the status of power outlet 1:
R1 <ENTER>

Read out the status of power outlet 2:
R2 <ENTER>

7. Technical specifications

Network standards	IEEE 802.3, 10BASE-T
Network protocols	TCP/IP, HTTP
Network connection	RJ-45 connector for UTP CAT5
Max. network cable length	100 metres (not included)
Serial connection	RS 232, Sub-D 9 female
Nominal input voltage	230 V/50 Hz
Input power socket	Country specific (CH, DE, EN, FR)
Output voltage	230 V/50 Hz
Output power socket	Country specific (CH, DE, EN, FR)
Maximum total current	10 A
Fuse	10 A(T)
LEDs	1 for power and network traffic 4 for socket status
Operating temperature	0 °C to +40 °C
Operating humidity	10 % to 80 %
Dimensions	478 x 73 x 49 mm
Weight	1 kg
Approvals	CE, EN 55022 & EN 55024, RoHS
Warranty	2 years repair or replace

Konformitätserklärung

Für unser Erzeugnis **"ePowerSwitch"** in den Varianten **ePowerSwitch-4, ePowerSwitch 1G, ePowerSwitch 4G, ePowerSwitch 8G, ePowerSwitch M8, ePowerSwitch S8, ePowerSwitch 4XM, ePowerSwitch 8XM, ePowerSwitch 8XS** wird hiermit bestätigt, dass es den wesentlichen Schutzanforderungen entspricht, die in den Richtlinien des Rates über elektrische und elektronische Produkte festgelegt sind:

1. 89/336/EWG EMV-Richtlinie
2. 73/23, bzw. 93/68 Niederspannungsrichtlinie

Zur Beurteilung wurden folgende Normen herangezogen:
Zu 1. Elektromagnetische Verträglichkeit nach
EN55022 Klasse B (1998) + A1, A2
EN55024 (1998) + A1, A2
EN61000-3-2 (2000) +A2
EN61000-3-3 (1995) + A1

Zu 2. Elektrische Sicherheit nach
EN60950-1 (2001)

Diese Erklärung wird verantwortlich für den Hersteller abgegeben durch (siehe unten):

Declaration of Conformity

We hereby declare that the versions **ePowerSwitch-4, ePowerSwitch 1G, ePowerSwitch 4G, ePowerSwitch 8G, ePowerSwitch M8, ePowerSwitch S8, ePowerSwitch 4XM, ePowerSwitch 8XM, ePowerSwitch 8XS** of our **ePowerSwitch** product meet the safety requirements specified in the European Union directives relating to electrical and electronic products:

1. EMC Directive 89/336/EEC
2. Low Voltage Directive 73/23/EEC and 93/68/EEC

The following standards were used in assessing conformity:
Electromagnetic compatibility
EN 55022 Class B (1998) + A1, A2
EN 55024 (1998) + A1, A2
EN 61000-3-2 (2000) +A2
EN 61000-3-3 (1995) + A1

Electrical safety
EN 60950-1 (2001)

This Declaration is issued by:
LEUNIG GMBH
D-53721 Siegburg

Siegburg, 14.12.2006

Peter H. Leunig

General Manager

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