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# ePowerSwitch M/S

## Power Management



## ePowerSwitch M8 (Master)



## ePowerSwitch S8 (Slave)

Quick Start Guide

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# ePowerSwitch M/S

ePowerSwitch M/S is a system of power control units consisting of a master – the ePowerSwitch M8 – and one or more ePowerSwitch S8 (slaves).

The ePowerSwitch M8 master is a power control unit with a built-in Web server, an Ethernet port and a serial RS 232 port. It can be used for switching up to eight power sockets be switched on and off either remotely through a network (an intranet or the Internet), or locally through a serial connection.

The number of controlled sockets can be increased to up to 40 outlets by connecting up to four ePowerSwitch S8 slave units to the master.

Featuring two separate power infeeds, and with its optional twin socket mode – which provides control of two sockets at the same time –, this device is the ideal solution for controlling power to servers with built-in redundancy.

The ePowerSwitch S8 slave unit has eight power outlets, which can be individually controlled through its serial RS 232 port, either by an ePowerSwitch M8 or using a device with a serial RS 232 interface (such as a PC or a console server). Up to four cascaded ePowerSwitch S8 slaves can be connected to any one serial port, providing up to 32 power outlets.

Like the master unit, this device has two separate power inputs for increased reliability and load capacity of the power outlets.

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## 1. Safety guidelines

### Important: Read before use!



In the following guidelines, “ePowerSwitch device” refers to both devices, the ePowerSwitch M8 master and the ePowerSwitch S8 slave.

- ▶ Check that the used power cables, plugs and sockets are in good condition.
- ▶ Always plug the ePowerSwitch M/S devices into properly grounded power outlets (two poles plus ground).
- ▶ The electrical mains sockets to which the power cables of the ePowerSwitch M/S devices are connected must be easily accessible and close to the ePowerSwitch devices.
- ▶ Connect the ePowerSwitch M/S only to three-wire 230 V AC, 50–60 Hz mains outlets.
- ▶ The total load per group of four power outlets of an ePowerSwitch device must never exceed 10 amperes.
- ▶ This device does not have its own fuse. The electrical installation and/or the connected consumer must therefore be designed and connected in such a way that the maximum permissible current of 10 amps for IEC 320 connectors is not exceeded.
- ▶ ePowerSwitch devices are intended for indoor use only. Do **not** install them in an area where excessive moisture or heat is present.
- ▶ ePowerSwitch devices contain potentially hazardous voltages. Do **not** attempt to disassemble them.
- ▶ ePowerSwitch devices do not contain any user-serviceable parts. Repairs must be performed only by factory-trained service personnel.
- ▶ Disconnect ePowerSwitch devices from the mains AC power outlet before installing or connecting them to other equipment.
- ▶ ePowerSwitch devices 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 devices.
- ▶ Do not open devices that are connected to the ePowerSwitch. Always disconnect the mains plug first.
- ▶ Connect only one consumer to each socket of the ePowerSwitch.

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## 2. Installation

The **ePowerSwitch M8** master has a built-in Web server, an Ethernet port and a serial port. It can be used as a stand-alone device to control eight IEC power sockets using the IP protocol. The number of controlled sockets can be increased to 16, 24, 32 or 40 by connecting one to four ePowerSwitch S8 slaves to the master.

Through its serial RS 232 port, the eight power sockets of the **ePowerSwitch S8** slave can be individually controlled by an ePowerSwitch M8 or any device with a serial RS 232 port (such as a PC or console server). By cascading up to four ePowerSwitch S8 slaves, up to 32 power outlets can be controlled through one serial port.

### **Connecting the ePowerSwitch M8 master**

1. Connect your 10BaseT cable to the RJ-45 network port and to the ePowerSwitch M8. If you want to configure the ePowerSwitch M8 or control its power sockets over a terminal connection, connect the supplied serial cable to an available serial port on your computer and to the serial port of the ePowerSwitch M8.
2. Plug the two power cables into two **earthed** sockets. LEDs A and B light up to confirm that power is switched on and the *Pwr* LED confirms that the Web server has power.
3. You can now configure the ePowerSwitch M8 by following the instructions in section 3, "Configuration" or, if necessary, install the ePowerSwitch S8 as described below.

### **Connecting the ePowerSwitch S8 slave**

1. Connect the supplied RJ9 link-up cable to the RJ9 Out connector of the master unit and to the RJ9 In connector of the slave unit.

To cascade several slaves, connect the RJ9 Out connector to the RJ9 In connector of the next slave.

- 
- 
2. Allocate an address to each slave by positioning the address selection DIP switches (marked "Slct") on the front panel as shown in the table below.
- 

**Notes:**

- Switch the device off before changing its DIP switches.
  - Do **not** use the same address for two different slaves.
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Slave number	DIP switch 1	DIP switch 2
1	Off	Off
2	On	Off
3	Off	On
4	On	On

Off: switch up

On: switch down

DIP switch 1 is on the left side, DIP switch 2 on the right.

3. Plug the two power cables into two **earthed** sockets. LEDs A and B light up to confirm that power is on.

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### 3. Configuring the ePowerSwitch M8 master

Before you can use the ePowerSwitch M8 on your network, you must configure its network settings. Ask your network administrator for the correct settings.

You can configure the ePowerSwitch M8 by one of two methods:

**Method 1:** Through a network using the ePowerSwitch Finder program

This is the simplest and fastest configuration method, but you need to have 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 M8 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 ePowerSwitch Finder program is included on the supplied CD.

If you decide to use this method, go to section 4, “Configuration using the ePowerSwitch Finder program”.

The default network settings are:

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

**Method 2:** Through an RS 232 serial connection using a terminal program

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

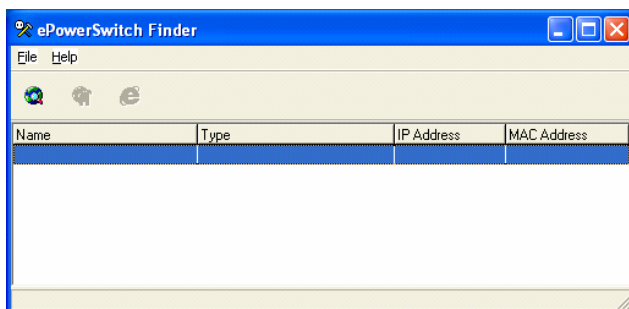
If you decide to use this method, go to section 5, “Configuration using a Terminal Program”.

## 4. Configuration using the ePowerSwitch Finder program

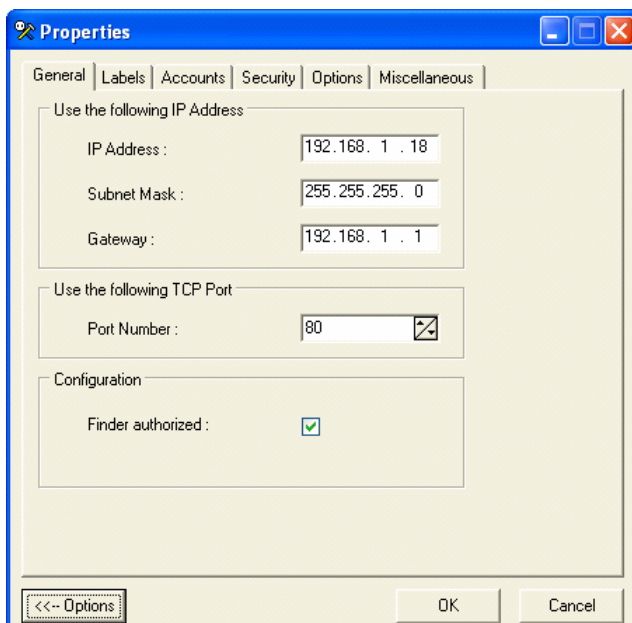
### Notes

- The ePowerSwitch M8 and the PC used to configure it have to be connected to the same network segment. Because the protocol of the ePowerSwitch Finder program can not be routed, it can not be used to configure the ePowerSwitch through a WAN or the Internet.
- The ePowerSwitch Finder program does not work if the administrator has deactivated it in the ePowerSwitch configuration settings (for example for security reasons).

1. Start the program **EPS-Finder.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 names, types and IP and MAC addresses of the connected ePowerSwitch units.
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.



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## General tab

On this tab you can:

- ▶ enter all network settings of the ePowerSwitch M8 (IP address, subnet mask, default gateway and port number);
- ▶ permit or deny the configuration using the ePowerSwitch Finder program (for security).

## Labels tab

On this tab you can:

- ▶ assign a name to a group of connected ePowerSwitch units (a group consists of one master and up to four slaves);
- ▶ assign a name to each ePowerSwitch and its eight power sockets; use the left vertical tabs to select the ePowerSwitch you want to configure.

## Accounts tab

On this tab you can assign a name and a password to the administrator, who has access to all the sockets within a group of ePowerSwitch units.

In addition, on the five vertical tabs DEVICE 1 to DEVICE 5, you can:

- ▶ define eight password-protected user accounts;
- ▶ define the sockets that each user can control;
- ▶ activate or deactivate an ePowerSwitch S8 slave connected to the master;
- ▶ define the control modes of each ePowerSwitch (Single or Twin mode).

In **Single mode**, you can control each power socket individually.

In **Twin mode**, each of the four sockets fed by power supply A (sockets 1 to 4) is controlled simultaneously with one of the sockets fed by power supply B (sockets 5 to 8). This mode is intended mainly for restarting devices with redundant power supplies.

## Security tab

On this tab you can define addresses that are allowed or denied access to the ePowerSwitch over the network. For details about this feature, see section 6, "Configuring the security settings".

## Options tab

On this tab you can:

- ▶ define the restart delay for all power sockets of all connected ePowerSwitch units;
- ▶ configure an e-mail address for problem reports: if a slave device without power is accessed by a user, the mail client will pop up with the address entered here in the To field. The user can then send this message manually to the administrator.

## Miscellaneous tab

This tab provides statistics for each of the devices 1 to 5 (number of power-ups) and each socket (number of Off–On transitions, including those due to power-up). These values are for information only and can not be reset by the user.



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## 5. Configuration using a terminal connection

The ePowerSwitch M8 has an RS 232 serial port, through which its power outlets can be controlled and its Web server configured.

To configure the Web server using a PC and a terminal connection:

1. Use the supplied RS 232 serial cable to connect the ePowerSwitch M8 to an available 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.

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**Note:** The ePowerSwitch M8 is now in Command mode and is waiting for user input to switch the power outlets. The serial command mode is explained in section 9.

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

The Configuration menu appears on your screen and the ePowerSwitch M8 is now in Configuration mode. Configure the Web server of your ePowerSwitch M8 using the commands listed on screen.

```
>
ePowerSwitch M8

Commands :

Configuration

  /NP      Network Parameters Settings
  /PS      Passwords Settings
  /NS      Group, Device and Socket Names Settings
  /DP      Device Parameters Settings
  /RD      Socket Restart Delay Settings
  /IS      IP Security Settings
  /RS      Restart the Device

Enter Selection

>
```

All commands start with a slash (/).

**Examples:** To go to the **Network Parameters** settings menu, type “/NP” and press <Enter>. To view the current menu again, press <Enter>. To return to the previous menu, press <Esc>.

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**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.

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The configuration of the serial port is described in section 7, “Serial port configuration”.

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## The main menu

The Main menu of the configuration mode contains all available commands.

All commands start with a slash (/).

**Examples:** To go to the **N**etwork **P**arameters settings menu, type the command **/NP**.  
To view the current menu again, press **<Enter>**.  
To return to the previous menu, press **<Esc>**.

```
ePowerSwitch
Commands :
Configuration
  /NP      Network Parameters Settings
  /PS      Passwords Settings
  /NS      Group, Device and Socket Names Settings
  /DP      Device Parameters Settings
  /RD      Socket Restart Delay Settings
  /IS      IP Security Settings
  /RS      Restart the Device
Enter Selection
>
```

## NETWORK PARAMETERS SETTINGS MENU

### Command /NP

This menu contains the commands for specifying the network settings (IP address, subnet mask, gateway and port number) and for permitting or denying the configuration over a local area network using the ePowerSwitch Finder program.

```
NETWORK PARAMETERS SETTINGS

    MAC Address      00.01.9A.F1.00.0F
1.  IP Address      192.168.100.100
2.  Subnet Mask     255.255.255.0
3.  Gateway         0.0.0.0
4.  Port            80
5.  Finder          Activated

Enter Selection or <ESC> to exit

>
```

#### Command 1

```
NETWORK PARAMETERS SETTINGS

    IP Address is: 192.168.100.100

Enter IP Address or <ESC> to exit
You must restart the device (Command /RS) to valid the new parameters

>
```

#### Command 2

```
NETWORK PARAMETERS SETTINGS

    Subnet Mask is: 255.255.255.0

Enter subnet mask or <ESC> to exit
You must restart the device (Command /RS) to valid the new parameters

>
```

#### Command 3

```
NETWORK PARAMETERS SETTINGS

    Gateway is: 0.0.0.0

Enter gateway address or <ESC> to exit
You must restart the device (Command /RS) to valid the new parameters

>
```

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#### Command 4

NETWORK PARAMETERS SETTINGS

Port is: 80

Enter port or <ESC> to exit

You must restart the device (Command /RS) to valid the new parameters

>

#### Command 5

NETWORK PARAMETERS SETTINGS

Finder is: Activated

1. Activate
2. Deactivate

Enter Selection or <ESC> to exit

You must restart the device (Command /RS) to valid the new parameters

>

## PASSWORD SETTINGS MENU

### Command /PS

In this menu, you can configure the names and the corresponding passwords of the administrator and of the users.

```
PASSWORDS SETTINGS
1. Administrator
2. Users Device 1
3. Users Device 2
4. Users Device 3
5. Users Device 4
6. Users Device 5

Enter Selection or <ESC> to exit
>
```

#### Command 1

```
ADMINISTRATOR NAME & PASSWORD SETTINGS
1. Administrator Name      admin
2. Administrator Password  admin

Enter Selection or <ESC> to exit
>
```

#### Command 2

```
DEVICE 1 / USERS SETTINGS
1. User 1
2. User 2
3. User 3
4. User 4
5. User 5
6. User 6
7. User 7
8. User 8

Enter Selection or <ESC> to exit
>
```

#### Command 1

```
DEVICE 1 / USER 1 SETTINGS
1. User 1 Name              user1-1
2. User 1 Password          user1-1
3. User 1 authorized Sockets 1,5

Enter Selection or <ESC> to exit
>
```

## GROUP, DEVICE AND SOCKET NAMES SETTINGS

### Command /NS

Use the commands in this menu to assign a name to a group of ePowerSwitch units, to each ePowerSwitch device and to each power socket.

```
GROUP, DEVICE AND SOCKET NAMES SETTINGS

1. Group Name          Group Name
2. Device 1 & Socket Name Device 2 name
3. Device 2 & Socket Name Device 2 name
4. Device 3 & Socket Name Device 3 name
5. Device 4 & Socket Name Device 4 name
6. Device 5 & Socket Name Device 5 name

Enter Selection or <ESC> to exit

>
```

### Command 1

```
GROUP NAME SETTING

Group Name is: Device Name

Enter Name (max. 32 characters) or <ESC> to exit

>
```

### Command 2 to 6

```
DEVICE 1 / SOCKET NAMES SETTINGS

1. Device Name      Device 1 name
2. Socket 1         Socket 1-1 name
3. Socket 2         Socket 1-2 name
4. Socket 3         Socket 1-3 name
5. Socket 4         Socket 1-4 name
6. Socket 5         Socket 1-5 name
7. Socket 6         Socket 1-6 name
8. Socket 7         Socket 1-7 name
9. Socket 8         Socket 1-8 name

Enter Selection or <ESC> to exit
```

## DEVICE PARAMETERS SETTINGS

### Command /DP

With the commands in this menu, you can:

- ▶ specify an e-mail address for problem reports: if a slave device without power is accessed by a user, the mail client will pop up with that address in the To field. The user can then send this message manually to the administrator.
- ▶ activate and deactivate an ePowerSwitch slave connected to an ePowerSwitch master.
- ▶ define the control mode (Single or Twin) for each ePowerSwitch device.

In **Single mode**, you can control each power socket individually.

In **Twin mode**, you can control two power sockets with one command. This mode is intended mainly for restarting devices with redundant power supplies. Here, the four sockets fed by power supply A (sockets 1 to 4) are automatically linked with the four sockets fed by power supply B (sockets 5 to 8).

```
DEVICE PARAMETERS SETTINGS

1. Mail to
2. Device #1    Activated      Twin Mode
3. Device #2    Activated      Twin Mode
4. Device #3    Not Activated  Single Mode
5. Device #4    Not Activated  Single Mode
6. Device #5    Not Activated  Single Mode

Enter Selection or <ESC> to exit

>
```

### Command 1

```
MAIL TO SETTING

Mail to is:

Enter Name (max. 32 characters) or <ESC> to exit

>
```

```
DEVICE 1 PARAMETERS SETTINGS

Device #1    Activated      Twin Mode

1. Single Mode / Twin Mode
2. Activate / Deactivate

Enter Selection or <ESC> to exit

>
```

### Command 1

```
DEVICE 1 PARAMETERS SETTINGS

Mode is: Twin Mode

1. Twin Mode
2. Single Mode

Enter Selection or <ESC> to exit

>
```

```
DEVICE 1 PARAMETERS SETTINGS

Device is: Activated

1. Activate
2. Deactivate

Enter Selection or <ESC> to exit

>
```



## SOCKET RESTART DELAY SETTINGS

### Command /RD

With this menu, you can define the restart delay for all power sockets.

```
SOCKET RESTART DELAY SETTINGS
1. Delay before Restart (sec)    5
Enter Selection or <ESC> to exit
>
```

### Command 1

```
SOCKET RESTART DELAY SETTINGS
    Delay before Restart (sec) is: 5
1. 5 sec
2. 10 sec
3. 15 sec
4. 30 sec
5. 60 sec
Enter Selection or <ESC> to exit
>
```

### Command 1

```
SOCKET RESTART DELAY SETTINGS
1. Delay before Restart (sec)    5
Enter Selection or <ESC> to exit
>
```

## IP SECURITY SETTINGS

### Command /IS

With this menu, you can specify IP addresses or IP ranges that are authorized or denied access to the Web server of the ePowerSwitch M8. See section 6 for details.

```
IP SECURITY SETTINGS

1. Mask #1    0.0.0.0          Deny    Not Activated
2. Mask #2    0.0.0.0          Deny    Not Activated
3. Mask #3    0.0.0.0          Deny    Not Activated
4. Mask #4    0.0.0.0          Deny    Not Activated
5. Mask #5    0.0.0.0          Deny    Not Activated
6. Mask #6    0.0.0.0          Deny    Not Activated
7. Mask #7    0.0.0.0          Deny    Not Activated
8. Mask #8    0.0.0.0          Deny    Not Activated

Enter Selection or <ESC> to exit

>
```

### Command 1

```
IP SECURITY SETTINGS

Mask #1    0.0.0.0          Deny    Not Activated

1. Edit the Mask
2. Permit / Deny
3. Activate / Deactivate

Enter Selection or <ESC> to exit

>
```

### Command 1

```
IP SECURITY SETTINGS

Mask #1 is: 0.0.0.0

Enter mask or <ESC> to exit

>
```

### Command 2

```
IP SECURITY SETTINGS

Mask #1 Access is: Deny

1. Permit
2. Deny

Enter Selection or <ESC> to exit

>
```

### Command 3

```
IP SECURITY SETTINGS

Mask #1 Supervision is: Not Activated

1. Activate
2. Deactivate

Enter Selection or <ESC> to exit

>
```

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## RESTART THE DEVICE

### Command /RS

This command is used for restarting the ePowerSwitch M8.

A restart must be performed:

- ▶ after you have changed network parameters (with command /NP),
- ▶ to exit serial configuration mode and return to command mode.

```
RESTART THE DEVICE
```

```
The system is reinitializing, please wait ...
```

```
>
```

## 6. 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	✓		✓
4	217.128.103.255	✓		✓
3	255.255.255.255		✓	✓

## 7. Serial port pin assignment

### ePowerSwitch master

**Connector:** 9-pin Sub-D female connector

#### Pin assignment

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

#### Connection settings

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

#### Notes:

- The serial cable supplied with the ePowerSwitch M8 is a standard straight extension cable with DB9 connectors. This cable is intended for connecting the serial port of the ePowerSwitch M8 to a serial port of a PC.
- You can use any other straight serial cable, but for EMC reasons, we advise you not to use cables longer than 2.9 metres.

### ePowerSwitch slave

**Connector:** RJ9 female

#### Pin assignment

1 (yellow): Ground  
2 (white): RxD (receive commands)  
3 (blue): TxD (transmit data)  
4 (orange): Ground

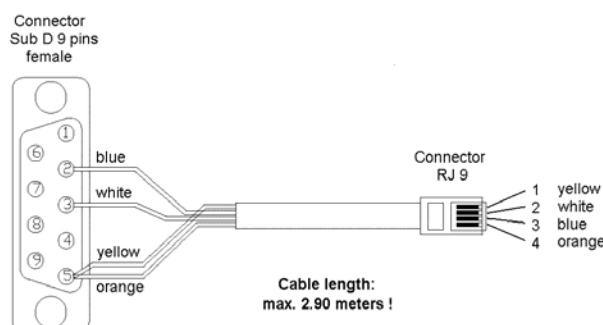
#### Connection settings

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

A short connection cable is delivered with each ePowerSwitch S8 slave to connect its RJ9 input connector to the RJ9 output connector of an ePowerSwitch M8 master or another ePowerSwitch S8.

**Note:** The total length of all serial cables must not exceed 2.9 metres.

If you want to connect the ePowerSwitch S8 directly to the serial port of a PC, assemble a serial cable as shown in the drawing below or contact your dealer to order one.

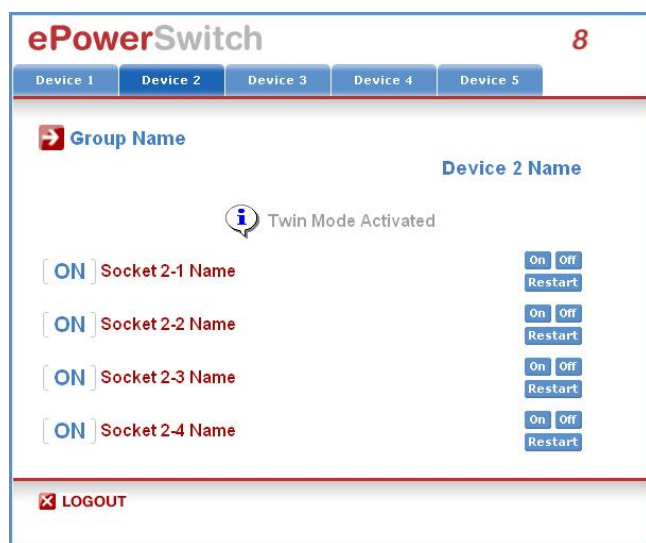


## 8. Controlling the power outlets through a Web browser

1. Start your Web browser.  
Enter the IP address of your ePowerSwitch M8.  
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.
  - ▶ If you log on as a user, you can view and control only the sockets that you have authorized access to.



Home page in «Single mode»



Home page in «Twin mode»

Use the **On / Off** button to switch the socket On and 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).

### Default configuration of the ePowerSwitch M8

The default network settings are:

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

The default administrator login is:

Name: admin  
Password: admin

## 9. Controlling the power outlets through a serial connection

The power outlets of the ePowerSwitch M8 master and the ePowerSwitch S8 slave can be controlled through an RS 232 serial connection using a simple ASCII protocol.

### Controlling the power sockets of the ePowerSwitch M8 and its slaves

1. With the supplied RS 232 serial cable, connect the ePowerSwitch M8 to an available 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. The ePowerSwitch M8 is now in Command mode and is waiting for user input to switch the power outlets.

---

**Note:** The power outlet 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.

---

The command syntax is  $Pxy=z$ .

Parameter	Value	Function
x	1 to 5	Represents the number of the ePowerSwitch: 1 is the ePowerSwitch M8 master 2 to 5 are the connected slaves
y	0 1 to 8	Specifies that all the sockets are controlled together Indicates the number of the controlled socket
z	0	Switches the socket(s) Off
	1	Switches the socket(s) On
	r	Restarts the socket(s)
	t	Toggles the state of the socket

Example – controlling the master:

P10=1 **<Enter>**: Switch all 8 sockets On  
P10=0 **<Enter>**: Switch all 8 sockets Off  
P14=r **<Enter>**: Restart socket 4  
P18=t **<Enter>**: Toggle socket 8

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---

Example – controlling the first slave connected to the master:  
(DIP switch of the slave: 1 = On and 2 = Off)

P20=1: <Enter> Switch all 8 sockets On  
P25=0: <Enter> Switch socket 5 Off

---

**Notes:**

- The commands are not case-sensitive, i.e. you can use both lower- and upper-case letters.
  - The ePowerSwitch sends an echo for each received character.
  - In Twin mode, sending a command to a specific socket number will also control its corresponding twin socket.
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## Controlling the power sockets of an ePowerSwitch slave or several connected slaves

In this case, you have to assemble a special serial cable as shown in the drawing in section 7 or contact your dealer to order one.

1. Use this special cable to connect the ePowerSwitch slave to an available 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, enter the command as shown below.

The command syntax is  $Pxy=z$ :

Parameter	Value	Function
x	1 to 4	Number of the connected slave
y	0	Specifies that all the sockets are controlled together
	1 to 8	Indicates the number of the socket to control
z	0	Switches the socket(s) Off
	1	Switches the socket(s) On
	r	Restarts the socket(s)
	t	Toggles the state of the socket

Example – controlling the first slave:  
(DIP switch: 1 = On and 2 = Off)

P10=1 <Enter>: Switch all 8 sockets ON  
P10=0 <Enter>: Switch all 8 sockets Off  
P14=r <Enter>: Restart socket 4  
P18=t <Enter>: Toggle socket 8

Example – controlling the second slave  
(DIP switch: 1 = On and 2 = Off)

P20=1 <Enter>: Switch all 8 sockets On  
P25=0 <Enter>: Switch socket 5 Off

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### Notes:

- The commands are not case-sensitive, i.e. you can use both lower- and upper-case letters.
  - The ePowerSwitch sends an echo for each received character.
-

## 10. Technical specifications

### ePowerSwitch M8

<b>Network standards</b>	IEEE 802.3, 10BASE-T
<b>Network protocols</b>	TCP/IP, HTTP
<b>Network connection</b>	RJ-45 connector for UTP CAT5
<b>Max. network cable length</b>	100 metres (not included)
<b>Serial connection</b>	RS 232, SUB-D 9 female
<b>Nominal input voltage</b>	230 V/50 Hz
<b>Input power socket</b>	IEC-320
<b>Output voltage</b>	230 V/50 Hz
<b>Output power socket</b>	IEC-320
<b>Maximum total current</b>	10 A
<b>LEDs</b>	1 for power supply A 1 for power supply B 8 for power sockets status 1 for Web server power and network traffic 4 for the connected slaves
<b>Operating temperature</b>	0 °C to +40 °C
<b>Operating humidity</b>	10 % to 80 %
<b>Dimensions (LxDxH)</b>	437 x 107 x 42 mm
<b>Weight</b>	2 kg
<b>Approvals</b>	CE, EN 55022 & EN 55024
<b>Warranty</b>	2 years repair or replace

### ePowerSwitch S8

<b>Serial connection</b>	RS 232, Sub-D 9 female
<b>Nominal input voltage</b>	230 V/50 Hz
<b>Input power socket</b>	IEC-320
<b>Output voltage</b>	230 V/50 Hz
<b>Output power socket</b>	IEC-320
<b>Maximum total current</b>	10 A
<b>LED's</b>	1 for power and network traffic 1 for the socket status
<b>Operating temperature</b>	0 °C to +40 °C
<b>Operating humidity</b>	10 % to 80 %
<b>Dimensions</b>	437 x 107 x 42 mm
<b>Weight</b>	2 kg
<b>Approvals</b>	CE, EN 55022 & EN 55024
<b>Warranty</b>	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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