

Power Switch NG 4-port



System Administrator's Guide

Power Switch

The PSE554MA power switch Master is a power control unit with a built-in Web server, an Ethernet and a RS232 connection. It enables to control the power supply of 4 power outlets through an Ethernet connection.

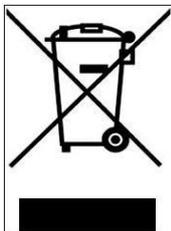
This unit offers additional environmental control functions and IP device monitoring. It has a Real Time Clock to trigger scheduled actions and timestamp all events. Its serial interface enables to control the power outlets over a Terminal connection (KVM Switch, console server...) and to trigger a soft shutdown of a server with shutdown capabilities.

Up to 4 peripherals can be connected to its A-xBus connector (temperature, humidity, ambient light, Input/Output modules, power Switches...).

This device supports the HTTP, DHCP, Syslog, SNMP and SNTTP protocols.



This product carries the CE mark to indicate compliance with the European Directive on Electromagnetic Compatibility (89/336/EEC). It has been tested to EN55024:1998 and EN55022:1998.



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SAFETY INSTRUCTIONS: To be read before use!



NOTE

- The Power Switch devices can only be installed by qualified people with the following installation and use instructions. The manufacturer disclaims all responsibility in case of a bad utilization of the Power Switch devices and particularly any use with equipments that may cause personal injury or material damage.
- This equipment is designed to be installed on a dedicated circuit that must have a circuit breaker or fuse protection.
- The electrical power sockets used to plug the power cords of the Power Switch devices must be close to the Power Switch devices and easily accessible.
- Check that the power cords, plugs and sockets are in good condition.
- The Power Switch devices can only be connected to three-wire 230 VAC (50-60Hz) sockets.
- Always plug the Power Switch devices into properly grounded power sockets (two poles plus ground).
- Never exceed 10 Amp total load for each group of 4 power outlets of an Power Switch device.
- The Power Switch devices are intended for indoor use only. Do NOT install them in an area where excessive moisture or heat is present.
- Always disconnect the power cord of the Power Switch device if you want to intervene on the Power Switch device or on the equipment powered from the Power Switch device.
- The power outlets of the Power Switch devices are not circuit breakers! If you want to intervene on equipments connected to an Power Switch device you must disconnect these equipments from the Power Switch device.
- Do NOT attempt to disassemble the Power Switch devices, they contain potentially hazardous voltages.
- The Power Switch devices contain no user serviceable parts and repairs are to be performed by factory trained service personnel only.
- Always use a shielded cable for the Ethernet connection.

1. DESCRIPTION

The **Power Switch Master 4-port** is a power control unit with a built-in Web server, an Ethernet and a RS232 connection. It enables to control the power supply of 4 power outlets through an Ethernet connection.

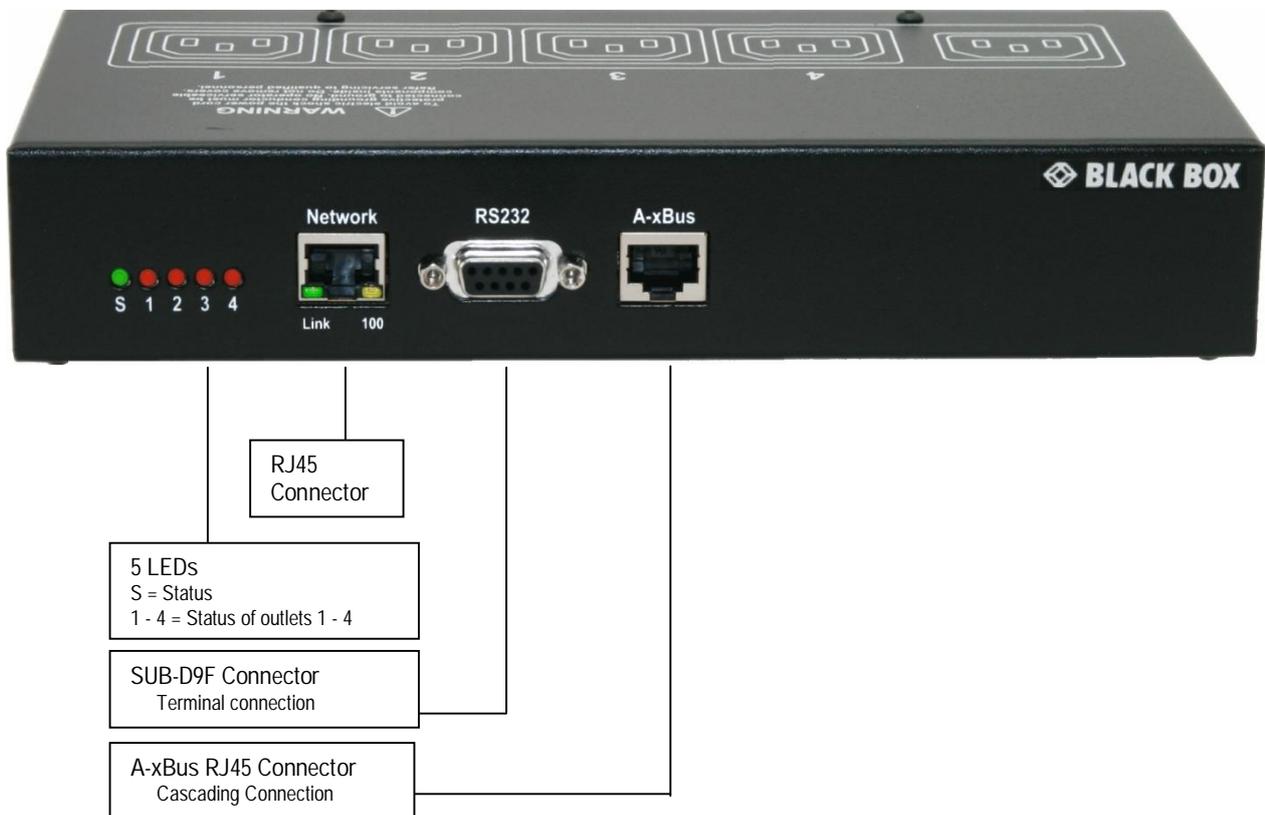
This unit offers additional environmental control functions and IP device monitoring. It has a Real Time Clock to trigger scheduled actions and timestamp all events. Its serial interface enables to control the power outlets over a Terminal connection (KVM Switch, console server...) and to trigger a soft shutdown of a server with shutdown capabilities.

Up to 4 peripherals can be connected to its A-xBus connector (temperature, humidity, ambient light, Input/Output modules, power Switches...).

The Power Switch Master 4-port supports the HTTP, DHCP, Syslog, SNMP and SNTp protocols.

1.1 Diagram

The front panel of the **Power Switch Master 4-port**



S 1 2 3 4 (LEDs)

S Status

On = Power Switch Master 4-port software is loaded and functional
Off = power default

- 1 Red. Status of power outlet 1 (On/Off)
- 2 Red. Status of power outlet 2 (On/Off)
- 3 Red. Status of power outlet 3 (On/Off)
- 4 Red. Status of power outlet 4 (On/Off)

10/100 (RJ45 Connector)

Network connection 10/100 Mbits/sec

Link (LED)

Off = Network connection not detected

On = Network connection detected

Flashing = the device is sending or receiving data over this port

100 (LED)

Off = 10 Mbits/sec connection

On = 100 Mbits/sec connection

RS232 (SUB-D 9F Connector)

Serial port RS232 with DB-9 female connector

Pinout

2 = TxD

3 = RxD

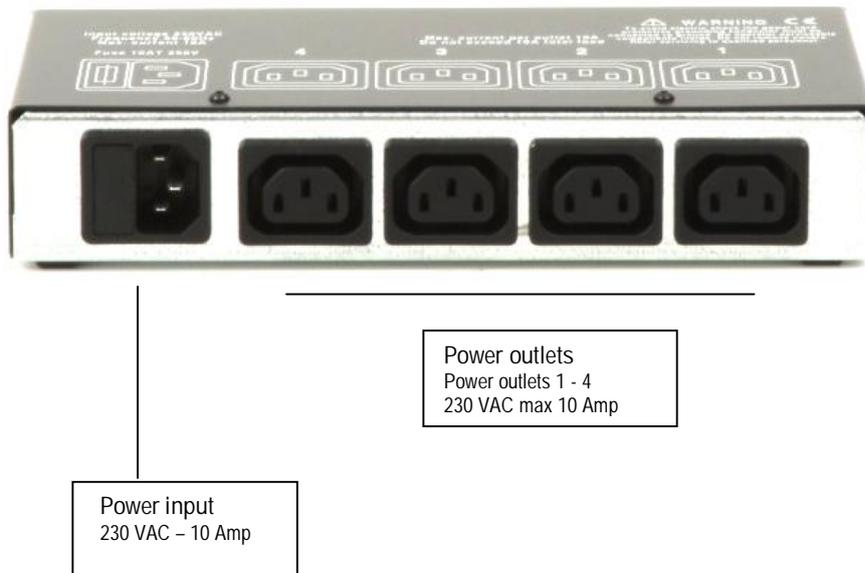
5 = Gnd

A-xBus

The RJ45 connector is used for cascading up to 4 peripherals

Maximal TOTAL line length: 200 meters

The back of the **Power Switch Master 4-port**



1.2 Package list

The following items are included:

- 1 Power Switch Master 4-port
- 1 power cable, 230 V / 10 Amp, length 1.80 Meters
- 1 RJ45 M/M cable, 2 Meters
- 1 serial cable SUB-D 9 points M/F, 1.80 Meters
- 1 quick installation guide
- 1 CD with User Guide, Quick Start Guide and Windows configuration program

2. INSTALLATION

Remark:

Make sure that the Power Switch Master 4-port is powered off.

Connection instructions

1. Use a shielded RJ45 network cable to connect your Power Switch Master 4-port to the network.
2. Use appropriated three-wire power cords (two poles plus ground) to connect your electrical devices to the Power Switch Master 4-port unit.
3. Plug the power cable into a grounded socket. The Status LED lights on to confirm that power is on.
4. You can now configure the Power Switch Master 4-port by following the indications of the chapter "Configuration of the Power Switch Master 4-port".

3. CONFIGURATION

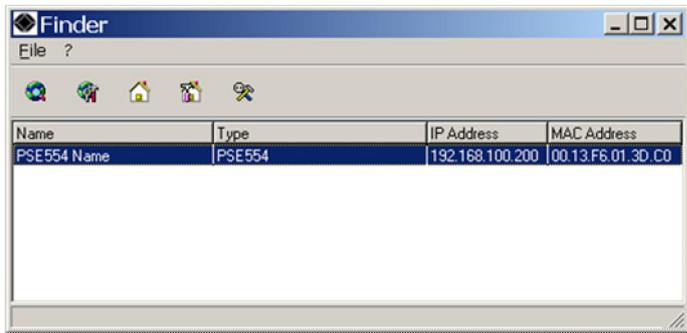
To use the Power Switch Master 4-port on your network, you must first configure its network parameters. Ask your network administrator for the parameters to use.

There are three methods to configure the network parameters of the Power Switch Master 4-port:

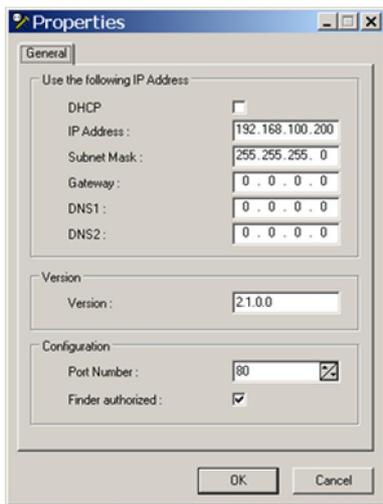
3.1. Configuration through the LAN using the Finder program

It is the simplest and fastest configuration method if you use Windows as operating system. It allows to configure your Power Switch Master 4-port through your local network even if its network parameters are not compatible with those of your PC.

1. Start the BBFinder.exe program contained on the CD-ROM.
2. Open the File menu and choose **SCAN** (or click on the first left button in the tool bar) to discover the Power Switch Master 4-port connected on your LAN.



3. Open the File menu and choose **CONFIGURE** (or click on the second left button in the tool bar) to configure the network parameters.



This page enables to define all IP parameters of the Power Switch Master 4-port device and displays the version of the Firmware. The HTTP protocol is enabled and the Finder program is authorized at factory settings.



!!! To achieve the highest security level we suggest to disable the configuration using the Finder program after the first installation.

DHCP:

Check this box if you want to obtain the IP address, the subnet mask and the default gateway for your Power Switch Master 4-port via DHCP.

Use of DHCP (Dynamic Host Configuration Protocol) requires a DHCP host to be set up on the network.

IP Address:

IP address of the Power Switch Master 4-port, default is 192.168.100.200.

Subnet Mask:

Subnet Mask of the Power Switch Master 4-port, default is 255.255.255.0.

Gateway:

Generally the address of your router, default is blank.

DNS 1:

Primary DNS (Domain Name Server), default is blank.

DNS 2:

Secondary DNS, default is blank.

Port Number:

Port number: default is 80 (HTTP).

Version:

Firmware version of the Power Switch Master 4-port

Finder authorized:

The Network parameters of the Power Switch Master 4-port can be configured through a Local Area Network using the provided Finder Program. It is a simple and fast configuration method if you use Windows as operating system.

!!! The Finder Program is enabled as default value. For security reasons we suggest to disable the Finder program after the first configuration.

3.2. Configuration through an RS232 Terminal connection

1. Use the provided RS232 cable to connect the Power Switch Master 4-port to an available serial port of your PC.
2. Run a Terminal program such as Windows HyperTerminal.
3. Configure the appropriate serial port @ 9.600, n, 8, 1 and no flow control.
4. On your computer, press <ENTER> until the menu appears on your screen.
5. Press the "M" on your keyboard and follow the menu to configure the network parameters of your Power Switch Master 4-port.

Special commands (type /? or /Help)

/initlog	Clears the log file
/initadminaccount	Restores default administrator password
/restorefactconf	Restores to factory default settings
/help /?	Displays this help

```
-----  
NETWORK INTERFACE PARAMETERS:  
  IP address on LAN is 192.168.100.200  
  LAN interface's subnet mask is 255.255.255.0  
  IP address of default gateway to other networks is 0.0.0.0  
  IP address of primary DNS server is 0.0.0.0  
  IP address of secondary DNS server is 0.0.0.0  
MISCELLANEOUS:  
  HTTP Port is 80  
  Finder program is enabled  
HARDWARE PARAMETERS:  
  MAC Address is 00.13.F6.01.3C.80  
-----
```

Configuration menu

3.3. Configuration through the LAN using a standard Browser

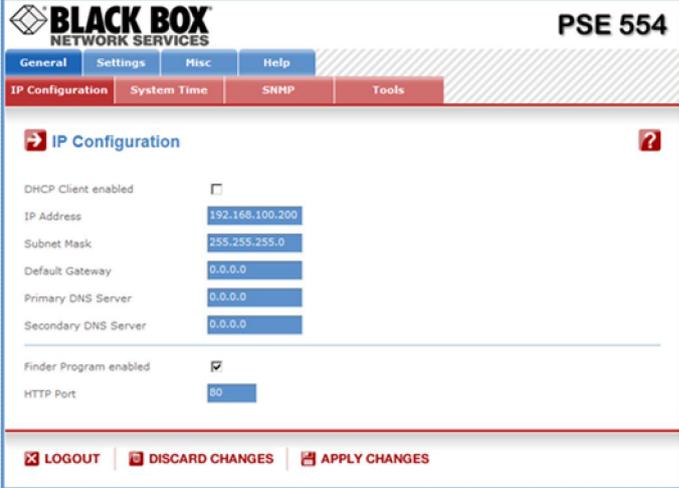
During the first installation, change temporarily the network settings of your PC according to the default network settings of the Power Switch Master 4-port.

Factory network settings of the Power Switch Master 4-port:

IP Address: **192.168.100.200** - Port: **80**

Gateway: **255.255.255.0**

1. Open your Web browser and type following IP address:
<http://192.168.100.200/sysadmin.htm>
2. Enter the administrator name and password (default for both = **admin**)
3. The home page appears, allowing you to configure all settings of your Power Switch Master 4-port.



The screenshot displays the web interface for the Black Box Network Services PSE 554. The page title is "BLACK BOX NETWORK SERVICES" and "PSE 554". The navigation menu includes "General", "Settings", "Misc", and "Help". The "IP Configuration" tab is selected, showing the following settings:

Setting	Value
DHCP Client enabled	<input type="checkbox"/>
IP Address	192.168.100.200
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
Primary DNS Server	0.0.0.0
Secondary DNS Server	0.0.0.0
Finder Program enabled	<input checked="" type="checkbox"/>
HTTP Port	80

At the bottom of the page, there are three buttons: "LOGOUT", "DISCARD CHANGES", and "APPLY CHANGES".

3.3.1. General / IP configuration

This page enables you to define all the IP parameters of the Power Switch Master 4-port.

The screenshot shows the 'IP Configuration' page for a Black Box PSE 554 device. The page has a navigation bar with 'General', 'Settings', 'Misc', and 'Help' tabs. Below that, there are sub-tabs for 'IP Configuration', 'System Time', 'SNMP', and 'Tools'. The 'IP Configuration' sub-tab is active. The main content area contains several configuration options: 'DHCP Client enabled' (checkbox, unchecked), 'IP Address' (text input, 192.168.100.200), 'Subnet Mask' (text input, 255.255.255.0), 'Default Gateway' (text input, 0.0.0.0), 'Primary DNS Server' (text input, 0.0.0.0), 'Secondary DNS Server' (text input, 0.0.0.0), 'Finder Program enabled' (checkbox, checked), and 'HTTP Port' (text input, 80). At the bottom of the page, there are three buttons: 'LOGOUT', 'DISCARD CHANGES', and 'APPLY CHANGES'.

DHCP Client enabled:

Check this box if you want to obtain the IP address, the subnet mask and the default gateway for your Power Switch Master 4-port via DHCP. Factory default setting for this option is disabled.

Use of DHCP (Dynamic Host Configuration Protocol) requires a DHCP host to be set up on the network.

IP Address:

IP address of the Power Switch Master 4-port, default is 192.168.100.200.

Subnet Mask:

Subnet Mask of the Power Switch Master 4-port, default is 255.255.255.0.

Default Gateway:

Generally the address of your router, default is blank.

Primary DNS Address:

Primary DNS (Domain Name Server), default is blank

Secondary DNS Address:

Secondary DNS, default is blank

Finder Program enabled:

The Network parameters of the Power Switch Master 4-port can also be configured through a Local Area Network using the provided Finder Program. It is a very simple and fast configuration method if you use Windows as operating system.

The Finder Program is enabled as default value.

!!!For security reasons we suggest to disable the Finder program after the first configuration.

HTTP Port:

Port number: default is 80.

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.2. General / System time

The system time of the Power Switch Master 4-port is used to synchronize scheduling actions and to timestamp SNMP traps, Syslog information and internal logs. The system time can be set manually with the browser time of the connected computer or can be automatically synchronized with one or two NTP timeservers.

BLACK BOX
NETWORK SERVICES

Power Switch NG4

General Settings Misc Help
IP Configuration System Time SNMP Tools

System Time

Current System Time: Wed 18 May 2011 10:01:17

Use Browser Time: Set System Time

Use NTP Server: Refresh Time: 12 hours

Primary: ntptime.org

Secondary: ntptime.net

Time Zone: (GMT+01:00) Brussels, Copenhagen, Madrid, Paris, Vilnius

Daylight Saving Time:

Start: Mar Last Sun 02 00

End: Oct Last Sun 03 00

LOGOUT DISCARD CHANGES APPLY CHANGES

Current System Time:

This field shows the current system time of the Power Switch Master 4-port.

As the system time is displayed through the browser, a small difference (1 to 2 sec) can appear as compared to the exact hour. The system time is nevertheless correct.

Use Browser Time:

If you want to set the system time using the current Browser time of your PC, select this option and click on the "Set System Time" button.

Use NTP Server:

If you want to set the system time using an NTP timeserver, select this option, choose a refresh interval and enter the IP address of the timeserver you wish to use in the "Primary" field. The address of a second timeserver can be specified in the "Secondary" field. The secondary timeserver is optional and is used only if the primary timeserver is not available.

You can enter either the hostname (in that case you must have specified a DNS server on the IP configuration page) or the IP address of an NTP server.

NTP uses port 123/UDP.

Time Zone:

Set the time zone corresponding to your location. The system clock will subsequently show local time. Without setting this, the system clock will show UTC/GMT time. Setting a time zone is only relevant if you are synchronizing with an NTP server.

Daylight Saving Time:

If you want to set Daylight Saving dates, check this box and specify the date you want to use.

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

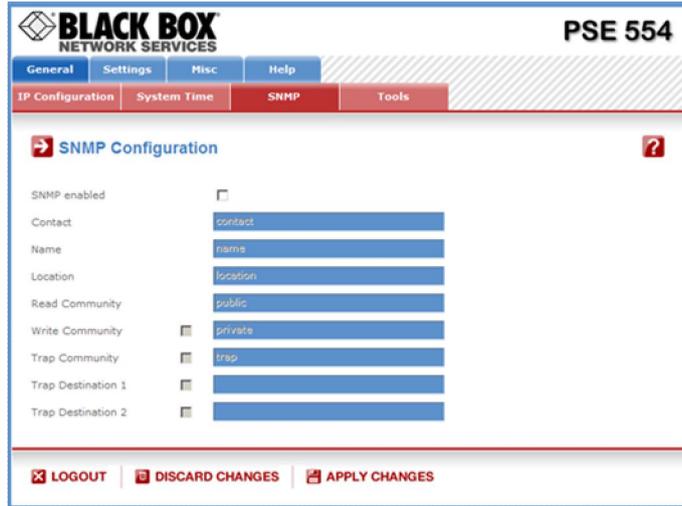
Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.3. General / SNMP

The Power Switch Master 4-port provides a built-in SNMP (Simple Network Management Protocol) agent, which enables you to manage the Power Switch Master 4-port through SNMP-based network management systems. The Power Switch Master 4-port MIB file enables to remotely read out the status of all power outlets and the values of all sensors (temperature, humidity, ambient light). It also enables to control individually all power outlets and all groups of power outlets. The MIB file is stored on the Power Switch Master 4-port and can be downloaded from the General / Tools Page.



SNMP enabled:

Check this box if you want to enable the SNMP protocol.

Contact:

In this field, enter the name you want to give to the Contact field. The name can be from 1 to 64 characters long, and can contain alphanumeric characters. Default name is "contact".

Name:

In this field, enter the name you want to give to the Name field. The name can be from 1 to 64 characters long, and can contain alphanumeric characters. Default name is "name".

Location:

In this field, enter the name you want to give to the Location field. The name can be from 1 to 64 characters long, and can contain alphanumeric characters. Default name is "location".

Read Community:

In this field, enter the name you want to give to the Read Community field. The name can be from 1 to 64 characters long, and can contain alphanumeric characters. Default name is "public".

Write Community:

Check this box if you want to be able to control the power outlets through a MIB browser. In the following field, enter the name you want to give to the Write Community. The name can be from 1 to 64 characters long, and can contain alphanumeric characters. Default name is "private".

Trap Community:

Check this box if you want to configure the Power Switch Master 4-port SNMP agent to send traps to a community. In the following field, enter the name you want to give to the Trap Community. The name can be from 1 to 64 characters long, and can contain alphanumeric characters. Default name is "trap".

Trap Destination 1:

Check this box and enter the primary SNMP Server address the traps will be sent to.

Trap Destination 2:

Check this box and enter the secondary SNMP Server address the traps will be sent to.

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

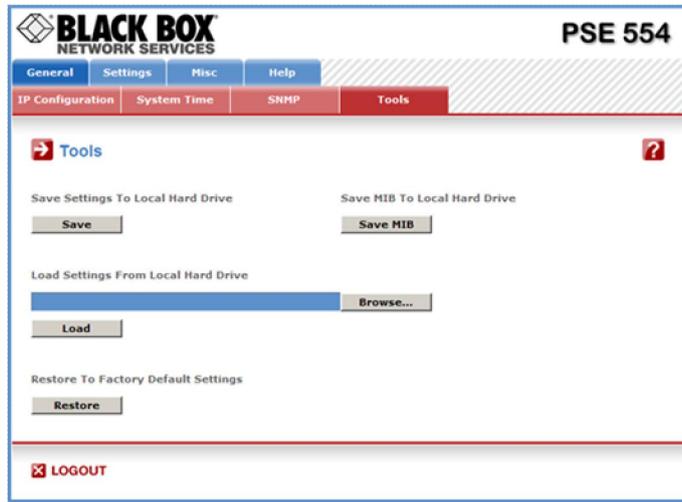
APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.4. General / Tools

This page enables you to:

- download and save the current settings of your Power Switch Master 4-port on your PC,
- upload an existing configuration file to your Power Switch Master 4-port,
- restore the factory settings,
- download the Power Switch Master 4-port MIB file on your PC.



Save:

Click this button to save the current system settings onto your local hard drive.

Load:

Click this button and select a settings file you want to download to the Power Switch Master 4-port.

Restore:

Click this button if you want to restore the factory default settings.

Save MIB:

Click this button if you want to download the Power Switch Master 4-port MIB file onto your local hard drive.

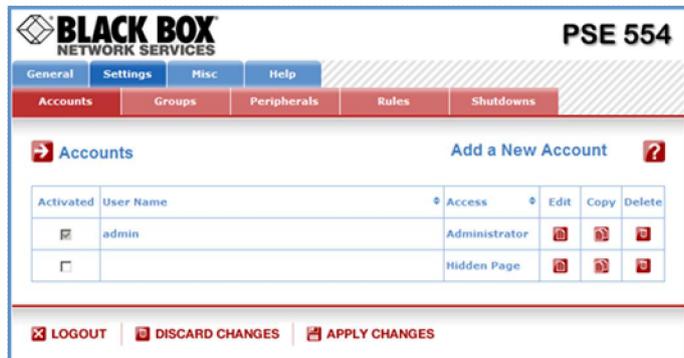
LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

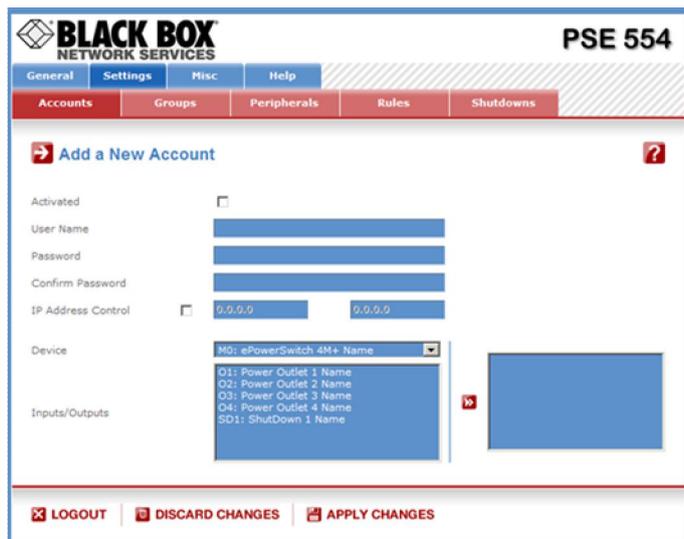
3.3.5. Settings / Accounts

3.3.5.1 Settings / Accounts

This page is used to create, activate, deactivate, modify and delete up to 40 accounts.



- To activate or deactivate an account, check or uncheck the corresponding checkbox.
- To modify an account, click on "Edit" next to the corresponding account.
- To delete an existing account, click on "Delete" next to the corresponding account.
- To create an account, click on "Add a New Account" on the right side of the page. A new page appears, allowing you to set all the parameters of the account.



User Name:

In this field, enter the name you want to give to the user. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Password:

In this field, enter the password you want to give to the user. The password can be from 4 to 32 characters long, and can contain alphanumeric characters.

Confirm Password:

In this field, enter the password again.

IP Address Control:

Check this checkbox and specify an IP address or a range of IP address if you want to restrict the access of this account.

Groups:

This field is used to add or remove groups to the current account.



To add Groups to the current account, press the Ctrl key and click on the displayed Groups. The selected Groups are marked dark blue and their IDs are listed at the right side of the Groups field.

This field appears only if you have already created at least one group (Settings/Groups Tab).

Device:

In this drop-down list, choose a device from which you want to add Inputs or Outputs to the current account.

Inputs/Outputs:

This field is used to add/remove Inputs or Outputs to/from the current account.

To add Inputs or Outputs to the current account, press the Ctrl key and click on the Inputs/Outputs of the device selected in the previous field. The selected Inputs/Outputs are marked dark blue and their IDs are listed at the right side of the Input/Output field.

The Power Switch Master 4-port supports number of peripherals which are clearly identified by specific ID Codes.

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

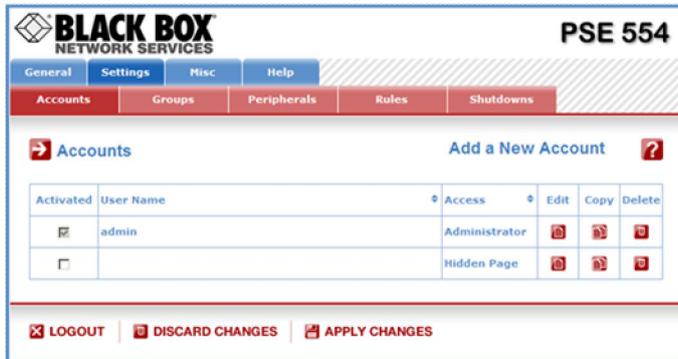
Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

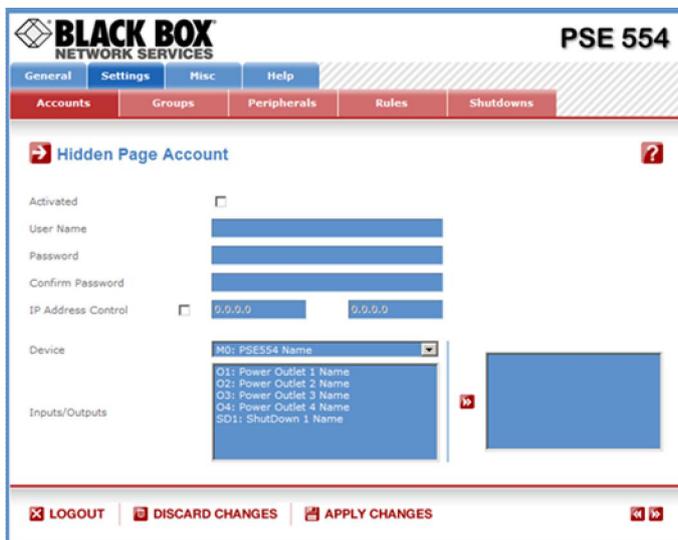
Click "Apply Changes" at the bottom of the page to save changes.

3.3.5.2 Settings / Accounts / Hidden Page account

This account is intended for developers who want to implement the power outlet control in own programs. If activated, they can access to a special page named hidden.htm and control individually the power outlets using simple commands.



- To activate or deactivate this account, check or uncheck the corresponding checkbox.
- To modify the Hidden page account, click on "Edit" next to the corresponding account. A new page appears, allowing you to set all the parameters of the account.



Activated

This check box must be checked to activate the Hidden Page Account. It enables to deactivate temporarily this account while keeping all its settings for a later use. The Hidden Page Account cannot be deleted.

User Name

In this field, enter the name you want to give to the Hidden Page Account.

The user name can be up to 32 characters long and contain alphanumeric characters.

Do not use quotes or special characters in labels!

Password

In this field, enter the password you want to give to the Hidden Page Account.

The password can be up to 32 characters long and contain alphanumeric characters.

Confirm Password

In this field, enter the password again for confirmation.

IP Address Control

Network security can be increased by IP address filtering. Check this checkbox and specify an IP address or a range of IP addresses which has the right to access to the Hidden Page Account.



Note

Groups

This field appears only if at least one group has already been created. To create a group, go to the Settings/Groups Page.

- To add an existing group of Power Outlets to the current account, select the group you want to add in the left field and click on the Arrow button, the group will then appear in the right field.
- To remove a Group from the current account, select the group you want to remove in the right field and click on the Arrow button, the group will then appear in the left field.

Each group is clearly identified by its own ID (G1, G2, G3...) followed by the name given during the configuration. If the symbol "!" appears between brackets behind the ID Code that means that the Group is not activated. To activate it, go to the "Settings/Groups" page.

Device

In this drop-down list, choose the device from which one you want to add Inputs or Outputs to the current account.

- **Only properly connected devices or devices which already have been connected to the Power Switch appears in this field.**
- **Each peripheral is clearly identified by its own ID followed by the name given during the configuration. Behind the ID can appear a character between brackets which has following meaning:**
 - **"!" means that the corresponding device is properly connected to the Power switch but not activated. To activate it, go to the "Settings/Peripherals" page.**
 - **"X" means that the corresponding device has already been connected to the Power switch but is currently no longer connected to the Power Switch.**

Inputs/Outputs

- This field is used to add/remove Inputs or Outputs to/from the current account.
- To add an Input or Output to the current account, select the Input / Output you want to add in the left field and click on the Arrow button, the selected Input / Output will then appear in the right field.
- To remove an Input or Output from the current account, select the Input / Output you want to remove in the right field and click on the Arrow button, the selected Input / Output will then appear in the left field.

Accessing to the Hidden Page Account

To be able to access to the Hidden Page, you must have configured the Hidden Page Account and activated it. For the first tests, simply check the Activated check box, start your browser and type into your browser's address bar the IP address of your power switch followed by the name of the hidden page.

Example: if the IP address of your Power Switch is 192.168.100.200, type in:
<http://192.168.100.201/hidden.htm> followed by <ENTER>.

Your Web browser will now display:

```
Hidden Page
21 Dec 2010 01:50:03
PSE554MA
Version: 2.1.0.0
```

Controlling Power Outlets

Only Power Outlets which have been selected can be controlled over the Hidden Page. To select Power Outlets, go to the "Settings/Accounts" page and edit the Hidden Page Account. In the Inputs/Outputs field, selected the Power Outlets you want to control and click on the Arrow button next to the Inputs/Outputs field. The selected Power outlets appear in the right field, click on Apply Change to validate the configuration.

Example: if you have selected all 4 power Outlets and the IP address of your Power Switch is 192.168.100.200, type in:
<http://192.168.100.201/hidden.htm> followed by <ENTER>.

Your Web browser will now display:

Hidden Page
21 Dec 2010 02:29:01
PSE554MA
Version: 2.1.0.0
M0:01=On
M0:02=On
M0:03=On
M0:04=On

Each Power Outlet support individually 3 commands: On, Off and Restart using following syntax:
M0:Ox=[ON], [OFF], [RESTART]

M0: ID of your Power Switch
Ox: Outlet number of your Power Switch
ON: ON command
OFF: OFF command
RESTART: Restart command

The first command must be preceded by a "?"
Commands can be concatenated using the character "&"
Commands can be specified in upper case, lower case or mixed case
The Hidden Page functionality also allows to control peripherals connected to the A-xBus (all sensors, Digital I/O Modules, Power Switches, Current probe...).

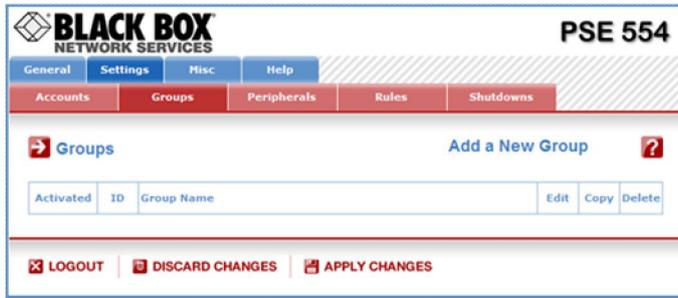
Example: if you want to switch to OFF the Power Outlet #1 and 3, type in:
<http://192.168.100.201/hidden.htm?M0:O1=OFF&M0:O3=OFF>

Your Web browser will now display:

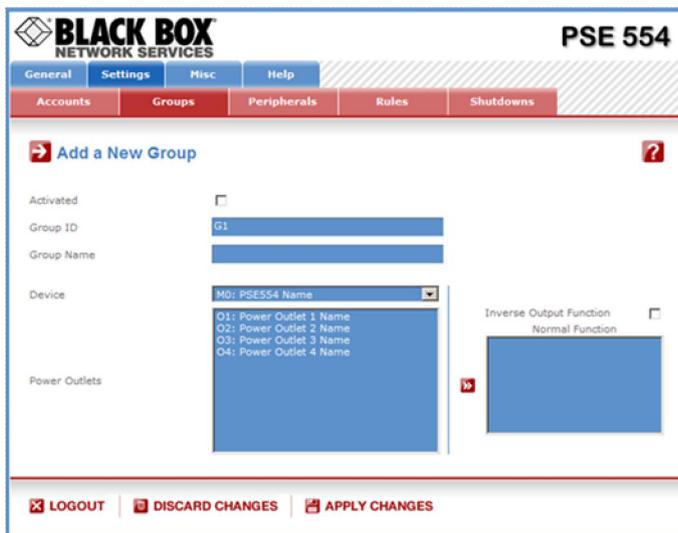
Hidden Page
21 Dec 2010 02:42:08
PSE554MA
Version: 2.1.0.0
M0:01=Off
M0:02=On
M0:03=Off
M0:04=On

3.3.6. Settings / Groups

This page is used to create, modify and delete groups of power outlets which can be controlled by the Power Switch Master 4-port. This functionality is particularly useful if you have to control the power supply of devices using redundant power supplies. You can create groups including several power outlets distributed on several Power Switch Satellite devices.



- To delete an existing group, click on "Delete" of the corresponding device.
- To add or remove power outlets to/from an existing group, click on "Edit" of the corresponding device.
- To deactivate a Group, uncheck the box "Activated" of the corresponding group.
- To add a new group, click on "Add a New Group" on the right side of the page. A new page appears, allowing you to set all parameters of the group.



Activated

This check box must be checked to activate the group. It enables to deactivate temporarily a group of Power outlets while keeping all its settings for a later use.

Group Id:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each group of power outlets. All the ID Codes used to identify groups start with the letter "G".

Group Name:

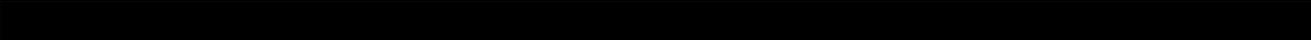
In this field, enter the name you want to give to the selected group. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!



Device:

In this drop-down list, choose a Power Switch from which you want to add power outlets to the selected group.


Power Outlets:

This field is used to add and remove power outlets to/from the group.

- To add power outlets to the group, press the Ctrl key and click on the power outlets of the Power Switch selected in the field above. The selected power outlets are marked dark blue and their names are listed at the right of the field "Power Outlets".
- To remove a power outlet from the group, press the Ctrl key and click on the power outlet you wish to remove.

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

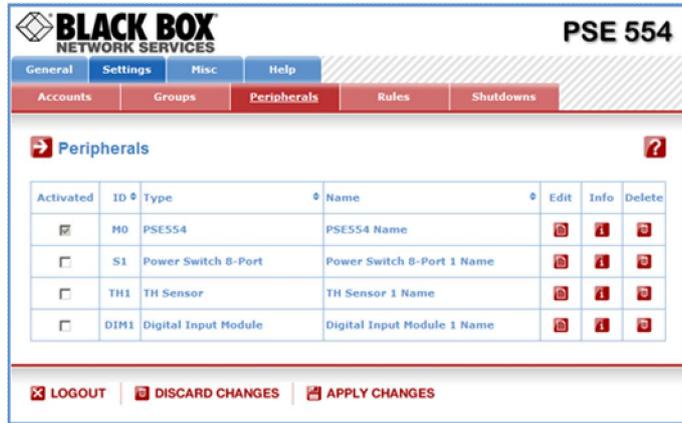
Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.7. Settings / Peripherals

The Peripherals page is used to enable and configure the xBus peripherals which have been connected to the Power Switch Master 4-port. This page is also very useful to give an overview of all the peripherals which are or have been connected to the Power Switch Master 4-port.



Up to 4 peripherals can be connected to the Power Switch Master 4-port.

This unit supports following peripherals:

- Environmental monitoring units:
 - temperature sensors (T/TDE/TDT T-Sensor)
 - temperature and humidity sensor (TRH-Sensor)
 - temperature and ambient light sensor (TL-Sensor)
 - temperature and proximity sensor (TP-Sensor)
 - temperature sensor (Tiny T-Sensor)
 - liquid detector (KIT LIQ DET)
- Controlled IEC power outlets:
 - power control units, 1 outlet (Satellite 1-port)
 - power control units, 8 outlets (Satellite 8-port)
 - power control units, 8 outlets and 2 16A inputs with current probe (Satellite/32 8-port)
- I/O modules:
 - extension module with 16 inputs for dry contacts (XBUS DIM)
 - extension module with 8 relay outputs (XBUS DOM)
- Manually actions triggering:
 - Push Button
- Power consumption management:
 - current probe, 1 outlet IEC (CP IEC)
 - consumption measuring: kWh, A, Volts (EnergyMeter)

You can connect an xBus peripheral to the RJ45 connector on the Power Switch 4-port or behind an xBus peripheral already connected to the Power Switch 4-port (Daisy Chain Connection).

Connecting an xBus peripheral to the Power Switch Master 4-port:

1. Set the dip switches of the xBus peripheral so that the selected I/O address does not conflict with another peripheral already connected to the xBus (see user's guide of the corresponding peripheral).



- Do NOT connect the xBus cable (and the power cable if need be) before setting its DIP switches
- Do NOT use the same address for two different xBus peripherals

2. Using a standard RJ45 Network cable, connect the xBus peripheral to the RJ45 xBus connector on the Power Switch Master 4-port or behind an xBus peripheral already connected to the Power Switch Master 4-port.

After connecting an xBus peripheral, you MUST enable it in the Peripherals Page:

1. Open your browser and log in to the Administrator's Configuration Page (default: <http://192.168.100.200/sysadmin.htm>)
2. Enter the administrator name and password (default for both = admin).
=> The home page appears.
3. Click on the Settings and then on the Peripherals Tab.

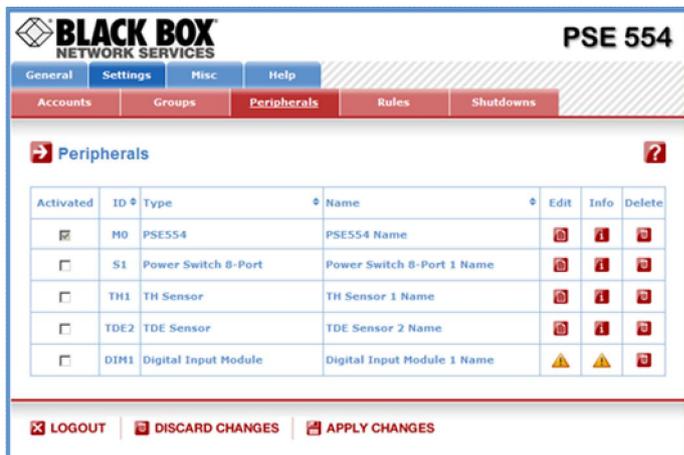
If the peripheral is properly connected to the Power Switch Master 4-port it will be automatically recognized and displayed on this page after a delay of 1 to 60 seconds. In this case, the colour of the corresponding Edit and Info symbol is red.

The Peripheral page is not automatically refreshed, so you need to refresh it by clicking the peripheral TAB again (or push [F5] or press <CTRL-R> on your keyboard if you use Internet Explorer or Mozilla Firefox).

Note

Problem / Troubleshooting

- If you choose any setting that is already in use by another xBus peripheral connected to the Power Switch Master 4-port, an address conflict occurs and the corresponding Edit and Info symbol of the previous connected peripheral will be replaced by a yellow warning triangle. In that case, disconnect your last connected peripheral, remove its power cable if need be, change the DIP switch settings to solve the address conflict and reconnect the peripheral. If the conflict is solved, all connected peripherals will appear on the Peripherals page and their Edit and Info Symbol will be red.
- The yellow warning triangle is also displayed to point out that a connected xBus peripheral can no longer be reached (for instance if a cable is disconnected).
- The Peripheral page is not automatically refreshed, so you need to refresh it by clicking the peripheral TAB again (or push [F5] or press <CTRL-R> on your keyboard if you use Internet Explorer or Mozilla Firefox).



The Peripherals page is used to configure all peripherals connected to the Power Switch 4-port.

- To activate a peripheral, check the box "Activated" of the corresponding device.
- To deactivate a peripheral, uncheck the box "Activated" of the corresponding device. Even if the device remains physically connected to the Power Switch Master 4-port, it will no longer be accessible by its authorized users.

The Power Switch Master 4-port cannot be deactivated.

- To remove a peripheral, click on the corresponding "Delete" button.

A peripheral cannot be deleted if it belongs to a group or a rule. In that case, you will first have to delete it from the group or the rule.

- To know the Firmware version of a device, click on the corresponding "Info" button.
- To configure or modify the settings of a device, click on the corresponding "Edit" button.

Note

Note

3.3.7.1. Settings / Peripherals - devices labelling

This page enables to label the device, the 8 power outlets of the Power Switch Master 4-port and the shutdown function. Names of up to 32 alphanumeric characters in length are supported and appear in log files, Syslog messages and SNMP traps to avoid confusions.

1. Open your browser and log in to the Administrator's Page, (ex. <http://192.168.100.200/sysadmin.htm>).
2. Enter the administrator name and password (default for both = admin). The home page appears.
3. Click on the Settings Tab, on the Peripherals Tab and then on the Edit symbol. Following new page appears, allowing you to define the labels.

ID	Designation	Name	Activated
M0	Device	<input type="text" value="PSE554 Name"/>	<input checked="" type="checkbox"/>

ID	Designation	Name	Default Power Up	Power Up Delay (sec)	Function Delay (sec)
O1	Power Outlet 1	<input type="text" value="Power Outlet 1 Name"/>	Last Sta	0	10
O2	Power Outlet 2	<input type="text" value="Power Outlet 2 Name"/>	Last Sta	0	10
O3	Power Outlet 3	<input type="text" value="Power Outlet 3 Name"/>	Last Sta	0	10
O4	Power Outlet 4	<input type="text" value="Power Outlet 4 Name"/>	Last Sta	0	10

ID	Designation	Name
SD1	Shutdown Function 1	<input type="text" value="ShutDown 1 Name"/>

ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each device.

- M0 identifies the Power Switch Master 4-port device,

Name:

In these fields, enter the name you want to give to the selected device. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Activated

This check box must be checked to activate the device and enables to deactivate it temporarily while keeping all its settings for a later use.

Power Outlets:

ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each Power outlet.

- O followed by a number identifies each Power outlet

Create new rule:

Click on this button to create a new rule.

Name:

In this field, enter the name you want to give to each power outlet of the Power Switch. The name can be from 1 to 32 characters long and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Default Power-Up:

In the drop-down lists, choose for each power outlet the default status to apply after power-up.

You can choose between:

- "On" if you want the corresponding power outlet to be always switched On after power-up.
- "Off" if you want the corresponding power outlet to be always switched Off after power-up.
- "Last Status" if you want that the corresponding power outlet takes again the state it was in before power failure.

Power up delay:

In this field, enter the power up delay you want to define for each power outlet. Power up delay means the delay before the power outlet will take the defined status after power up. The delay can be set between 1 and 65535 seconds, the value 0 means that no delay has to be applied after power up.

Function delay:

In this field, enter the delay you want to define before the execution of a function (for example Restart function of an outlet).

Shutdowns Functions

ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify the Shutdown Function.

- SD1 identifies the Shutdown Function 1.



Create a new Shutdown Association:

Click on this button to create a new Shutdown Association.

Name:

In this field, enter the name you want to give to the Shutdown function. The name can be from 1 to 32 characters long and can contain alphanumeric characters.

Do not use quotes or special characters in labels!



Click "Apply Changes" at the bottom of the page to save changes.

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.7.2. Settings / Peripherals - Power Switch Satellite



Power Switch Satellite 8-port or 1-port can be attached to the Power Switch*4-port to remotely turn electrical devices on/off or reboot them.

You can connect a Power Switch Satellite to the RJ45 A-xBus connector on the Power Switch Master 4-port or behind an xBus peripheral already connected to the Power Switch (Daisy Chain Connection).

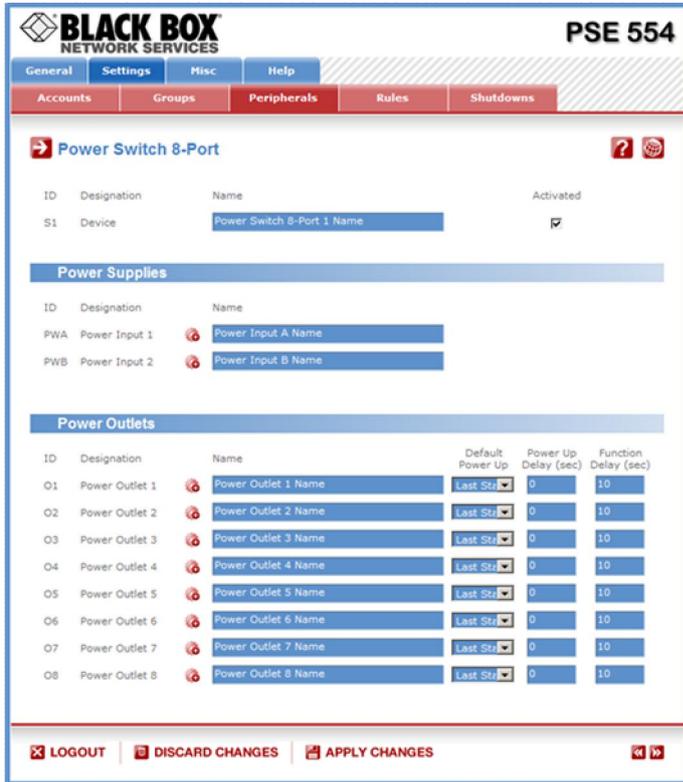
To connect a Power Switch to the Power Switch Master 4-port, use following procedure:

1. Set the dip switches of the Power Switch so that the selected I/O address does not conflict with another Power Switch already installed (see user's guide of the corresponding Power Switch).
- **Do NOT connect the xBus cable and the power cable before setting its DIP switches,**
- **Do NOT use the same address for two different Power Switch devices.**
2. Using a standard RJ45 network cable, connect the Power Switch to the A-xBus connector on the Power Switch Master or behind another xBus peripheral already connected to the Power Switch.
3. Connect the power cable(s) to your Power Switch device.



To configure the Power Switch, use following Log in procedure:

1. Open your browser and log in to the Administrator's Configuration Page, (ex. <http://192.168.100.200/sysadmin.htm>).
2. Enter the administrator name and password (default for both = admin). The home page appears.
3. Click on the Settings and then on the Peripherals Tab.



If the Power Switch is properly connected to the Power Switch Master 4-port it will be automatically recognized and displayed on this page after a delay of up to 60 seconds. In this case, the colour of the corresponding Edit and Info symbol is red.



The Peripheral page is not automatically refreshed, so you need to refresh it by clicking the peripheral TAB again (or push [F5] or press <CTRL-R> on your keyboard if you use Internet Explorer or Mozilla Firefox).

Problem / Troubleshooting

- *If you choose any setting that is already in use by another Power Switch connected to the Power Switch Master 4-port, a conflict occurs and the corresponding Edit and Info symbol of the previous connected Power Switch will be changed to black. In that case, disconnect your last connected Power Switch, remove its power cable, change the DIP switch settings to solve the address conflict and reconnect the Power Switch again. If the conflict is solved, all connected Power Switches will now appear on the Peripherals page and their Edit and Info Symbol will be red.*
- *The Peripheral page is not automatically refreshed, so you need to refresh it by clicking the peripheral TAB again (or push [F5] or press <CTRL-R> on your keyboard if you use Internet Explorer or Mozilla Firefox).*

- To configure or modify the settings of the connected Power Switch device, click on the corresponding "Edit" button in the Peripherals page. A new page appears, allowing you to set all the parameters of the Power Switch Satellite device.

BLACK BOX NETWORK SERVICES PSE 554

General Settings Misc Help

Accounts Groups Peripherals Rules Shutdowns

Power Switch 8-Port

ID	Designation	Name	Activated
S1	Device	Power Switch 8-Port 1 Name	<input checked="" type="checkbox"/>

Power Supplies

ID	Designation	Name
PWA	Power Input 1	Power Input A Name
PWB	Power Input 2	Power Input B Name

Power Outlets

ID	Designation	Name	Default Power Up	Power Up Delay (sec)	Function Delay (sec)
O1	Power Outlet 1	Power Outlet 1 Name	Last Sta	0	10
O2	Power Outlet 2	Power Outlet 2 Name	Last Sta	0	10
O3	Power Outlet 3	Power Outlet 3 Name	Last Sta	0	10
O4	Power Outlet 4	Power Outlet 4 Name	Last Sta	0	10
O5	Power Outlet 5	Power Outlet 5 Name	Last Sta	0	10
O6	Power Outlet 6	Power Outlet 6 Name	Last Sta	0	10
O7	Power Outlet 7	Power Outlet 7 Name	Last Sta	0	10
O8	Power Outlet 8	Power Outlet 8 Name	Last Sta	0	10

LOGOUT DISCARD CHANGES APPLY CHANGES

ID:

The Power Switch 4-port automatically creates an ID Code to clearly identify each connected Power Switch Satellite.

- S followed by a number identifies the Power Switch Satellite unit,

Name:

In this field, enter the name you want to give to the selected Power Switch. The name can be from 1 to 32 characters long and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Activated

This check box must be checked to activate the device and enables to deactivate it temporarily while keeping all its settings for a later use.



Analog Inputs:

Only for Satellite /32

ID:

The Power Switch 4-port automatically creates an ID Code to clearly identify each power input(s).

- I followed by "A" or "B" identifies the current input A and B of the Power Switch Satellite/32,

Create new rule:

Click on this button to create a new rule.

Name:

In this field, enter the name you want to give to the two current inputs A and B. The name can be from 1 to 32 characters long and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Unit:

In this field enter the unit of measurement you want to be displayed.

Graph:

Check this box if you want a display of the analog inputs.

Period (minutes):

In this field enter the period between two measurements.



Power Supplies

ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each Power supply.

- PWA identifies the Power Input A,
- PWB identifies the Power Input B.



Create new rule:

Click on this button to create a new Power Supply rule.

Name:

In these fields, enter the name you want to give to the selected Power supply. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!



Power Outlets:

ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each Power outlet.

- O followed by a number identifies each Power outlet



Create new rule:

Click on this button to create a new rule.

Name:

In these fields, enter the name you want to give to the each Power Outlet of the Power Switch Satellite. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!



Default Power-Up:

In the drop-down lists, choose for each power outlet the default status to apply after power-up.

You can choose between:

- "On" if you want the corresponding power outlet to be always switched On after power-up.
- "Off" if you want the corresponding power outlet to be always switched Off after power-up.
- "Last Status" if you want that the corresponding power outlet takes again the state it was in before power failure.

Power up delay:

In this field, enter the power up delay you want to define for each power outlet. Power up delay means the delay before the power outlet will take the defined status after power up. The delay can be set between 1 and 65535 seconds, the value 0 means that no delay has to be applied after power up.

Function delay:

In this field, enter the delay you want to define before the execution of a function (for example Restart function of an outlet).

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.7.3. Settings / Peripherals - Analog inputs

3.3.7.3.1. Temperature, temp. and humidity, temp. and ambient light sensors



Temperature, TDE temperature, temperature and humidity, temperature and ambient light sensors can be attached to the Power Switch Master 4-port to monitor environmental conditions.

You can connect a sensor to the RJ45 connector on the Power Switch 4-port or behind an xBus peripheral already connected to the Power Switch Master 4-port (Daisy Chain Connection).

To connect a sensor to the Power Switch Master 4-port, use following procedure:

1. Set the dip switches of the sensor so that the selected I/O address does not conflict with another sensor already installed (see user's guide of the corresponding sensor).

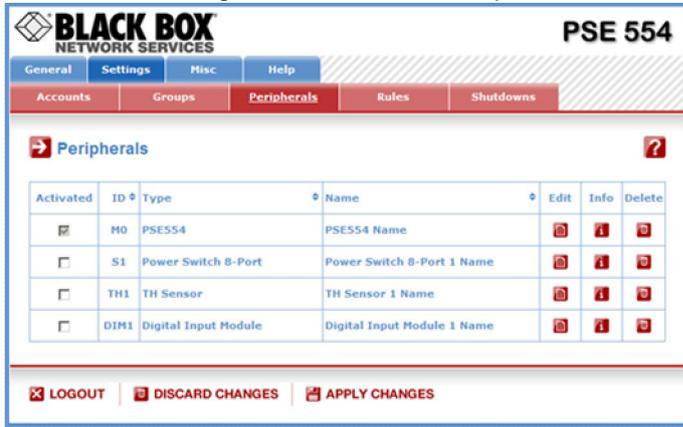
- **Do NOT connect the xBus cable before setting its DIP switches**
- **Do NOT use the same address for two different sensors**



2. Using a standard RJ45 network cable, connect the sensor to the RJ45 xBus connector on the Power Switch 4-port or behind another xBus peripheral already connected to the Power Switch Master 4-port.

To configure the sensor, use following Log in procedure:

1. Open your browser and log in to the Administrator's Configuration Page, (ex. <http://192.168.100.200/sysadmin.htm>).
2. Enter the administrator name and password (default for both = admin). The home page appears.
3. Click on the Settings and then on the Peripherals Tab.



If the sensor is properly connected to the Power Switch Master 4-port it will be automatically recognized and displayed on this page after a delay of up to 60 seconds. In this case, the colour of the corresponding Edit and Info symbol is red.

The Peripheral page is not automatically refreshed, so you need to refresh it by clicking the peripheral TAB again (or push [F5] or press <CTRL-R> on your keyboard if you use Internet Explorer or Mozilla Firefox).



Problem / Troubleshooting

- If you choose any setting that is already in use by another sensor connected to the Power Switch Master 4-port, a conflict occurs and the corresponding Edit and Info symbol of the previous connected sensor will be changed to black. In that case, disconnect your last connected sensor, change the DIP switch settings to solve the address conflict and reconnect the sensor again. If the conflict is solved, all connected sensors will now appear on the Peripherals page and their Edit and Info Symbol will be red.
- The Peripheral page is not automatically refreshed, so you need to refresh it by clicking the peripheral TAB again (or push [F5] or press <CTRL-R> on your keyboard if you use Internet Explorer or Mozilla Firefox).

- To configure or modify the settings of a sensor, click on the corresponding "Edit" button in the Peripherals page. A new page appears, allowing you to set all the parameters of the temperature (T), temperature and humidity (TH) or temperature and ambient light (TA) sensors.

The screenshot shows the 'TDE Sensor' configuration page in the BLACK BOX NETWORK SERVICES PSE 554 interface. The page is divided into several sections:

- General Information:** A table with columns for ID, Designation, Name, and Activated. The 'TDE2 Device' row shows 'TDE Sensor 2 Name' in the Name field and a checked 'Activated' checkbox.
- Analog Inputs:** A section with a table for configuration. The 'T1 Analog Input 1' row shows 'Temperature Input Name' in the Name field, '°C' in the Unit field, '22 °C' in the Current Value field, and '0' in the Calibration field. A 'Default values' button is present.
- Digital Inputs:** A section with a table for configuration. The 'D11 Digital Input 1' row shows 'Digital Input 1 Name' in the Name field. The 'EOL2 Digital Input 2' row shows 'End Of Line 2 Name' in the Name field.
- Footer:** Buttons for LOGOUT, DISCARD CHANGES, and APPLY CHANGES.

Sensor ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each connected sensor.

- T followed by a number identifies each temperature sensor,
- TDE followed by a number identifies each temperature sensor with 1 digital input,
- TDT followed by a number identifies each temperature sensor with 2 digital inputs,
- TH followed by a number identifies each temperature and humidity sensor,
- TP followed by a number identifies each temperature and proximity sensor,
- TA followed by a number identifies each temperature and ambient light sensor.

Sensor Name:

In this field, enter the name you want to give to the selected sensor. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Activated

This check box must be checked to activate the sensor and enables to deactivate it temporarily while keeping all its settings for a later use.

Analog Inputs

ID

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each Analog input.

- T followed by a number identifies each temperature value

Create new rule:

Click on this button to create a new rule.

Name:

In this field enter the name you want to give to the analog inputs.

Unit:

In this field enter the unit of measurement you want to be displayed (°C, %RH, Lux).

Current value:

Display the current value.

Calibration:

In this field set the value of the calibration.



Digital Inputs



Only for TDE /TDT temperature sensor and TP temperature and proximity sensor.

ID

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each Digital input.

- DI followed by a number identifies each Digital Input,
- EOL followed by a number identifies the End Of Line input.



Create new rule:

Click on this button to create a new rule.

Name:

In this field enter the name you want to give to the digital input.

Do not use quotes or special characters in labels!



LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.7.3.2. AC Current probe



AC Current probes can be attached to the Power Switch*4-port to monitor the current consumption of an electrical device (PC, server, light, printer...) and trigger actions if predefined limits are exceeded.

You can connect an AC Current probe to each of the RJ45 A-xbus connector on the Power Switch 4-port or behind an xBus peripheral already connected to the Power Switch 4-port (Daisy Chain connection).

To connect an AC Current probe to the Power Switch Master 4-port, use following procedure:

1. Set the dip switches of the AC Current probe so that the selected I/O address does not conflict with another AC Current probe already installed (see user's guide of the AC Current probe)



- Do NOT connect the xBus cable and the power cable before setting its DIP switches
- Do NOT use the same address for two different AC Current probes

2. Using a standard RJ45 network cable, connect the AC Current probe to the RJ45 A-xBus connector on the Power Switch Master 4-port or behind another AC Current probe already connected to the Power Switch 4-port.
3. Connect the power cable to your device

To configure the Current Probe, use following Log in procedure:

1. Open you browser and log in to the Administrator's Configuration Page, (ex. <http://192.168.100.200/sysadmin.htm>).
2. Enter the administrator name and password (default for both = admin). The home page appears.
3. Click on the Settings and then on the Peripherals Tab

If the AC Current probe is properly connected to the Power Switch Master 4-port it will be automatically recognized and displayed on this page after a delay of 1 to 60 seconds. In this case, the colour of the corresponding Edit and Info symbol is red.



The Peripheral page is not automatically refreshed, so you need to refresh it by clicking the peripheral TAB again (or push [F5] or press <CTRL-R> on your keyboard if you use Internet Explorer or Mozilla Firefox).

Problem / Troubleshooting

- *If you choose any setting that is already in use by another AC Current probe connected to the Power Switch Master 4-port, a conflict occurs and the corresponding Edit and Info symbol of the previous connected AC Current probe will be changed to black. In that case, disconnect your last connected AC Current probe, remove its power cable, change the DIP switch settings to solve the address conflict and reconnect the AC Current probe again. If the conflict is solved, all connected AC Current probes will now appear on the Peripherals page and their Edit and Info Symbol will be red.*
- *The Peripheral page is not automatically refreshed, so you need to refresh it by clicking the peripheral TAB again (or push [F5] or press <CTRL-R> on your keyboard if you use Internet Explorer or Mozilla Firefox).*

4. To configure or modify the settings of an AC Current Probe, click on the corresponding "Edit" button in the Peripherals page. A new page appears, allowing you to set all the parameters of the connected AC Current Probe.

ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each Current Probe.

- CP followed by a number identifies each current probe

Name:

In this field, enter the name you want to give to the selected current probe. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Activated

This check box must be checked to activate the device and enables to deactivate it temporarily while keeping all its settings for a later use.

Analog Inputs

ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each analog input.

- I1 identifies the current analog input.

 **Create new rule:**

Click on this button to create a new rule.

Name:

In this field, enter the name you want to give to the analog input. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Unit:

In this field enter the unit of measurement you want to be displayed.

Graph:

Check this box if you want a display of the analog inputs.

Period (minutes):

In this field enter the period between two measurements.

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.



3.3.7.3.3. EnergyMeter



EnergyMeters can be attached to the Power Switch Master 4-port to monitor the energy consumption (kWh) and the current consumption (Amp RMS) of eight electrical devices (PC, server, light, printer...) and trigger actions if predefined limits are exceeded. The EnergyMeter is also able to monitor the Input voltage of both 16 Amps power inputs.

You can connect an EnergyMeter to the RJ45 A-xBus connector located on the Power Switch Master 4-port or behind an xBus peripheral already connected to the Power Switch Master 4-port (Daisy Chain connection).

To connect an EnergyMeter to the Power Switch Master 4-port, use following procedure:

1. Set the dip switches of the EnergyMeter so that the selected I/O address does not conflict with another EnergyMeter already installed (see user's guide of the EnergyMeter).

**- Do NOT connect the xBus cable and the Power cable(s) before setting its DIP switches.
- Do NOT use the same address for two different AC Current probes.**

2. Using a standard RJ45 Network cable, connect the EnergyMeter to the RJ45 A-xBus connector on the Power Switch 4-port or behind another xBus peripheral already connected to the Power Switch Master 4-port.
3. Connect the power cable(s) to your EnergyMeter.

To configure the EnergyMeter, use following Log in procedure:

1. Open your browser and log in to the Administrator's Configuration Page, (ex. <http://192.168.100.200/sysadmin.htm>).
2. Enter the administrator name and password (default for both = admin). The home page appears.
3. Click on the Settings and then on the Peripherals Tab.

If the EnergyMeter is properly connected to the Power Switch Master 4-port it will be automatically recognized and displayed on this page after a delay of 1 to 60 seconds. In this case, the colour of the corresponding Edit and Info symbol is red.

The Peripheral page is not automatically refreshed, so you need to refresh it by clicking the peripheral TAB again (or push [F5] or press <CTRL-R> on your keyboard if you use Internet Explorer or Mozilla Firefox).

Problem / Troubleshooting

- *If you choose any setting that is already in use by another EnergyMeter connected to the Power Switch Master 4-port, a conflict occurs and the corresponding Edit and Info symbol of the previous connected EnergyMeter will be changed to black. In that case, disconnect your last connected EnergyMeter, remove its power cable(s), change the DIP switch settings to solve the address conflict and reconnect the EnergyMeter again. If the conflict is solved, all connected EnergyMeter will now appear on the Peripherals page and their Edit and Info Symbol will be red.*
- *The Peripheral page is not automatically refreshed, so you need to refresh it by clicking the peripheral TAB again (or push [F5] or press <CTRL-R> on your keyboard if you use Internet Explorer or Mozilla Firefox).*



4. To configure or modify the settings of the EnergyMeter, click on the corresponding "Edit" button in the Peripherals page. A new page appears, allowing you to set all the parameters of the Analog Inputs. A new page appears, allowing you to set all the parameters of the EnergyMeter.

ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each Energy Meter. All the ID Codes used to identify an Energy Meter start with the characters "EM" followed by a number.

Name:

In this field, enter the name you want to give to the selected Energy Meter. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Activated

This check box must be checked to activate the device and enables to deactivate it temporarily while keeping all its settings for a later use.

Analog Inputs

ID

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each Analog input.

- E followed by a number identifies each Real Energy value
- I followed by a number identifies each Current value
- PW followed by A or B and a number identifies the voltage value of the 2 power inputs.



Create new rule:

Click on this button to create a new rule.

Name:

In this field enter the name you want to give to the analog input.

Do not use quotes or special characters in labels!

Unit:

In this field enter the unit of measurement you want to be display (A, kWh, V...).

Graph:

Check this box if you want a display of the analog inputs.

Period (minutes):

In this field enter the period between two measurements.

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.



3.3.7.4. Settings / Peripherals - Digital Inputs

Digital Input Modules, Push Buttons or Temperature and Proximity sensors can be attached to the Power Switch Master 4-port to monitor environmental conditions.

You can connect them to the RJ45 A-xBus connector on the Power Switch Master 4-port or behind an xBus peripheral already connected to the Power Switch Master 4-port (Daisy Chain Connection).

3.3.7.4.1. Digital Input Modules



Digital Input Modules with 16 inputs for dry contacts (door contacts, smoke and water detectors...) can be attached to the Power Switch Master 4-port to monitor environmental conditions.

To connect a Digital Input Module to the Power Switch Master 4-port, use following procedure:

1. Set the dip switches on the bottom of the case so that the selected I/O address does not conflict with another Digital Input Module already installed (see user's guide of the Digital Input Module).



- Do NOT connect the xBus cable and the Power adapter(s) before setting its DIP switches
- Do NOT use the same address for two different Digital Input Modules

2. Using a standard RJ45 network cable, connect the Digital Input Module to the RJ45 A-xBus connector on the Power Switch Master 4-port or behind another xBus peripheral already connected to the Power Switch 4-port.
3. Connect the power adapter(s) to your Digital Input Module.

To configure the Digital Input Module, use following Log in procedure:

1. Open your browser and log in to the Administrator's Configuration Page, (ex. <http://192.168.100.200/sysadmin.htm>).
2. Enter the administrator name and password (default for both = admin). The home page appears.
3. Click on the Settings and then on the Peripherals Tab.

If the Digital Input Module is properly connected to the Power Switch Master 4-port it will be automatically recognized and displayed on this page after a delay of up to 60 seconds. In this case, the colour of the corresponding Edit and Info symbol is red.



The Peripheral page is not automatically refreshed, so you need to refresh it by clicking the peripheral TAB again (or push [F5] or press <CTRL-R> on your keyboard if you use Internet Explorer or Mozilla Firefox).

Problem / Troubleshooting

- If you choose any setting that is already in use by another Digital Input Module connected to the Power Switch Master 4-port, a conflict occurs and the corresponding Edit and Info symbol of the previous connected Digital Input Module will be changed to black. In that case, disconnect your last connected Digital Input Module, remove its power adapter(s), change the DIP switch settings to solve the address conflict and reconnect it again. If the conflict is solved, all connected devices will now appear on the Peripherals page and their Edit and Info Symbol will be red.

- The Peripheral page is not automatically refreshed, so you need to refresh it by clicking the peripheral TAB again (or push [F5] or press <CTRL-R> on your keyboard if you use Internet Explorer or Mozilla Firefox).

To configure or modify the settings of the Digital inputs, click on the corresponding "Edit" button in the Peripherals page.

A new page appears, allowing you to set all the parameters of the Digital Inputs.

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General Settings Misc Help

Accounts Groups Peripherals Rules Shutdowns

Digital Input Module

ID	Designation	Name	Activated
DIM1	Device	Digital Input Module 1 Name	<input checked="" type="checkbox"/>

Power Supplies

ID	Designation	Name
PWA	Power Input 1	Power Input A Name
PWB	Power Input 2	Power Input B Name

Digital Inputs

ID	Designation	Name
D11	Digital Input 1	Digital Input 1 Name
D12	Digital Input 2	Digital Input 2 Name
D13	Digital Input 3	Digital Input 3 Name
D14	Digital Input 4	Digital Input 4 Name
D15	Digital Input 5	Digital Input 5 Name
D16	Digital Input 6	Digital Input 6 Name
D17	Digital Input 7	Digital Input 7 Name
D18	Digital Input 8	Digital Input 8 Name
D19	Digital Input 9	Digital Input 9 Name
D110	Digital Input 10	Digital Input 10 Name
D111	Digital Input 11	Digital Input 11 Name
D112	Digital Input 12	Digital Input 12 Name
D113	Digital Input 13	Digital Input 13 Name
D114	Digital Input 14	Digital Input 14 Name
D115	Digital Input 15	Digital Input 15 Name
D116	Digital Input 16	Digital Input 16 Name

LOGOUT DISCARD CHANGES APPLY CHANGES

ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each connected Digital Input Module.

- DIM followed by a number identifies each Digital Input Module

Name:

In this field, enter the name you want to give to the Digital Input Module. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Activated

This check box must be checked to activate the device and enables to deactivate it temporarily while keeping all its settings for a later use.



Power Supplies:

ID

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each power input.

- PW followed by "A" or "B" identifies power supply input A and B of each Digital Input Module



Create new rule:

Click on this button to create a new rule.

Name

In this field, enter the name you want to give to the two power supplies "PWA" and "PWB". The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Digital Inputs

ID

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each d input.

- DI followed by a number between 1 and 16 identifies each digital input of the module



Create new rule:

Click on this button to create a new rule.

Name:

In this fields, enter the name you want to give to each Digital Input. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.7.4.2. Temperature and proximity sensors



Temperature and proximity sensors can be attached to the Power Switch*4-port to detect presence of a target and monitor temperature change.



The IR proximity sensor acts as a digital input.

You can connect a sensor to the RJ45 A-xBus connector on the Power Switch Master 4-port or behind an xBus peripheral already connected to the Power Switch Master 4-port (Daisy Chain Connection).

To connect a sensor to the Power Switch Master 4-port, use following procedure:

1. Set the dip switches of the sensor so that the selected I/O address does not conflict with another sensor already installed (see user's guide of the corresponding sensor).



- Do NOT connect the xBus cable before setting its DIP switches.
- Do NOT use the same address for two different sensors.

2. Using a standard RJ45 network cable, connect the sensor to the RJ45 xBus connector on the Power Switch 4-port or behind another xBus peripheral already connected to the Power Switch Master 4-port.

To configure the sensor, use following Log in procedure:

1. Open you browser and log in to the Administrator's Configuration Page, (ex. <http://192.168.100.200/sysadmin.htm>).
2. Enter the administrator name and password (default for both = admin). The home page appears.
3. Click on the Settings and then on the Peripherals Tab.

If the sensor is properly connected to the Power Switch Master 4-port it will be automatically recognized and displayed on this page after a delay of up to 60 seconds. In this case, the colour of the corresponding Edit and Info symbol is red.



The Peripheral page is not automatically refreshed, so you need to refresh it by clicking the peripheral TAB again (or push [F5] or press <CTRL-R> on your keyboard if you use Internet Explorer or Mozilla Firefox).

Problem / Troubleshooting

- If you choose any setting that is already in use by another sensor connected to the Power Switch Master 4-port, a conflict occurs and the corresponding Edit and Info symbol of the previous connected sensor will be changed to black. In that case, disconnect your last connected sensor, change the DIP switch settings to solve the address conflict and reconnect the sensor again. If the conflict is solved, all connected sensors will now appear on the Peripherals page and their Edit and Info Symbol will be red.
- The Peripheral page is not automatically refreshed, so you need to refresh it by clicking the peripheral TAB again (or push [F5] or press <CTRL-R> on your keyboard if you use Internet Explorer or Mozilla Firefox).

To configure or modify the settings of a sensor, click on the corresponding "Edit" button in the Peripherals page. A new page appears, allowing you to set all the parameters of the temperature & proximity (TP) sensors.

ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each connected sensor.

- TP followed by a number identifies each temperature and proximity sensor,

Sensor Name:

In this field, enter the name you want to give to the selected sensor. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Activated

This check box must be checked to activate the sensor and enables to deactivate it temporarily while keeping all its settings for a later use.

Analog Inputs

ID

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each Analog input.

- T followed by a number identifies each temperature value



Create new rule:

Click on this button to create a new rule.

Name:

In this field enter the name you want to give to the analog inputs.

Do not use quotes or special characters in labels!

Unit:

In this field enter the unit of measurement you want to be displayed (°C, %RH, Lux).

Current value:

Display the current value.

Calibration:

In this field set the value of the calibration.

Digital Inputs

ID

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each Digital input.

- PS followed by a number identifies the Proximity Input,



Create new rule:

Click on this button to create a new rule.

Name:

In this field enter the name you want to give to the digital input.

Do not use quotes or special characters in labels!

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.7.4.3. Push Button



Push buttons can be attached to the Power Switch Master 4-port to trigger manually pre-programmed actions.

You can connect a Push Button to the RJ45 A-xBus connector on the Power Switch 4-port or behind an xBus peripheral already connected to the Power Switch Master 4-port (Daisy Chain Connection).

To connect a Push button to the Power Switch Master 4-port, use following procedure:

1. Set the dip switches of the Push button so that the selected I/O address does not conflict with another Push button or another Digital Input Module already installed (see user's guide of the Push button).



- Do NOT connect the xBus cable before setting its DIP switches.
- Do NOT use the same address for two different Push buttons.

2. Using a standard RJ45 network cable, connect the Push button to the RJ45 xBus connector on the Power Switch Master 4-port or behind another xBus peripheral already connected to the Power Switch Master 4-port.

To configure the Push button, use following Log in procedure:

1. Open you browser and log in to the Administrator's Configuration Page, (ex. <http://192.168.100.200/sysadmin.htm>).
2. Enter the administrator name and password (default for both = admin). The home page appears.
3. Click on the Settings and then on the Peripherals Tab.

If the Push button is properly connected to the Power Switch Master 4-port it will be automatically recognized and displayed on this page after a delay of 1 to 60 seconds. In this case, the colour of the corresponding Edit and Info symbol is red.



The Peripheral page is not automatically refreshed, so you need to refresh it by clicking the peripheral TAB again (or push [F5] or press <CTRL-R> on your keyboard if you use Internet Explorer or Mozilla Firefox).

Problem / Troubleshooting

- *If you choose any setting that is already in use by another Push button or another Digital Input Module connected to the Power Switch Master 4-port, a conflict occurs and the corresponding Edit and Info symbol of a previous connected Push button or Digital Input Module will be changed to black. In that case, disconnect your last connected Push button, change the DIP switch settings to solve the address conflict and reconnect the Push button again. If the conflict is solved, all connected devices will now appear on the Peripherals page and their Edit and Info Symbol will be red.*
- *The Peripheral page is not automatically refreshed, so you need to refresh it by clicking the peripheral TAB again (or push [F5] or press <CTRL-R> on your keyboard if you use Internet Explorer or Mozilla Firefox).*

To configure or modify the settings of the Push Button, click on the corresponding "Edit" button in the Peripherals page. A new page appears, allowing you to set all the parameters of the connected Push Buttons.

ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each Push button.

- PB followed by a number identifies each Push button

Name:

In this field, enter the name you want to give to the selected Push button. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Activated

This check box must be checked to activate the push button and enables to deactivate it temporarily while keeping all its settings for a later use.

Digital Inputs

Sensor ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each action.

- SP1 identifies each "Short Push" action (during less than 1 second)
- LP2 identifies each "Long Push" action (during more than 3 seconds)



Create new rule:

Click on this button to create a new rule.

Name:

In these fields enter the name of the two type of action (Short Push or Long Push).

Do not use quotes or special characters in labels!

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

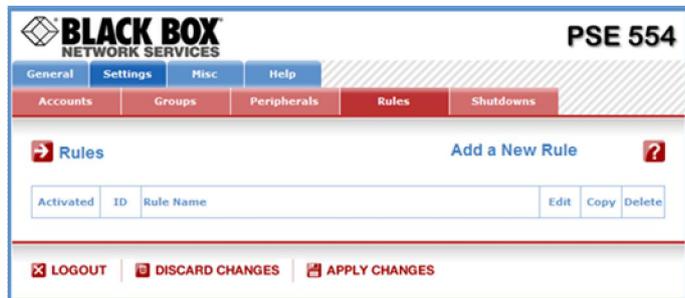
Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.8. Settings / Rules

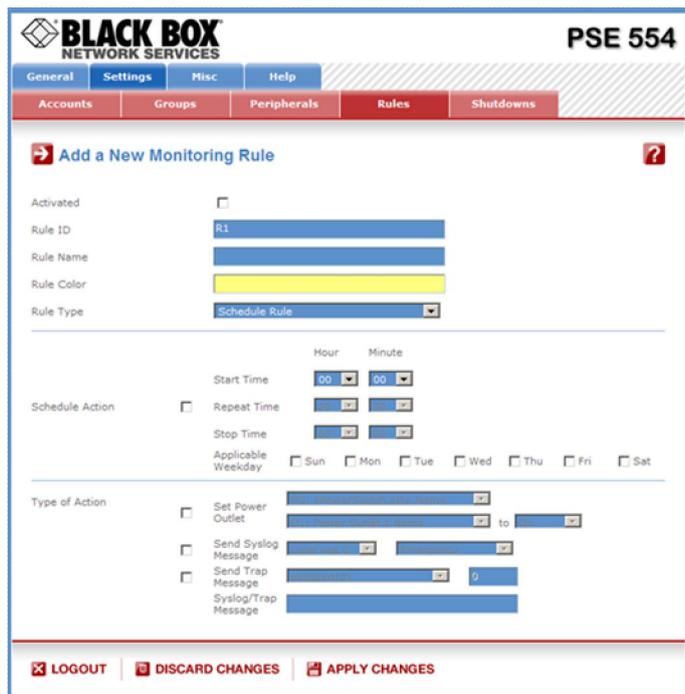
Rules are used to control actions according to a specific event. For example, you can define a rule to switch a power outlet OFF and send an alert message using different methods like SNMP or Syslog when a temperature, humidity, ambient light or current exceeds a predefined value or when a contact is open.



- To remove an existing rule, click on "Delete" of the corresponding rule.
- To modify a rule, click on "Edit" of the corresponding rule.

This page is used to create, modify and delete rules.

- To add a new rule, click on "Add a New Rule" on the right side of the page. A new page appears, allowing you to set all the parameters of the rule.



A total of 32 rules can be created and there are 7 different types of rules:

1. Schedule Rule:

This rule is used to trigger user-specified actions according to a defined time table.

This rule can be used to:

- execute **once** defined actions at specified time and weekday(s). In this case you must only specify the start time and the weekday(s),
- execute **repeatedly** defined actions during a given time. In this case you must specify the start time, the interval on which the rule has to be repeated and the end time.

Examples:

- The rule could be used to restart a power outlet (or a group of power outlets) at regular interval during a given time.
- The rule could be used to send sensor values over SNMP or a Syslog message at regular interval during a given time.

2. Timer Rule:

This rule can be used to trigger user-specified actions according to a defined time table.

This rule can be used to switch On or Off a power outlet (or a group of power outlets) or a digital output at specified time and weekday(s) for a specified time. You must define the start time, the weekday(s) and the stop time.

Example:

- The rule could be used to switch On a device every Monday and Friday from 8:00 AM (Start Time) and switch it automatically off every Monday and Friday at 05:00 PM (Stop Time)

3. Ping Monitoring Rule:

This rule is used to control actions according to the response to a Ping command.

This rule can be used to check if a computer or any IP device is connected to the network. If the host doesn't reply, the Power Switch can automatically restart the powered device.

4. Scan Monitoring Rule:

This rule is used to control actions according to the response to a Scan command.

This rule can be used to check if a specific protocol is available on a. If the connection is not possible, Power Switch can automatically restart the powered device.

5. Power Supply Monitoring Rule:

This rule is used to control actions according to the state of the power supplies of the Power Switch Master and its peripherals like the Power Switch Satellite and the Digital Input Module.

6. Digital Input Monitoring Rule:

This rule is used to control actions according to the state of a dry contact connected to a the Digital Input Module, to a Digital Input Module, Proximity Sensor or a Push Button connected over the xBus to the Power Switch.

7. Analog Input Monitoring Rule:

This rule is used to control actions when an analog input (temperature, humidity, ambient light, current...) exceeds a predefined value.

3.3.8.1. Settings / Rules - Schedule Rule

This rule can be used to trigger user-specified actions according to a defined time table. The schedule rule is weekday based and the administrator can declare, for each weekday, a start time, an end time and after what time the rule should be repeated.

The schedule rule can also be used to send status information or sensor values on specified weekdays at regular interval.

The screenshot shows the 'Add a New Monitoring Rule' configuration page in the Black Box Network Services PSE 554 web interface. The page is organized into several sections:

- General Information:** Includes an 'Activated' checkbox, 'Rule ID' (R1), 'Rule Name', 'Rule Color' (yellow), and 'Rule Type' (Schedule Rule).
- Schedule Action:** Features a 'Schedule Action' checkbox, 'Start Time' (Hour: 00, Minute: 00), 'Repeat Time', and 'Stop Time' dropdown menus. Below this is the 'Applicable Weekday' section with checkboxes for Sun, Mon, Tue, Wed, Thu, Fri, and Sat.
- Type of Action:** Includes checkboxes for 'Set Power Outlet', 'Send Syslog Message', and 'Send Trap Message'. Each checkbox has associated dropdown menus for configuration.
- Footer:** Contains 'LOGOUT', 'DISCARD CHANGES', and 'APPLY CHANGES' buttons.

Activated

This check box must be checked to activate the Rule and enables to deactivate temporarily a rule while keeping all its settings for a later use.

Rule ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each rule. All the ID Codes used to identify rules start with the letter "R" followed by a number from 1 to 32. If you delete a rule in the middle of the Rule list, the number of this rule will only be used again if no other rule is available.

Rule Name:

In this field, enter the name you want to give to the rule. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Rule Color:

In this field, select one of the 48 standard colours you want to use to highlight the rule when executed. To use own colours, just type in the Hex value of the colour you want. The Rule highlighting allows to quickly identify the triggered rule when displayed in the Rule Panel page or in a special user's page.

Rule Type:

In this drop-down list, choose Schedule Rule then configure the event and the actions to perform.



Configuring the Event

Schedule Action:

Here you can define the time when the rule has to be executed. In the Drop-Down lists choose the time and below, check one or more day boxes.

Start Time

Defines what time the rule starts.

Repeat Time

Defines the time period in which the rule repeats.

Repeat Time cannot be set to zero.

Stop Time

Defines what time the rule ends.

- **End Time must be greater than or equal to Start Time.**

- **If the rule has to be executed only once at the selected weekday, enter the same value for Start Time and End Time.**

- **If the rule has to be executed 24 hours at the selected weekday, Start Time must be 1 minute later than EndTime.**

Applicable weekday

Defines which day(s) the rule has to be executed.

Type of Action

For the Event defined above, you can choose and configure following actions:

Set Group:

This type of action appears and can be configured only if you have already created at least one group (Settings/Groups Tab).

Check this box and in the corresponding drop-down list choose the power outlet group the rule will apply to. In the next corresponding drop-down list, choose the action to execute.

Each power outlet group can be switched On/Off and restarted. If you choose "restart" you will also be able to define a restart delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the Power Switch power outlets settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the Power Switch power outlets settings.

Set Power Outlet:

Check this box and in the corresponding drop-down list, choose the power outlet the rule will apply to. In the next corresponding drop-down list, choose the action to execute. Each power outlet can be switched On/Off and restarted. If you choose "restart" you will also be able to define a restart delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the Power Switch power outlets settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the Power Switch power outlets settings.

Set Digital Output:

Check this box and in the first corresponding drop-down list, choose the device from which one you want to switch a digital output. In the second drop-down list, choose the digital output the rule will apply to. In the next corresponding drop-down list, choose the action to execute. Each digital output can be open, close, pulse open or pulse close. If you choose "pulse...", you will also be able to define a pulse delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the Power Switch digital output settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the Power Switch digital output settings.

Send Syslog Message:

This type of action can be configured only if you have already created at least one destination Syslog Server (Misc/Log Settings Tab).

Check this box if you want to send a message to a Syslog server. In the following drop-down lists choose the facility and the severity of the message to send. The address of the Syslog server has to be defined in the "Log Settings Page".

Send Trap Message:

This type of action can be configured only if you have already specified at least a destination SNMP Server (General/SNMP Tab).

Check this/these box(es) and specify one or two SNMP addresses in the corresponding field if you want to send SNMP messages to one or two SNMP Servers.

Syslog / Trap Message:

 **This field can be used only if you have already specified at least one destination Syslog Server (Misc/Log Settings Page) or one destination SNMP Server (General/SNMP Page).**

Up to 255 characters may be entered in this free text field. The text will appear in the Syslog and the Trap. The message can be completed with the status of an input (a power supply or door contact for example) or the value of a sensor (a temperature sensor for example). For this, simply enter, between two percent characters, the ID of the corresponding input device (for details see § 5.1 Sending status and values using rules).

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

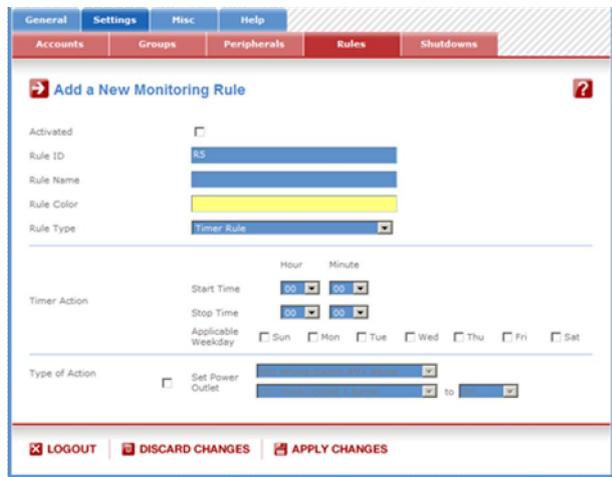
Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.8.2. Settings / Rules - Timer Rule

This rule can be used to trigger some actions according to a defined time table. For instance, you could create a rule to switch OFF a Power Outlet every Friday at 6 PM and create another rule to switch the Power Outlets ON again every Monday at 8 AM.



Activated

This check box must be checked to activate the rule. It enables to deactivate temporarily a rule while keeping all its settings for a later use.

Rule ID

The Power Switch automatically creates an ID Code to clearly identify each rule. These codes start with the letter "R" followed by a number.

Rule Name

In this field, enter the name you want to give to the rule. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Rule Color:

In this field, select one of the 48 standard colours you want to use to highlight the rule when executed. To use own colours, just type in the Hex value of the colour you want. The Rule highlighting allows to quickly identify the triggered rule when displayed in the Rule Panel page or in a special user's page.

Rule Type

In this Drop-Down list, choose Schedule Rule.

Rules are used to control actions according to a specific event. To create a rule, you will first have to configure the chosen event and then to choose the actions to perform.

Configuring the Event

Timer Action

Start Time

Defines what time the rule starts.

Stop Time

Defines what time the rule ends.

Applicable weekday

Defines which day(s) the rule has to be executed.

Type of Action

For the Event defined above, you can choose and configure following actions:

Set Group:

This type of action appears and can be configured only if you have already created at least one group (Settings/Groups Tab).

Check this box and in the corresponding drop-down list choose the power outlet group the rule will apply to. In the next corresponding drop-down list, choose the action to execute.

Each power outlet group can be switched On/Off and restarted. If you choose "restart" you will also be able to define a restart delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the Power Switch power outlets settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the Power Switch power outlets settings.

Set Power Outlet:

Check this box and in the corresponding drop-down list, choose the power outlet the rule will apply to. In the next corresponding drop-down list, choose the action to execute. Each power outlet can be switched On/Off and restarted. If you choose "restart" you will also be able to define a restart delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the Power Switch power outlets settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the Power Switch power outlets settings.

Set Digital Output:

Check this box and in the first corresponding drop-down list, choose the device from which one you want to switch a digital output. In the second drop-down list, choose the digital output the rule will apply to. In the next corresponding drop-down list, choose the action to execute. Each digital output can be open, close, pulse open or pulse close. If you choose "pulse...", you will also be able to define a pulse delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the Power Switch digital output settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the Power Switch digital output settings.

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

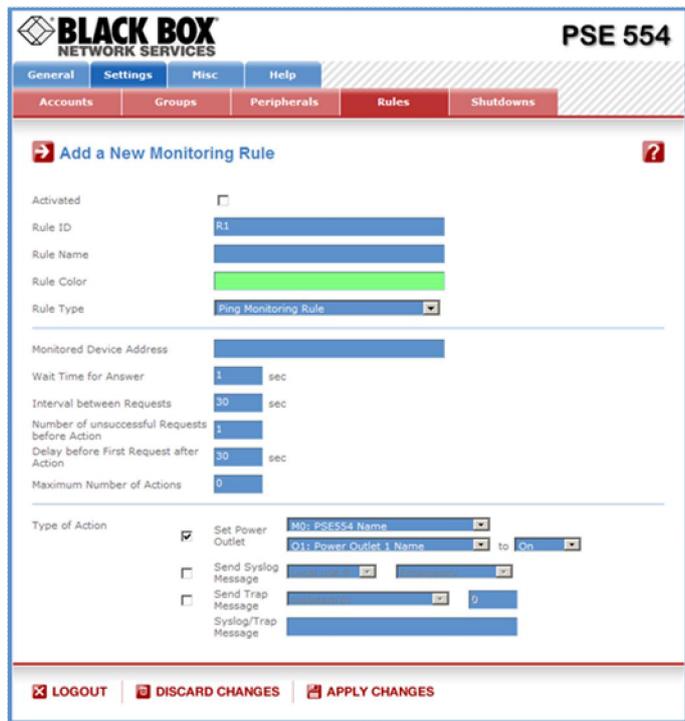
Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.8.3. Settings / Rules - Ping Monitoring Rule

This rule can be used to check if a computer or any IP device is connected to the network. It sends ping packets and listens for replies from the specific host. If the host doesn't reply, the Power Switch Master can automatically switch the powered device off and after a specified delay, switch it again on (for details see Ping & Scan Method).



Activated

This check box must be checked to activate the Rule and enables to deactivate temporarily a rule while keeping all its settings for a later use.

Rule ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each rule. All the ID Codes used to identify rules start with the letter "R" followed by a number from 1 to 32. If you delete a rule in the middle of the Rule list, the number of this rule will only be used again if no other rule is available.

Rule Name:

In this field, enter the name you want to give to the rule. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Rule Color:

In this field, select one of the 48 standard colours you want to use to highlight the rule when executed. To use own colours, just type in the Hex value of the colour you want. The Rule highlighting allows to quickly identify the triggered rule when displayed in the Rule Panel page or in a special users page.

Rule Type:

In this drop-down list, choose Ping Monitoring Rule then configure the event and the actions to perform.

Configuring the Event

Monitored device address:

In this field enter the IP address of the IP device that you want to monitor using the Ping command.

Wait Time for Answer:

In this field, define the delay in seconds for the Answer Timeout.

The delay can be set between 1 and 10 seconds.

Interval between Requests:

In this field, define the delay in seconds between ping commands sent to the IP device to monitor.

The delay can set between 30 and 65535 seconds.

Number of unsuccessful Requests before Action:

In this field, define the number of Ping commands to be sent to the IP device before executing the actions. The number can be set between 1 and 65535 seconds.

Delay before First Request after Action:

In this field, define the time in seconds before restarting the monitoring after the reboot action. The delay can be set between 30 and 65535 seconds.

Maximum Number of Actions

In this field, define the maximum number of actions. The number can be set between 0 and 255.

Type of Actions:

For the Event defined above, you can choose and configure following actions:

Set Group:

This type of action appears and can be configured only if you have already created at least one group (Settings/Groups Tab).

Check this box and in the corresponding drop-down list choose the power outlet group the rule will apply to. In the next corresponding drop-down list, choose the action to execute.

Each power outlet group can be switched On/Off and restarted. If you choose "restart" you will also be able to define a restart delay between 0 and 65535 seconds.

- If you choose 0 second for the delay, the delay will be the delay defined in the power outlets settings.
- If you choose a delay different from 0, it will replace the delay defined in the power outlets settings.

Set Power Outlet:

Check this box and in the corresponding drop-down list, choose the power outlet the rule will apply to. In the next corresponding drop-down list, choose the action to execute. Each power outlet can be switched On/Off and restarted. If you choose "restart" you will also be able to define a restart delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the Power Switch power outlets settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the Power Switch power outlets settings.

Set Digital Output:

Check this box and in the first corresponding drop-down list, choose the device from which one you want to switch a digital output. In the second drop-down list, choose the digital output the rule will apply to. In the next corresponding drop-down list, choose the action to execute. Each digital output can be open, close, pulse open or pulse close. If you choose "pulse...", you will also be able to define a pulse delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the digital output settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the digital output settings.

Send Syslog Message:

This type of action appears and can be configured only if you have already created at least one destination Syslog Server (Misc/Log Settings Tab).

Check this box if you want to send a message to a Syslog server. In the following drop-down lists choose the facility and the severity of the message to send. The address of the Syslog server has to be defined in the "Log Settings Page".

Send Trap Message

This type of action appears and can be configured only if you have already specified at least a destination SNMP Server (General/SNMP Tab).

Check this/these box(es) and specify one or two SNMP addresses in the corresponding field if you want to send SNMP messages to one or two SNMP Servers.

Syslog / Trap Message

This field can be used only if you have already configured at least one destination Syslog Server (Misc/Log Settings Page).

Up to 255 characters may be entered in this free text field. The text will appear in the Syslog and the Trap.



LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.8.4. Settings / Rules - Scan Monitoring Rule

This rule can be used to check if a specific protocol is available on a server (for example HTTP, FTP, Telnet, POP...). If the connection is possible, Power Switch Master 4-port knows that a server program is running there. If the connection is not possible, Power Switch Master 4-port can automatically switch the powered device off and, after a specified delay, switch it again on (for details see Ping & Scan Method).

The screenshot shows the 'Add a New Monitoring Rule' configuration page in the Black Box Network Services PSE 554 web interface. The page is divided into several sections:

- General Information:** Includes fields for Rule ID (R1), Rule Name, Rule Color (pink), and Rule Type (Scan Monitoring Rule).
- Event Configuration:** Includes fields for Monitored Device Address, Port to scan, Wait Time for Answer (1 sec), Interval between Requests (30 sec), Number of unsuccessful Requests before Action (1), Delay before First Request after Action (30 sec), and Maximum Number of Actions (0).
- Type of Action:** Includes a checked checkbox for 'Set Power Outlet' (M0: PSE554 Name, O1: Power Outlet 1 Name to On) and unchecked checkboxes for 'Send Syslog Message' and 'Send Trap Message'.
- Navigation:** Includes buttons for LOGOUT, DISCARD CHANGES, and APPLY CHANGES.

Activated

This check box must be checked to activate the Rule and enables to deactivate temporarily a rule while keeping all its settings for a later use.

Rule ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each rule. All the ID Codes used to identify rules start with the letter "R" followed by a number from 1 to 32. If you delete a rule in the middle of the Rule list, the number of this rule will only be used again if no other rule is available.

Rule Name:

In this field, enter the name you want to give to the rule. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Rule Color:

In this field, select one of the 48 standard colours you want to use to highlight the rule when executed. To use own colours, just type in the Hex value of the colour you want. The Rule highlighting allows to quickly identify the triggered rule when displayed in the Rule Panel page or in a special users page.

Rule Type:

In this drop-down list, choose Scan Monitoring Rule then configure the event and the actions to perform.

Configuring the Event

Monitored Device Address:

In this field, enter the IP address of the IP device that you want to monitor using the Scan command. In the "Port to scan" field, enter the port number you want to monitor. The value can be set between 1 and 65535.

Wait Time for Answer:

In this field, define the delay in seconds for the Answer Timeout. The delay can be set between 1 and 10 seconds.

Interval between Requests:



Note

In this field, define the delay between the scan commands sent to the IP device. The delay can be set between 30 and 65535 seconds.

Number of unsuccessful Requests before Action:

In this field, define the number of Port scanning commands to be sent to the IP device before executing the actions.

The number can be set between 1 and 65535 seconds.

Delay before First Request after Action:

In this field, define the time in seconds before restarting the monitoring after the reboot action.

The delay can be set between 30 and 65535 seconds.

Maximum Number of Actions

In this field, define the maximum number of actions.

The number can be set between 0 and 255.

Configuring the Actions

For the Event defined above, you can choose and configure following actions:

Set Group

This type of action appears and can be configured only if you have already created at least one group (Settings/Groups Tab).

Check this box and in the corresponding drop-down list choose the power outlet group the rule will apply to. In the next corresponding drop-down list, choose the action to execute.

Each power outlet group can be switched On/Off and restarted. If you choose "restart" you will also be able to define a restart delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the power outlets settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the power outlets settings.

Set Power Outlet:

Check this box and in the corresponding drop-down list, choose the power outlet the rule will apply to. In the next corresponding drop-down list, choose the action to execute. Each power outlet can be switched On/Off and restarted. If you choose "restart" you will also be able to define a restart delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the Power Switch power outlets settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the Power Switch power outlets settings.

Set Digital Output:

Check this box and in the first corresponding drop-down list, choose the device from which one you want to switch a digital output. In the second drop-down list, choose the digital output the rule will apply to. In the next corresponding drop-down list, choose the action to execute. Each digital output can be open, close, pulse open or pulse close. If you choose "pulse...", you will also be able to define a pulse delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the digital output settings.
- If you choose a delay different from 0, it will replace the delay defined in the digital output settings.

Send Syslog Message:

This type of action can be configured only if you have already created at least one destination Syslog Server (Misc/Log Settings Tab).

Check this box if you want to send a message to a Syslog server. In the following drop-down lists choose the facility and the severity of the message to send. The address of the Syslog server has to be defined in the "Log Settings Page".

Send Trap Message:

This type of action can be configured only if you have already specified at least a destination SNMP Server (General/SNMP Tab).

Check this/these box(es) and specify one or two SNMP addresses in the corresponding field if you want to send SNMP messages to one or two SNMP Servers.

Syslog / Trap Message:

This field can only be used if you have already specified at least one destination Syslog Server (Misc/Log Settings Page) or one destination SNMP Server (General/SNMP Page).

Up to 255 characters may be entered in this free text field. The text will appear in the Syslog and the Trap.

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.8.5. Settings / Rules - Power Supply Monitoring Rule

This rule can be used to monitor the status of the 2 power supplies of the Power Switch Master 4-port and the power supplies of connected peripherals like Power Switch Satellite units and Digital Input Modules.

The screenshot shows the 'Add a New Monitoring Rule' configuration page in the Black Box Network Services PSE 554 web interface. The page is divided into several sections:

- General Information:** Includes fields for Rule ID (R1), Rule Name, Rule Color (red), and Rule Type (Power Supply Monitoring Rule).
- Monitoring Configuration:** Includes fields for Power Input to monitor (S1: Power Switch 8-Port 1 Name), Action if Power Supply (Fault), and Type of Action (Set Power Outlet to On, Send Syslog Message, Send Trap Message, Syslog/Trap Message).
- Buttons:** Includes buttons for LOGOUT, DISCARD CHANGES, and APPLY CHANGES.

Activated

This check box must be checked to activate the Rule and enables to deactivate temporarily a rule while keeping all its settings for a later use.

Rule ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each rule. All the ID Codes used to identify rules start with the letter "R" followed by a number from 1 to 32. If you delete a rule in the middle of the Rule list, the number of this rule will only be used again if no other rule is available.

Rule Name:

In this field, enter the name you want to give to the rule. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Rule Color:

In this field, select one of the 48 standard colours you want to use to highlight the rule when executed. To use own colours, just type in the Hex value of the colour you want. The Rule highlighting allows to quickly identify the triggered rule when displayed in the Rule Panel page or in a special users page.

Rule Type:

In this drop-down list, choose Power Supply Monitoring Rule then configure the event and the actions to perform.

Configuring the Event

Power Input to monitor:

In the first Drop-Down list choose the device for which you want to monitor the power supplies. Each device name is preceded by the ID Code of the device.

- M0 for the Power Switch Master 4-port,
- S1 to S16 for the Power Switch Satellite units,
- DIM1 to DIM16 for Digital Input Modules.

A character between brackets can follow this ID Code:

- The "X" character means that the corresponding peripheral is physically not connected.
- The "!" character means that the corresponding peripheral is physically connected but not activated. If you want to activate it, go to the "Settings/Power Outlets" tab.
- The " " character (blank) means that the corresponding satellite is physically connected and activated.

In the second Drop-Down list, choose the power input (Input A or Input B) you wish to monitor.

Action if power supply...:

In this Drop-Down list, choose if the action has to be executed on power on or power failure.

Configuring the Actions

For the Event defined above, you can choose and configure following actions:

Set Group:

 This type of action appears and can be configured only if you have already created at least one group (Settings/Groups Tab).

Check this box and in the corresponding drop-down list choose the power outlet group the rule will apply to. In the next corresponding drop-down list, choose the action to execute.

Each power outlet group can be switched On/Off and restarted. If you choose "restart" you will also be able to define a restart delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the Power Switch power outlets settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the Power Switch power outlets settings.

Set Power Outlet:

Check this box and in the corresponding drop-down list, choose the power outlet the rule will apply to. In the next corresponding drop-down list, choose the action to execute. Each power outlet can be switched On/Off and restarted. If you choose "restart" you will also be able to define a restart delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the Power Switch power outlets settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the Power Switch power outlets settings.

Set Digital Output:

Check this box and in the first corresponding drop-down list, choose the device from which one you want to switch a digital output. In the second drop-down list, choose the digital output the rule will apply to. In the next corresponding drop-down list, choose the action to execute. Each digital output can be open, close, pulse open or pulse close. If you choose "pulse...", you will also be able to define a pulse delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the digital output settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the digital output settings.

Send Syslog Message:

 This type of action can be configured only if you have already created at least one destination Syslog Server (Misc/Log Settings Tab).

Check this box if you want to send a message to a Syslog server. In the following drop-down lists choose the facility and the severity of the message to send. The address of the Syslog server has to be defined in the "Log Settings Page".

Send Trap Message:

 This type of action can be configured only if you have already specified at least a destination SNMP Server (General/SNMP Tab).

Check this/these box(es) and specify one or two SNMP addresses in the corresponding field if you want to send SNMP messages to one or two SNMP Servers.

Syslog / Trap Message:

 This field can be used only if you have already specified at least one destination Syslog Server (Misc/Log Settings Page) or one destination SNMP Server (General/SNMP Page).

Up to 255 characters may be entered in this free text field. The text will appear in the Syslog and the Trap. The message can be completed with the status of an input (a power supply or door contact for example) or the value of a sensor (a temperature sensor for example). For this, simply enter, between two percent characters, the ID of the corresponding input device (for details see § 5.1 Sending status and values using rules).

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.8.6. Settings / Rules - Digital Input Monitoring Rule

This rule can be used to monitor the status of an electrical contact (a door contact, a smoke contact, a proximity sensor, a push button) and to initiate different actions if the contact status has changed.

The screenshot shows the 'Add a New Monitoring Rule' configuration page in the Black Box Network Services PSE 554 web interface. The page is divided into several sections:

- General Information:** Includes fields for Rule ID (R1), Rule Name, Rule Color (yellow), and Rule Type (Digital Input Monitoring Rule).
- Digital Input to monitor:** Includes dropdown menus for TDE2: TDE Sensor 2 Name and DI1: Digital Input 1 Name.
- Action if Digital Input switch to ...:** A dropdown menu set to 'Open'.
- Type of Action:** A list of actions with checkboxes. The 'Set Power Outlet' action is checked. It includes dropdowns for M0: PSE554 Name and O1: Power Outlet 1 Name, and a dropdown for the action (On).
- Other Actions:** Unchecked options for Send Syslog Message, Send Trap Message, and Syslog/Trap Message.
- Footer:** Buttons for LOGOUT, DISCARD CHANGES, and APPLY CHANGES.

Activated

This check box must be checked to activate the Rule and enables to deactivate temporarily a rule while keeping all its settings for a later use.

Rule ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each rule. All the ID Codes used to identify rules start with the letter "R" followed by a number from 1 to 32. If you delete a rule in the middle of the Rule list, the number of this rule will only be used again if no other rule is available.

Rule Name:

In this field, enter the name you want to give to the rule. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Rule Color:

In this field, select one of the 48 standard colours you want to use to highlight the rule when executed. To use own colours, just type in the Hex value of the colour you want. The Rule highlighting allows to quickly identify the triggered rule when displayed in the Rule Panel page or in a special users page.

Rule Type:

In this drop-down list, choose Digital Input Monitoring Rule then configure the event and the actions to perform.

Configuring the Event

Digital Input to monitor:

In the first drop-down list, choose the device you want to monitor:

- M0 for Power Switch Master 4-port,
- TP followed by a number for a Proximity Sensor,
- DIM followed by a number for a Digital Input Module,
- TDE followed by a number for a TDE temperature sensor,
- PB followed by a number for a Push Button.

In the second drop-down list, choose the Input you want to monitor. The Power Switch Master 4-port uses ID Codes to clearly identify each Input:

- PS followed by a number for the IR proximity sensor inputs,
- DI followed by a number for the digital inputs of a DIM module,
- EOL followed by a number for the End of Line of a TDE temperature sensor.
- SP followed by a number for a short push on the push buttons,
- LP followed by a number for a long push on the push buttons.

Action if Digital Input switches to...:

In this Drop-Down list choose if the action has to be executed when:

- a contact opens or closes,
- when a push button is used (On or Off),
- when an IR proximity sensor detects a presence (On or Off).

Configuring the Actions

For the Event defined above, you can choose and configure following actions:

Set Group:

This type of action appears and can be configured only if you have already created at least one group (Settings/Groups Tab).

Check this box and in the corresponding drop-down list choose the power outlet group the rule will apply to. In the next corresponding drop-down list, choose the action to execute.

Each power outlet group can be switched On/Off and restarted. If you choose "restart" you will also be able to define a restart delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the Power Switch power outlets settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the Power Switch power outlets settings.

Set Power Outlet:

Check this box and in the corresponding drop-down list, choose the power outlet the rule will apply to. In the next corresponding drop-down list, choose the action to execute. Each power outlet can be switched On/Off and restarted. If you choose "restart" you will also be able to define a restart delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the Power Switch power outlets settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the Power Switch power outlets settings.

Set Digital Output:

Check this box and in the first corresponding drop-down list, choose the device from which one you want to switch a digital output. In the second drop-down list, choose the digital output the rule will apply to. In the next corresponding drop-down list, choose the action to execute. Each digital output can be open, close, pulse open or pulse close. If you choose "pulse...", you will also be able to define a pulse delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the digital output settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the digital output settings.

Send Syslog Message:

This type of action can be configured only if you have already created at least one destination Syslog Server (Misc/Log Settings Tab).

Check this box if you want to send a message to a Syslog server. In the following drop-down lists choose the facility and the severity of the message to send. The address of the Syslog server has to be defined in the "Log Settings Page".

Send Trap Message:

This type of action can be configured only if you have already specified at least a destination SNMP Server (General/SNMP Tab).

Check this/these box(es) and specify one or two SNMP addresses in the corresponding field if you want to send SNMP messages to one or two SNMP Servers.


Syslog / Trap Message: **This field can be used only if you have already specified at least one destination Syslog Server (Misc/Log Settings Page) or one destination SNMP Server (General/SNMP Page).**

Up to 255 characters may be entered in this free text field. The text will appear in the Syslog and the Trap. The message can be completed with the status of an input (a power supply or door contact for example) or the value of a sensor (a temperature sensor for example). For this, simply enter, between two percent characters, the ID of the corresponding input device (for details see § 5.1 Sending status and values using rules).

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.8.7. Settings / Rules - Analog Input Monitoring Rule

This rule can be used to monitor an Analog Input value (temperature, humidity, ambient light, current....) and perform actions when the predefined value is exceeded.

The screenshot shows the 'Add a New Monitoring Rule' configuration page in the Black Box Network Services PSE 554 web interface. The page is organized into several sections:

- General Information:** Includes fields for Rule ID (R1), Rule Name, Rule Color (pink), and Rule Type (Analog Input Monitoring Rule).
- Analog Input to monitor:** Includes dropdown menus for TH1: TH Sensor 1 Name and T1: Temperature Input Name.
- Action if...:** Includes checkboxes for 'Higher than 0 °C' and 'Lower than 0 °C'.
- Type of Action:** Includes checkboxes for 'Set Power Outlet' (to On), 'Send Syslog Message', 'Send Trap Message', and 'Syslog/Trap Message'.

At the bottom of the page, there are three buttons: LOGOUT, DISCARD CHANGES, and APPLY CHANGES.

Activated

This check box must be checked to activate the Rule and enables to deactivate temporarily a rule while keeping all its settings for a later use.

Rule ID:

The Power Switch Master 4-port automatically creates an ID Code to clearly identify each rule. All the ID Codes used to identify rules start with the letter "R" followed by a number from 1 to 32. If you delete a rule in the middle of the Rule list, the number of this rule will only be used again if no other rule is available.

Rule Name:

In this field, enter the name you want to give to the rule. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Rule Color:

In this field, select one of the 48 standard colours you want to use to highlight the rule when executed. To use own colours, just type in the Hex value of the colour you want. The Rule highlighting allows to quickly identify the triggered rule when displayed in the Rule Panel page or in a special users page.

Rule Type:

In this drop-down list, choose Analog Input Monitoring Rule then configure the event and the actions to perform.



Configuring the Event

Analog Input to monitor:

Choose in the first Drop-Down list the device you want to monitor.

- temperature, humidity and ambient light sensors,
- current probes,
- EnergyMeter,
- Power Switch Satellite /32.

Each device name, which can be defined by the administrator (go to Settings/Sensors Tab), is preceded by the ID Code of the device. For example, all ID Codes used to identify temperature sensors start with the character "T" followed by a number.

A character between brackets can follow this ID Code:

- The "X" character means that the corresponding sensor is physically not connected.
- The "!" character means that the corresponding sensor is physically connected but not activated. If you want to activate it, go to the "Settings/Power Outlets" tab.
- The " " character (blank) means that the corresponding sensor is physically connected and activated.

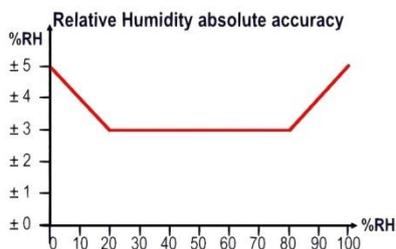
According to the device you use, choose the Analog Input in the second Drop-Down (temperature, humidity, light, current, energy...).

Action Condition:

The options "higher than" and "lower than" enable you to define when the rule has to be executed.

- Choose "higher than" if you want to execute the rule when the environment value exceeds the value you defined in the field on the right of "higher than".
- Choose "lower than" if you want to execute the rule when the environment value is below the value you defined in the field on the right of "lower than".

- For temperature, you can define values between -25°C and 60°C, +/- 2°C.
- For relative humidity, you can define values between 20 RH and 80 RH, +/- 3%.



- For ambient light, you can define values between 0 and 1000 Lux.
- For the effective current (rms), you can define values between 1 and 10 Amps.

Configuring the Actions

For the Event defined above, you can choose and configure the following actions:

Set Group:

This type of action appears and can be configured only if you have already created at least one group (Settings/Groups Tab).

Check this box and in the corresponding drop-down list choose the power outlet group the rule will apply to. In the next corresponding drop-down list, choose the action to execute.

Each power outlet group can be switched On/Off and restarted. If you choose "restart" you will also be able to define a restart delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the Power Switch power outlets settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the Power Switch power outlets settings.

Set Power Outlet:

Check this box and in the corresponding drop-down list choose the power outlet the rule will apply to. In the next corresponding drop-down list, choose the action to execute. Each power outlet can be switched On/Off and restarted. If you choose "restart" you will also be able to define a restart delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the Power Switch power outlets settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the Power Switch power outlets settings.

Set Digital Output:

Check this box and in the first corresponding drop-down list, choose the device from which one you want to switch a digital output. In the second drop-down list, choose the digital output the rule will apply to. In the next corresponding drop-down list, choose the action to execute. Each digital output can be open, close, pulse open or pulse close. If you choose "pulse...", you will also be able to define a pulse delay between 0 and 65535 seconds.

- If you choose 0 second, the delay will be the delay defined in the digital output settings.
- If you choose a delay different from 0, the delay will replace the delay defined in the digital output settings.

Send Syslog Messages:

This type of action can be configured only if you have already created at least one destination Syslog Server (Misc/Log Settings Tab).

Check this box if you want to send a message to a Syslog server. In the following drop-down lists choose the facility and the severity of the message to send. The address of the Syslog server has to be defined in the "Log Settings Page".

Send Trap Message:

This type of action can be configured only if you have already specified at least a destination SNMP Server (General/SNMP Tab).

Check this/these box(es) and specify one or two SNMP addresses in the corresponding field if you want to send SNMP messages to one or two SNMP Servers.

Syslog / Trap Message:

This field can be used only if you have already specified at least one destination Syslog Server (Misc/Log Settings Page) or one destination SNMP Server (General/SNMP Page).

Up to 255 characters may be entered in this free text field. The text will appear in the Syslog and the Trap. The message can be completed with the status of an input (a power supply or door contact for example) or the value of a sensor (a temperature sensor for example). For this, simply enter, between two percent characters, the ID of the corresponding input device (for details see § 5.1 Sending status and values using rules).

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

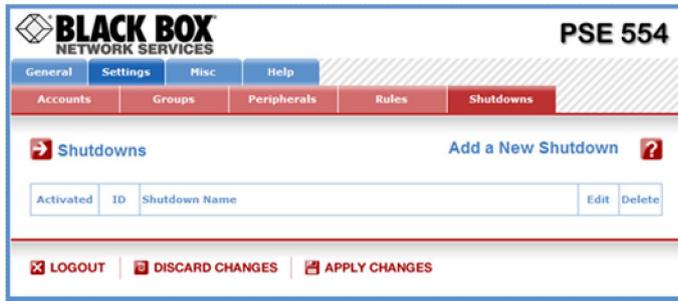
Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

3.3.9. Settings / Shutdowns

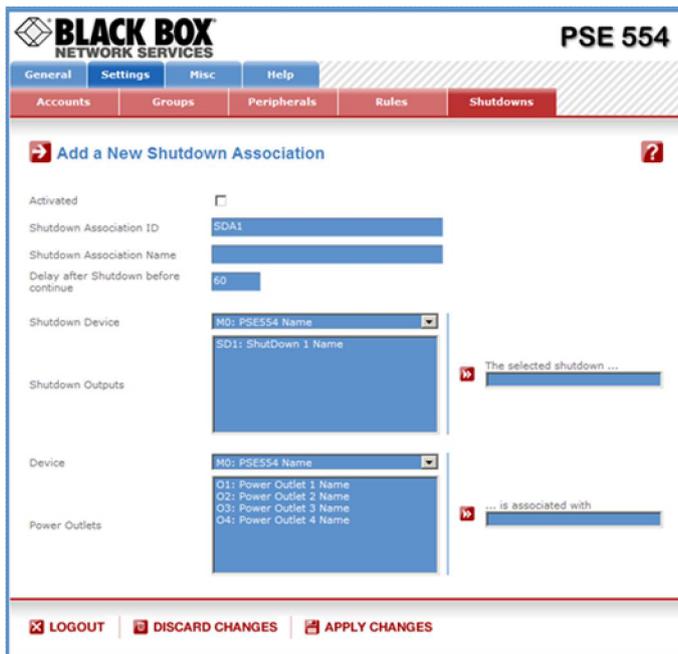
This power switch supports shutdown facilities of 1 server via its Serial RS232 interface.



- To remove an existing Shutdown association, click on "Delete" of the corresponding rule.
- To modify a Shutdown rule, click on "Edit" of the corresponding rule.

This page is used to create, modify and delete a Shutdown Association. Click on "Add a New Shutdown" (on the right side of the page).

A new page appears, allowing you to set all the parameters of the rule.



Activated

This check box must be checked to activate the Shutdown Rule and enables to deactivate temporarily a rule while keeping all its settings for a later use.

Shutdown Association ID

The Power Switch automatically creates ID codes to clearly identify each rule. The codes used to identify Shutdown Rules start with the letters "SDA" followed by a number.

Shutdown Association Name

In this field, enter the name you want to give to the rule. The name can be from 1 to 32 characters long, and can contain alphanumeric characters.

Do not use quotes or special characters in labels!

Delay after Shutdown before continue

In this field, specify a delay after which the associated power outlet will be switch to off.

Shutdown Device

In this Drop-Down list, choose the device which will be used to trigger the Shutdown action. If the Power Switch is used as stand-alone unit, this Drop-Down list will only show the Power Switch itself.

Shutdown Outputs

In this field, choose the output which will be used to trigger the Shutdown.

- To select an output, select the output you want to add in the left field and click on the Arrow button, the output will then appear in the right field.
- To remove the selected output, select this output in the right field and click on the Arrow button, the output will then appear in the left field.

Group:

This type of action appears and can be configured only if you have already created at least one group (Settings/Groups Tab).

In this field, choose the group of power outlets which will be used for the Shutdown rule.

- To select a group, select the output you want to add in the left field and click on the Arrow button, the output will then appear in the right field.
- To remove the group displayed in the right field, select this group in the right field and click on the Arrow button, the group will then appear in the left field.

Device

In this Drop-Down list, choose the device of which the power outlet will be used to trigger the Shutdown action. If the Power Switch is used as stand-alone unit, this Drop-Down list will only show the Power Switch itself.

Power Outlets

In this field, choose the Power Outlet will be used to trigger the Shutdown.

- To select a Power Outlet, select the Power outlet you want to add in the left field and click on the Arrow button, the Power Outlet will then appear in the right field.
- To remove the selected Power Outlet, select this Power Outlet in the right field and click on the Arrow button, the Power Outlet will then appear in the left field.

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.





3.3.10. Misc / Control Panel

This page is very helpful for the administrator because it gives a complete overview of all the peripherals which are currently connected or have been connected to the Power Switch Master 4-port. At a glance, the administrator can check the status of the power supplies of the Power Switch Master 4-port and the connected Peripherals. He can also check the values of the connected sensors check the status of the connected dry contacts and of course control all the power outlets of the connected Power Switch units.

Control Panel

PSE554 Name

<input type="checkbox"/> On] Power Outlet 1 Name	<input type="button" value="On"/> <input type="button" value="Off"/> <input type="button" value="Restart"/>	<input type="checkbox"/> On] Power Outlet 2 Name	<input type="button" value="On"/> <input type="button" value="Off"/> <input type="button" value="Restart"/>
<input type="checkbox"/> On] Power Outlet 3 Name	<input type="button" value="On"/> <input type="button" value="Off"/> <input type="button" value="Restart"/>	<input type="checkbox"/> On] Power Outlet 4 Name	<input type="button" value="On"/> <input type="button" value="Off"/> <input type="button" value="Restart"/>

Off] ShutDown 1 Name

Power Switch 8-Port 1 Name

<input type="button" value="Applied"/> Power Input A Name	<input type="button" value="Applied"/> Power Input B Name
<input type="checkbox"/> On] Power Outlet 1 Name	<input type="checkbox"/> On] Power Outlet 2 Name
<input type="checkbox"/> On] Power Outlet 3 Name	<input type="checkbox"/> On] Power Outlet 4 Name
<input type="checkbox"/> On] Power Outlet 5 Name	<input type="checkbox"/> On] Power Outlet 6 Name
<input type="checkbox"/> On] Power Outlet 7 Name	<input type="checkbox"/> On] Power Outlet 8 Name

TH Sensor 1 Name

Temperature Input Name Humidity Input Name

TDE Sensor 2 Name

Temperature Input Name Digital Input 1 Name

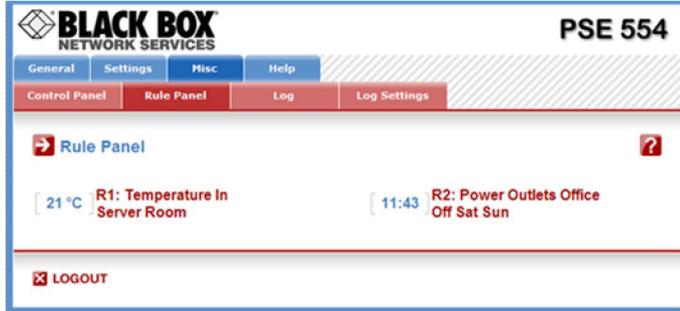
End Of Line 2 Name

Digital Input Module 1 Name

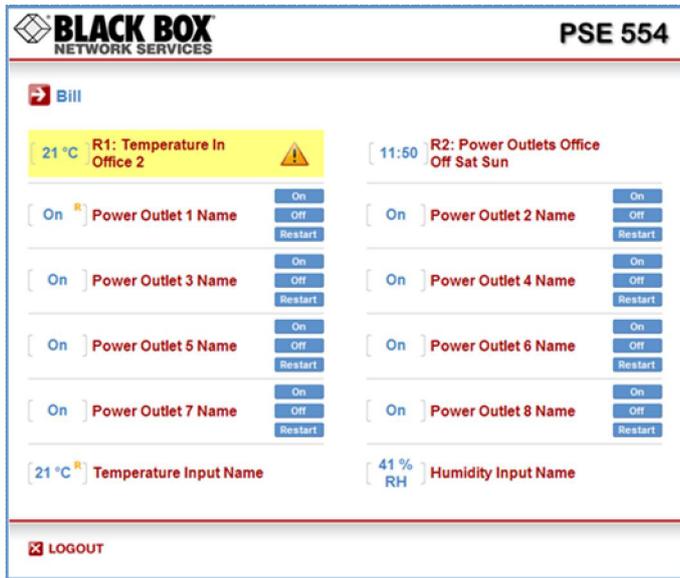
<input type="button" value="Applied"/> Power Input A Name	<input type="button" value="Fault"/> Power Input B Name
<input type="text" value="Open"/> Digital Input 1 Name	<input type="text" value="Open"/> Digital Input 2 Name
<input type="text" value="Open"/> Digital Input 3 Name	<input type="text" value="Open"/> Digital Input 4 Name
<input type="text" value="Open"/> Digital Input 5 Name	<input type="text" value="Open"/> Digital Input 6 Name
<input type="text" value="Open"/> Digital Input 7 Name	<input type="text" value="Open"/> Digital Input 8 Name
<input type="text" value="Open"/> Digital Input 9 Name	<input type="text" value="Open"/> Digital Input 10 Name
<input type="text" value="Open"/> Digital Input 11 Name	<input type="text" value="Open"/> Digital Input 12 Name
<input type="text" value="Open"/> Digital Input 13 Name	<input type="text" value="Open"/> Digital Input 14 Name
<input type="text" value="Open"/> Digital Input 15 Name	<input type="text" value="Open"/> Digital Input 16 Name

3.3.11. Misc / Rule Panel

This page shows all the rules the administrator has created and activated. The rules which have been executed can also be highlighted in different colours according to the emergency of the action. The highlight colours can be customized during the creation of the rule (Settings/Rules Page).



For supervision purpose, the administrator can create special accounts which display only some specific rules. In the example below, the user Bill has the possibility to supervise 2 rules and to see on a glance the rules which have been triggered.



Note The page is automatically refreshed every 10 seconds. Unlike a standard session, the web server of the Power Switch Master 4-port won't automatically close this kind of session. Opening many sessions of this affects the performances of the web server.

3.3.12. Misc / Log

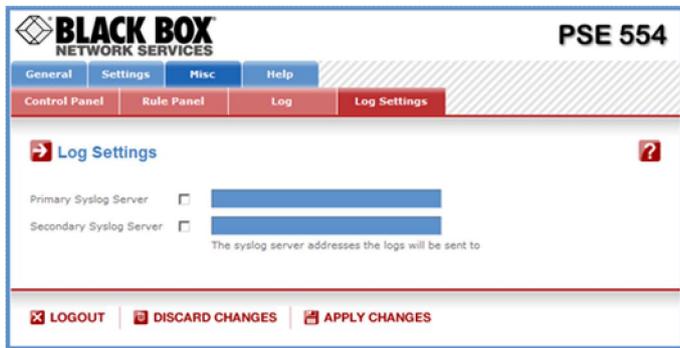
The log file keeps a running log of events and activities occurring on the device. The logs are automatically cleared when the device is rebooted. The file will display up to 2048 recent logs.

The screenshot shows the web interface for a Black Box Network Services PSE 554. The interface has a top navigation bar with tabs for General, Settings, Misc, and Help. Below this is a secondary navigation bar with tabs for Control Panel, Rule Panel, Log, and Log Settings. The main content area is titled 'Log' and contains a list of log entries. At the bottom of the interface, there are two buttons: 'LOGOUT' and 'CLEAR LOG'.

Severity	Time	Message
Informational	04 Jan 2000 11:51:42	Administrator Session open (IP:192.168.100.12)
Informational	04 Jan 2000 11:51:34	User Session closed by "Bill" (IP:192.168.100.12)
Informational	04 Jan 2000 11:50:13	User Session open by "Bill" (IP:192.168.100.12)
Informational	04 Jan 2000 11:50:06	Administrator Session closed (IP:192.168.100.12)
Informational	04 Jan 2000 11:49:14	Rule R1 (Temperature in office 2) : Module ePowerSwitch 4M+
Notice		Name Power Outlet Power Outlet 2 Name has been switched to On
Informational	04 Jan 2000 11:49:21	User Session closed by "Bill" (IP:192.168.100.12)
Informational	04 Jan 2000 11:48:50	Administrator Session open (IP:192.168.100.12)
Informational	04 Jan 2000 11:46:23	User Session open by "Bill" (IP:192.168.100.12)
Informational	04 Jan 2000 11:46:12	Administrator Session closed (IP:192.168.100.12)
Informational	04 Jan 2000 11:37:17	Administrator Session open (IP:192.168.100.12)

3.3.13. Misc / Log Settings

This page allows you to configure the logs. The Log file is used by the system to record actions, warnings, errors and problems. It is often quite useful to discover the causes of tricky problems. The messages recorded in the log file and sent as copy to a Syslog server are classified into 8 severity levels (Emergency, Alert, Critical, Error, Warning, Notice, Informational and Debug).



Primary Syslog Server:

Server Address" and enter the address of the Syslog Server you wish to use. You can enter either the hostname or the IP address of a Syslog server. The Syslog uses port 443/UDP. If you want to enable the Power Switch to send messages to a Syslog Server, check the box "Syslog". Note: if you use a hostname, it is important that the system can resolve the hostname locally and so you need to configure a Default Gateway and at least one DNS Server on the Network Settings Page (General/IP Configuration page).

Secondary Syslog Server:

In this field you can define the IP Address of a secondary Syslog Server. You can enter either the hostname or the IP address of a Syslog server.

LOGOUT:

Click "Logout" at the bottom of the page to exit the session without saving changes.

DISCARD CHANGES:

Click "Discard Changes" at the bottom of the page to discard all the changes you have made on this page.

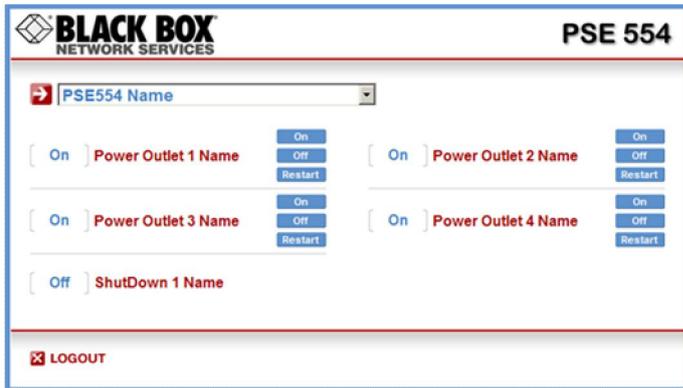
APPLY CHANGES:

Click "Apply Changes" at the bottom of the page to save changes.

4. POWER OUTLET CONTROL AND PERIPHERALS STATUS

4.1. via the Internet using a standard browser

1. Start your Web browser and type the IP address of your Power Switch Master 4-port. The browser displays the authentication dialog box.
2. Enter a user name and its corresponding password. The status of the Power Switch Master 4-port is displayed.



3. In the drop-down list, choose the power control unit you want to control or the peripheral for which you want to know the status.

If you log in as system administrator, you will be able to:

- control all the power outlets and all the power outlet groups of the connected Power Switch devices,
- display the instant values of all the connected sensors (temperature, humidity, ambient light),
- display the status of all digital inputs.

If you log in as a user (Power Switch Master 4-port handles up to 40 accounts), you will be able to:

- control individually all the power outlets and all the power outlet groups for which you have the rights,
- display the values of all the connected sensors for which you have the rights,
- display the status of all the digital inputs for which you have the rights.

The ON button allows you to switch ON the corresponding power outlet or group of power outlets.

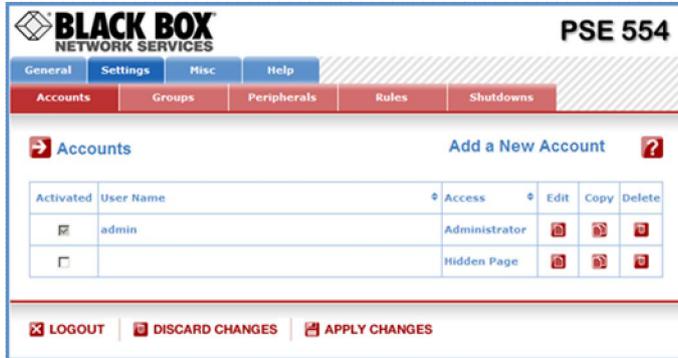
The OFF button allows you to switch OFF the corresponding power outlet or group of power outlets.

The RESTART button allows you to switch OFF the corresponding power outlet or group of power outlets. The power outlet or group of power outlets will then be automatically switched ON after the delay defined by the administrator (see Settings / power outlets Page).

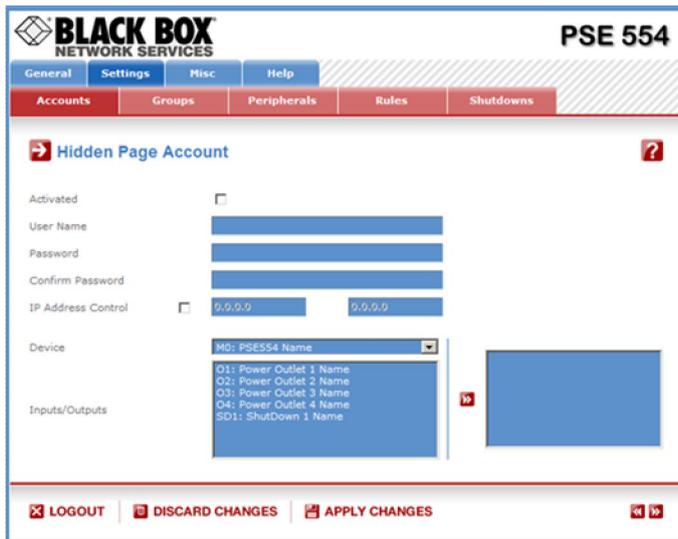
4.1. through the network using simple commands in your own program

Developers who want to implement the power outlet control in own programs can access to a special page named hidden.htm and control individually the power outlets using simple commands.

To configure the Hidden Page Account, go to Settings / Accounts.



- To activate or deactivate this account, check or uncheck the corresponding checkbox.
- To modify the Hidden page account, click on "Edit" next to the corresponding account. A new page appears, allowing you to set all the parameters of the account.



Activated

This check box must be checked to activate the Hidden Page Account. It enables to deactivate temporarily this account while keeping all its settings for a later use. The Hidden Page Account cannot be deleted.

User Name

In this field, enter the name you want to give to the Hidden Page Account.

The user name can be up to 32 characters long and contain alphanumeric characters.

Do not use quotes or special characters in labels!

Password

In this field, enter the password you want to give to the Hidden Page Account.

The password can be up to 32 characters long and contain alphanumeric characters.

Confirm Password

In this field, enter the password again for confirmation.

IP Address Control

Network security can be increased by IP address filtering. Check this checkbox and specify an IP address or a range of IP addresses which has the right to access to the Hidden Page Account.



Groups

This field appears only if at least one group has already been created. To create a group, go to the Settings/Groups Page.

- To add an existing group of Power Outlets to the current account, select the group you want to add in the left field and click on the Arrow button, the group will then appear in the right field.
- To remove a Group from the current account, select the group you want to remove in the right field and click on the Arrow button, the group will then appear in the left field.

Each group is clearly identified by its own ID (G1, G2, G3...) followed by the name given during the configuration. If the symbol "!" appears between brackets behind the ID Code that means that the Group is not activated. To activate it, go to the "Settings/Groups" page.

Device

In this drop-down list, choose the device from which one you want to add Inputs or Outputs to the current account.

- **Only properly connected devices or devices which already have been connected to the Power Switch appears in this field.**
- **Each peripheral is clearly identified by its own ID followed by the name given during the configuration. Behind the ID can appear a character between brackets which has following meaning:**
 - **"!" means that the corresponding device is properly connected to the Power switch but not activated. To activate it, go to the "Settings/Peripherals" page.**
 - **"X" means that the corresponding device has already been connected to the Power switch but is currently no longer connected to the Power Switch.**

Inputs/Outputs

- This field is used to add/remove Inputs or Outputs to/from the current account.
- To add an Input or Output to the current account, select the Input / Output you want to add in the left field and click on the Arrow button, the selected Input / Output will then appear in the right field.
- To remove an Input or Output from the current account, select the Input / Output you want to remove in the right field and click on the Arrow button, the selected Input / Output will then appear in the left field.

Accessing to the Hidden Page Account

To be able to access to the Hidden Page, you must have configured the Hidden Page Account and activated it. For the first tests, simply check the Activated check box, start your browser and type into your browser's address bar the IP address of your power switch followed by the name of the hidden page.

Example: if the IP address of your Power Switch is 192.168.100.200, type in:
<http://192.168.100.201/hidden.htm> followed by <ENTER>.

Your Web browser will now display:

```
Hidden Page
21 Dec 2010 01:50:03
PSE554MA
Version: 2.1.0.0
```

Controlling Power Outlets

Only Power Outlets which have been selected can be controlled over the Hidden Page. To select Power Outlets, go to the "Settings/Accounts" page and edit the Hidden Page Account. In the Inputs/Outputs field, selected the Power Outlets you want to control and click on the Arrow button next to the Inputs/Outputs field. The selected Power outlets appear in the right field, click on Apply Change to validate the configuration.

Example: if you have selected all 4 power Outlets and the IP address of your Power Switch is 192.168.100.200, type in:
<http://192.168.100.201/hidden.htm> followed by <ENTER>.

Your Web browser will now display:

Hidden Page
21 Dec 2010 02:29:01
PSE554MA
Version: 2.1.0.0
M0:01=On
M0:02=On
M0:03=On
M0:04=On

Each Power Outlet support individually 3 commands: On, Off and Restart using following syntax:

M0:Ox=[ON], [OFF], [RESTART]

M0: ID of your Power Switch
Ox: Outlet number of your Power Switch
ON: ON command
OFF: OFF command
RESTART: Restart command

The first command must be preceded by a "?"

Commands can be concatenated using the character "&"

Commands can be specified in upper case, lower case or mixed case

The Hidden Page functionality also allows to control peripherals connected to the A-xBus (all sensors, Digital I/O Modules, Power Switches, Current probe...).

Example: if you want to switch to OFF the Power Outlet #1 and 3, type in:

<http://192.168.100.201/hidden.htm?M0:O1=OFF&M0:O3=OFF>

Your Web browser will now display:

Hidden Page
21 Dec 2010 02:42:08
PSE554MA
Version: 2.1.0.0
M0:01=Off
M0:02=On
M0:03=Off
M0:04=On

5. APPENDIX

5.1. Sending status information and sensor values using rules

The administrator can create rules (see Settings/Rules) to trigger actions and send personalized messages in form of Syslog messages or SNMP traps when an event occurs. Moreover, the administrator also has the possibility to complete his messages with status information of an input (a power supply or a door contact for example) or the value of a sensor (a temperature sensor for example).

In the "Syslog/Trap Message" field of the rule settings page, the administrator has simply to enter the ID of the input of which he wants to send the status or value. This ID is made of the ID of the device where the input is located and the ID of the input itself.



**The IDs have to be entered between two percent characters.
Many IDs can be specified in the text box but the message must not exceed 255.**

Syntax: %[device ID]:[input ID]%

To know all IDs currently used by the system, go to the "Settings/Rules" page and click on "Add a New Rule". The two IDs of the monitored input are displayed in the two fields in the middle of the page.

- To know all Digital Input IDs, choose "Digital Input Monitoring Rule" as Rule Type.
- To know all Analog Input IDs, choose "Analog Input Monitoring Rule" as Rule Type.
- To know all Power Status IDs, choose "Power Supply Monitoring Rule" as Rule Type.

Examples:

- To send the value of the T1 temperature, the administrator could add following line in the "Syslog/Trap Message" text area:

Temperature is %T1:T1%

- To send the state of the D1 door contact of the DIM1 Digital Input Module, the administrator could add following line in the "Syslog/Trap Message" text area:

Door contact status is %DIM1:DI1%



The schedule rule can be used to send status information or sensor values on specified weekdays at regular interval.

5.2. Ping and Scan Methods

Power Switch Master 4-port has two methods to check whether an IP equipment (PC, server, router, Webcam...) is still alive:

Address Pinging:

The first method uses the well-known Ping command whereby a request is sent to a specific IP address. The Ping command, which is an echo request, enables you to determine through an ICMP protocol (Internet Control Message Protocol) if an IP device is available on the network. If the system reacts to this request, Power Switch Master 4-port knows that the TCP/IP connection is established. If the system does not react to one or several requests, Power Switch Master 4-port can automatically switch the device off and after a specified delay switch it again on (Reboot function).

Port Scanning:

The second method uses the Port Scan command to test a specific TCP/IP port. In other words, this command allows you to find out if a specific protocol is available on a server (for example HTTP, FTP, Telnet, POP...). Power Switch Master 4-port simply tries to connect to a specific server port. If the connection is possible, Power Switch Master 4-port knows that a server program is running there. If the connection is not possible, Power Switch Master 4-port can automatically switch the device off and after a specified delay switch it again on (Reboot function).

- **The Supervision function works only if the Power Switch Master 4-port is connected to the LAN.**
- **The Ping and Scan functions can be used separately or together.**
- **The network route between Power Switch Master 4-port and the IP device you wish to supervise should be as direct as possible, so do not use unnecessary routers and complex wiring between them.**

A problem on a router or the wiring could reboot the IP device to supervise.

- **Execute several Pings and/or Scans before running the Reboot function. It could be possible that the IP device doesn't respond although it is still working.**
- **Choose a realistic supervision cycle. One second is possible, however it's not necessary to overload the network with Ping and Scan requests.**

Recommended values:

- Interval between Requests: 10 sec or more
- Number of unsuccessful Requests before Reboot: 3 or more
- Delay before Reboot: 10 sec or more
- Delay before restarting monitoring after Reboot: 120 sec or more



5.3. Technical Data

Network standards:

IEEE 802.3, 10 / 100 BASE-T

Network protocols:

TCP/IP, HTTP

Network connection:

RJ-45 connector for STP CAT5

Max. network cable length 100 meters

Serial connection:

RS232, SUB-D 9 female

Operating temperature:

0°C to +40°C

Operating humidity:

10% to 80% RH (not condensing)

Dimensions (LxDxH):

230 x 112 x 42 mm

Weight:

1 kg

Approvals:

CE, EN55022 & EN55024

5.4. Commonly used Ports

TCP 80: This port is used for http connections.

UDP 123: This port is used to allow time synchronization over NTP (Network Time Protocol).

UDP 161: This port is used for SNMP Requests.

UDP 162: This port is used for SNMP Traps.

UDP 514: This port is used to deliver Syslog messages.

5.5. Syslog Messages: Severity Level Definitions

The Emergency level is the most severe type of message generated by Power Switch Master 4-port and the Debug severity level is the least severe one.

Severity Level 0, Emergency:

The following messages appear at severity 0:

- Continuous error!

Severity Level 1, Alert:

The following messages appear at severity 1:

- Settings have been reinitialized through the serial connection
- Power Switch Master 4-port does not respond
- Satellite "number" does not respond
- Sensor "number" does not respond
- Failure on Power Input A of Master M0
- Failure on Power Input B of Master M0
- Failure on Power Input A of Satellite (number)
- Failure on Power Input B of Satellite (number)

Severity Level 2, Critical:

The following messages appear at severity 2:

- "file" config corrupted : restoring default values

Severity Level 3, Error:

Power Switch Master 4-port doesn't generate Severity Level 3.

Severity Level 4, Warning:

The following messages appear at severity 4:

- Settings have been changed through the serial connection
- Settings have been changed through the network by User "name"

Severity Level 5, Notice:

The following messages appear at severity 5:

- Master M0 has been connected
- Satellite (number) has been connected
- Sensor (number) has been connected
- System has been restarted through the serial connection
- Power Supply A of Master restored
- Power Supply B of Master restored
- Power Supply A of Satellite (number) restored
- Power Supply B of Satellite (number) restored
- Rule (number) : Outlet (number) of Master has been switched ON
- Rule (number) : Group (number) has been switched ON
- Rule (number) : Dry Contact Output (number) has been open

Severity Level 6, Informational:

The following messages appear at severity 6:

- System has been started
- Date & Time have been synchronized to a Network Time Server
- User "name" : Outlet (number) of Master M0 has been switched ON
- User "name" : Group (number) has been switched ON
- Dry Contact Input (number) has been opened
- Dry Contact Input (number) has been closed
- Dry Contact Output (number) has been opened
- Dry Contact Output (number) has been closed
- Session opened by user "name"

Severity Level 7, Debug:

Power Switch Master 4-port doesn't generate Severity Level 7.