



[www.AKCP.com](http://www.AKCP.com)

# SPX+ Notifications Manual



## Table of Contents

Introduction .....	3
Events.....	5
Events by category .....	6
Notifications .....	9
Notifications page .....	10
Create an Action with the Action Wizard.....	11
Dry Contact Action setup.....	12
Email Action setup.....	16
Relay Action setup.....	19
Siren Action setup .....	21
Door Action setup.....	23
SMS Action setup.....	25
Troubleshooting the SMS Action .....	27
SNMP Trap Action setup .....	28
SNMP v1 action .....	28
SNMP v2c action .....	31
SNMP v3 action .....	34
Telephone Call Action setup.....	38
Example notification setup: SMS Notification .....	42
Heartbeat Messages .....	48
Virtual Sensors .....	55
Fire Suppression System .....	70
Macro Description for actions .....	81
Troubleshooting.....	82

## Introduction

This manual covers all of the built in notifications on the SPX+ and how to configure them.

### What is the SPX+?

sensorProbeX+ is the latest generation of sensorProbe devices. In a completely new form factor that allows for 1U or 0U mounting with a low profile design it takes up much less cabinet space. SPX+ comes in several standard configurations, but with the AKCP configuration tool you are able to custom design a unit to your own specifications. Choose from various modules to specify the number of dry contacts, sensor ports or an internal modem.

Please check our SPX+ unit configurator tool on our website, where you can build your own custom configuration:

<http://www.akcp.com/configuratorTool/>

### SPX+ Features:

- Modular design, 1U or 0U mounting
- IP based, including SNMPv3, HTTPS, VPN
- Send encrypted SNMP Trap and Email Notifications
- Supports at least 4 Intelligent Sensors and up to 120 Dry Contacts
- Optional cellular modem with external antenna
- Notification Wizards
- Front and Rear Thermal Mapping for any server cabinet
- Low Cost Daisy Chained Temperature sensors
- Optional Expansion Module connectivity
- Virtual Sensors
- Patented Fire Suppression feature
- AKCP Swing Handle Lock support
- Optional Dry Contact Sensors in I/O and Opto-Isolated modes

**Important note:** Some of the pictures shown in this manual might not represent the actual Web UI of the unit; this is because we are constantly working on improving the firmware. Please provide us with feedback if you have any issues configuring your unit.

**What's the difference between the SP2+, SP2+X and SPX+?**

The SP2+ has 4 sensor ports for connecting any compatible AKCP sensor.

The SP2+X has 3 sensor ports and 1 expansion port, but generally the same as SP2+.

The SPX+ builds on the SP2+X features - supporting expansion modules - in a modular design allowing you to choose your own configuration.

We have several standard configurations, but with the AKCP Configuration Tool you are able to custom design a unit to your own specifications.

## Events

The **Events page** contains all logged events that the unit stores. It's functioning like a categorized syslog, where you can search for a specific event, and also export the logged entries to a file.

The screenshot shows the AKCP web interface with the 'Events' tab selected. The page title is 'All Events'. There is a search bar and filters for 'Date Start', 'to', and 'Date End'. Below these are buttons for 'Refresh', 'Export', and 'Options'. The main content is a table of events:

	Date/Time	Event
1	16/02/2016 14:56:30	Liquid Rope Detector Port 3 on Main board is now OFFLINE
2	16/02/2016 14:55:43	Liquid Rope Detector Port 3 on Main board status is Sensor Error
3	16/02/2016 14:55:39	Liquid Rope Detector Port 3 on Main board is now ONLINE
4	16/02/2016 14:51:52	Fuel Level Sensor Port 3 on Main board is now OFFLINE
5	16/02/2016 14:51:48	Fuel Level Sensor Port 3 on Main board status is Sensor Error
6	16/02/2016 14:51:44	Fuel Level Sensor Port 3 on Main board is now ONLINE
7	16/02/2016 14:51:28	Motion Detector Port 3 on Main board is now OFFLINE
8	16/02/2016 14:51:21	Motion Detector Port 3 on Main board status is Motion
9	16/02/2016 14:51:20	Motion Detector Port 3 on Main board is now ONLINE
10	16/02/2016 14:49:47	Dual Humidity Port 1 on Main board is 57.00 %, status is Normal
11	16/02/2016 14:49:47	Dual Temperature Port 1 on Main board is 25.50 °C, status is Normal
12	16/02/2016 14:49:47	Upgrade firmware was successfully completed
13	16/02/2016 14:49:46	Dual Humidity Port 4 on Main board status is Sensor Error
14	16/02/2016 14:49:46	Dual Temperature Port 4 on Main board status is Sensor Error
15	16/02/2016 14:49:46	Relay Port 2 on Main board status is Off

At the bottom of the table, there is a pagination control showing 'First', '<', '1', '2', '3', '4', '5', '6', '>', and 'Last'. The number '1' is highlighted, indicating the current page.

The default view is the **All Events** which contains all logs in one view. We'll explain all of the categories below.

	Date/Time	Event
1	10/02/2016 10:18:50	Ethernet link restored
2	10/02/2016 10:18:43	Ethernet link lost
3	25/02/2014 07:20:44	Ethernet link restored
4	25/02/2014 07:20:42	System boot up
5	25/02/2014 07:00:06	Database OK: Access DB updated. 1 users imported.
6	25/02/2014 07:00:03	System boot up

You can filter the events by type, by clicking on the tabs.  
In this picture we've chosen to display only the **System** events.

### Events by category:

**All Events** - contains all logs from the device, sorted by date and time; you can specify the start- and end dates to narrow the list, or choose a specific log category.

**System** - contains the logs for the device's system events, such as reboot, firmware update etc.

**Sensors** - contains logs for all sensor related events, such as status changes, online/offline etc. and the port number where the sensor is attached.

**Access** - contains logs for all user authentication-related events, such as access granted/denied.

**Notifications** - contains logs for the active notifications on the device, for example the result of an email notification, heartbeat message or an SNMP Trap.

The 'Filter Options' dialog box contains a dropdown menu for 'Number of display items per page' set to 15. Below it, the 'Severity Level' section has five checked checkboxes: Critical, Error, Warning, Notice, and Information. At the bottom right are 'OK' and 'Cancel' buttons.

In the **Options**, you can change the number of log entries displayed per page. The default is 15, it's possible to specify up to 100. Also you can filter by **Severity Level**.

If you click on the **Export** button, a confirmation popup window will appear, asking if you'd like to export the log entries.

If you answer yes, then the full event log will be downloaded as a text file.

The file name will contain the IP address of the unit, for example: log\_10.1.1.146.txt

The 'Event Log (2000 messages)' window shows a list of 11 log entries. Each entry includes a sequence number, a timestamp, and a description of the event. Some entries are highlighted in red to indicate errors or warnings.

Seq	Time	Message
1	16/02/2016 14:56:30	Liquid Rope Detector Port 3 on Main board is now OFFLINE
2	16/02/2016 14:55:43	Liquid Rope Detector Port 3 on Main board status is Sensor Error
3	16/02/2016 14:55:39	Liquid Rope Detector Port 3 on Main board is now ONLINE
4	16/02/2016 14:51:52	Fuel Level Sensor Port 3 on Main board is now OFFLINE
5	16/02/2016 14:51:48	Fuel Level Sensor Port 3 on Main board status is Sensor Error
6	16/02/2016 14:51:44	Fuel Level Sensor Port 3 on Main board is now ONLINE
7	16/02/2016 14:51:28	Motion Detector Port 3 on Main board is now OFFLINE
8	16/02/2016 14:51:21	Motion Detector Port 3 on Main board status is Motion
9	16/02/2016 14:51:20	Motion Detector Port 3 on Main board is now ONLINE
10	16/02/2016 14:49:47	Dual Humidity Port 1 on Main board is 57.00 %, status is Normal
11	16/02/2016 14:49:47	Dual Temperature Port 1 on Main board is 25.50 °C, status is Normal

The unit's **Summary page** also shows the **Event Log**, which contains all entries from the "All Events" category. The last 30 entries are shown, but if you're scrolling down the list, more events (30 more) will be loaded automatically. You can view the full log if you keep scrolling down.

If you have an expansion board, then the board name will be also logged in the events.

The screenshot shows the AKCP web interface with the 'Events' tab selected. The left sidebar has 'Access' highlighted. The main content area is titled 'Access' and contains a search bar, date range filters, and a table with one event entry.

Date/Time	Event
08/03/2016 18:33:04	Cabinet Door Port 1 on Cabinet Control Unit status is Closed

In this example picture we have a CCU (Cabinet Control Unit) connected. It has a built-in door port; the status has been logged in the Access category.

The screenshot shows the AKCP web interface with the 'Sensors' tab selected. The left sidebar has 'Sensors' highlighted. The main content area is titled 'Sensors' and contains a search bar, date range filters, and a table with six event entries.

Date/Time	Event
08/03/2016 18:40:01	Siren Port 1 on Main board status is Sensor Error
08/03/2016 18:37:54	Siren Port 2 on Main board status is Sensor Error
08/03/2016 18:36:19	Siren Port 2 on Main board is now ONLINE
08/03/2016 18:36:14	Siren Port 1 on Main board status is Sensor Error
08/03/2016 18:34:21	Siren Port 1 on Main board is now ONLINE
08/03/2016 18:33:07	Temperature Port 1 on Cabinet Control Unit is 27.00 °C, status is Normal

In this picture, you can see the difference between logs generated by sensors connected to the base unit (Main board) or the expansion board (Cabinet Control Unit).



## Notifications

If you setup a notification you can define the action to take when a sensor gives a reading beyond your previously set thresholds. This allows you to determine how you will be notified that a sensors reading has reached the specified thresholds (high warning, critical etc).

### What function do the different types of notifications provide?

The notifications are used to notify you when a sensor reading has hit a certain preset “critical” threshold. There are many ways you can be notified. They are as follows :

**SNMP Trap:** This form of notification sends out a signal to your SNMP trap receiver server.

**E-Mail:** This sends a notification via e-mail.

**SMS:** This sends an SMS message to your mobile phone.

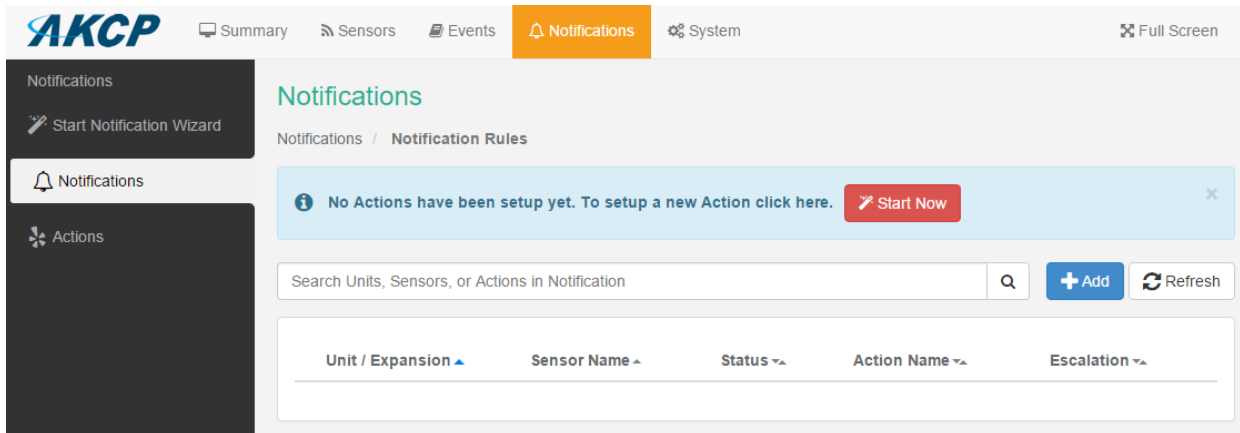
**Relay:** The relay is used as a switch, for example it could switch on an air con unit if the temperature reading of a temperature sensor reaches a certain threshold.

**Telephone call:** Will call you and play a customizable text to speech message.

**Door:** Controls the door with the Handle Lock sensor.

**Dry Contact:** You can control the Dry Contact ports with the notification, similar to the Relay action.

## Notifications page



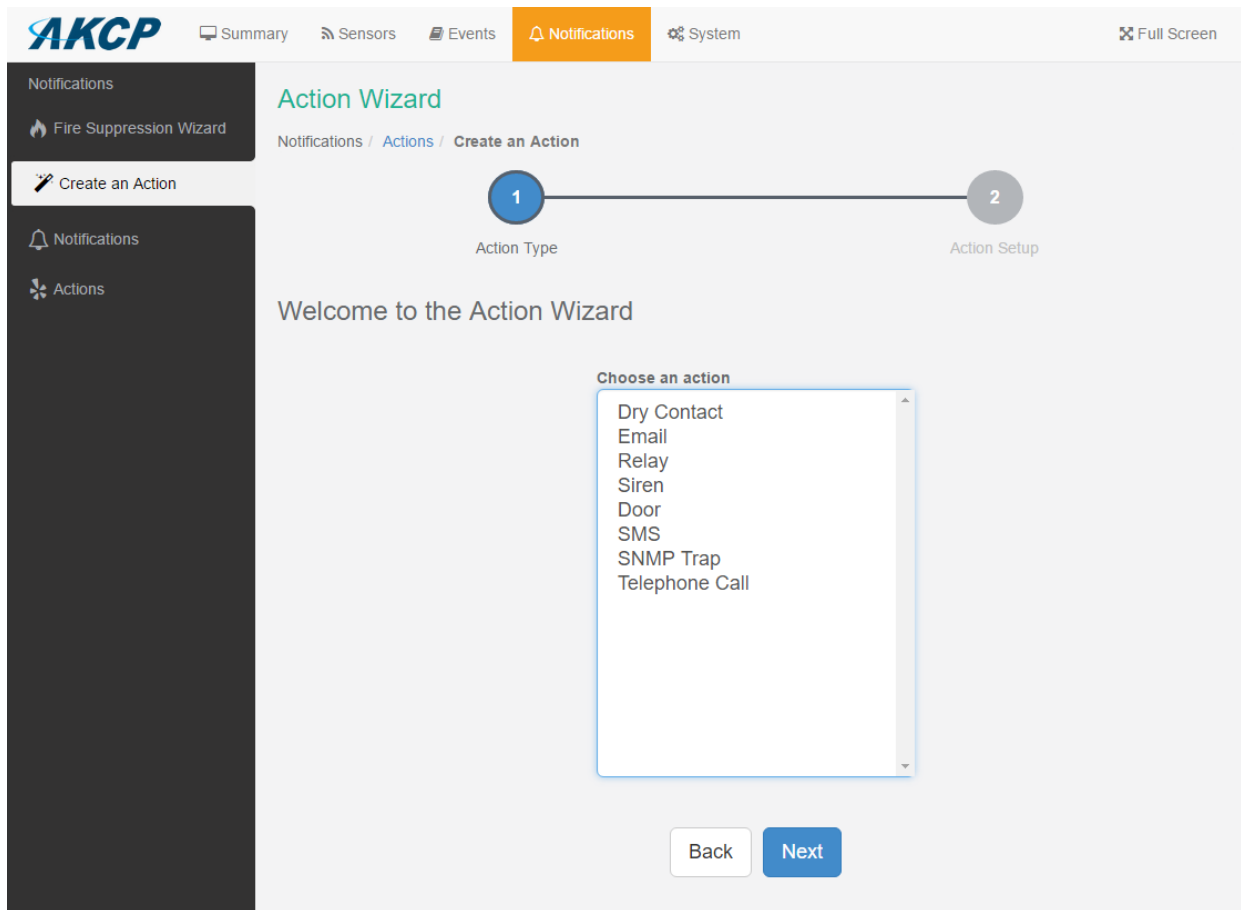
The screenshot shows the AKCP web interface. At the top, there's a navigation bar with 'Summary', 'Sensors', 'Events', 'Notifications' (highlighted), and 'System'. A 'Full Screen' button is on the right. On the left, a sidebar contains 'Notifications' and 'Actions' sections. The main area is titled 'Notifications' and shows a message: 'No Actions have been setup yet. To setup a new Action click here.' with a red 'Start Now' button. Below the message is a search bar and '+ Add' and 'Refresh' buttons. At the bottom, a table header is visible with columns: 'Unit / Expansion', 'Sensor Name', 'Status', 'Action Name', and 'Escalation'.

This is the **Notifications** page. If you have notifications set up, they will appear in the list and you can edit or remove them.

If you don't have any actions set up, you'll need to create them first before making notifications. The notice to run the **Action Wizard** is displayed on the top for easy action setup. Click on the **Start Now** button or the **Start Notification Wizard** tab to start the wizard. In the next section we'll show you how to set up the actions.

After you have actions set up, you can link the actions to a sensor with the **Add** button. All notifications are following the same setup steps with the **Link Notification Wizard**. We'll show you how to use this wizard with an example notification below in the manual with an SMS action, you'll then be able to configure other notifications similarly.

## Create an Action with the Action Wizard



This is the Action Wizard's welcome page; the supported Web UI configurable actions are shown. Select one to configure and click **Next**.

We'll show you each action's configuration in the following sections.

*Note:* APS (AKCess Pro Server) allows more types of actions to be set up.

## Dry Contact Action setup

You can use the Dry Contact Action to control a dry contact when a sensor reaches a certain threshold.

The screenshot shows the 'Action Wizard' interface in the AKCP software. The breadcrumb trail is 'Notifications / Actions / Create an Action'. A progress bar at the top shows two steps: '1 Dry Contact Information' (active) and '2 Complete'. The main content area is titled 'Step 1 - Dry Contact Information' and contains the following fields:

- Action Name:** Dry Contact Action
- Unit / Expansion:** Main board
- Dry Contact:** Dry Contact Port 3
- Action:** Turn Low
- Delay Before Action:** 0 0s

A note below the fields states: **Note: Controlled dry contact must be set to notification control mode.**

At the bottom, there are three buttons: 'Back', 'Finish', and 'Cancel'. Below these is a large green button labeled 'Finish and Setup Notification'.

*Note:* When using the RJ45 I/O Dry Contacts, they need to be connected to the unit before they can be configured, and have to be in the **Output direction** (see below).

If you click on the **Finish and Setup Notification** button, this will launch the **Link Notification Wizard** where you can use the new action for making a notification.

*Note:* If you've connected an expansion board, you can choose it from the Unit/Expansion selection menu as shown below:

The image shows a close-up of the 'Unit / Expansion' dropdown menu. The menu is open, showing three options: 'Cabinet Control Unit' (selected and highlighted in blue), 'Cabinet Control Unit', and 'Main board'. The label 'Relay' is visible below the dropdown.

You'll have the following options for controlling the Dry Contact with the action:

Action	Turn Low
Delay Before Action	Turn Low Turn High Turn Low Until Sensor Normal Turn High Until Sensor Normal Turn Low Until Acknowledge Turn High Until Acknowledge Cycle the Dry Contact

Cycle Time	5	5s
------------	---	----

If you choose to cycle the dry contact, you can specify the cycle time.

You'll need to change the RJ45 I/O Dry Contact sensor to **Output direction** mode from the **Sensors** page as shown below:

1 Auto Sense Thermal Map

2 Auto Sense Thermal Map

3 Auto Sense Dry Contact I/O

4 Auto Sense Handle Lock

Dry Contact I/O Advanced

Sensor Name: Dry Contact Port 3

Sensor Status: Normal

Sensor Currently: Online

Direction:  Input  Output

Boot Up State:  Low  High

Description of Status When High: High

Description of Status When Low: Low

Description of Status When Sensor Error: Sensor Error

Save Cancel

Change the **Direction** from Input to **Output** and click **Save**.

Dry Contact I/O    Advanced

Sensor Control    Action ▾

Toggle    5    5s

Enable Calendar     On  Off

Graph Enable     Enable  Disable

Filter Status     Enable  Disable

Save    Cancel

For the I/O Dry Contacts you can choose to manually control the sensor from the **Advanced** tab using the Sensor Control button:

Sensor Control    Action ▾

Toggle

Enable Calendar

- Low
- High
- Toggle High-Low
- Toggle Low-High

For the input only Dry Contacts, the configuration doesn't need changing.

AKCP Summary Sensors Events Notifications System Full Screen

Boards

PDU+

Module 0 - 4x Sensor Ports

Module 1 - 4x Sensor Ports

Module 2 - 10x Dry Contacts

Module 3 - 20x Dry Contacts

Virtual Sensors

Smart Sensor Recovery

Get SNMP OID

### Module 3 - 20x Dry Contacts (1E0000AB)

Sensors / Module 3 - 20x Dry Contacts (1E0000AB)

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Dry Contact Input Advanced Continuous Time

Sensor Name: Dry Contact Port 1

Sensor Status: Normal

Sensor Currently: Online

Description of Status When Normal: Normal

Description of Status When Critical: Critical

Description of Status When Sensor Error: Sensor Error

Save Cancel

Dry Contact Input Advanced Continuous Time

Normal State:  Close/GND  Open/+5 Volts

Enable Calendar:  On  Off

Graph Enable:  Enable  Disable

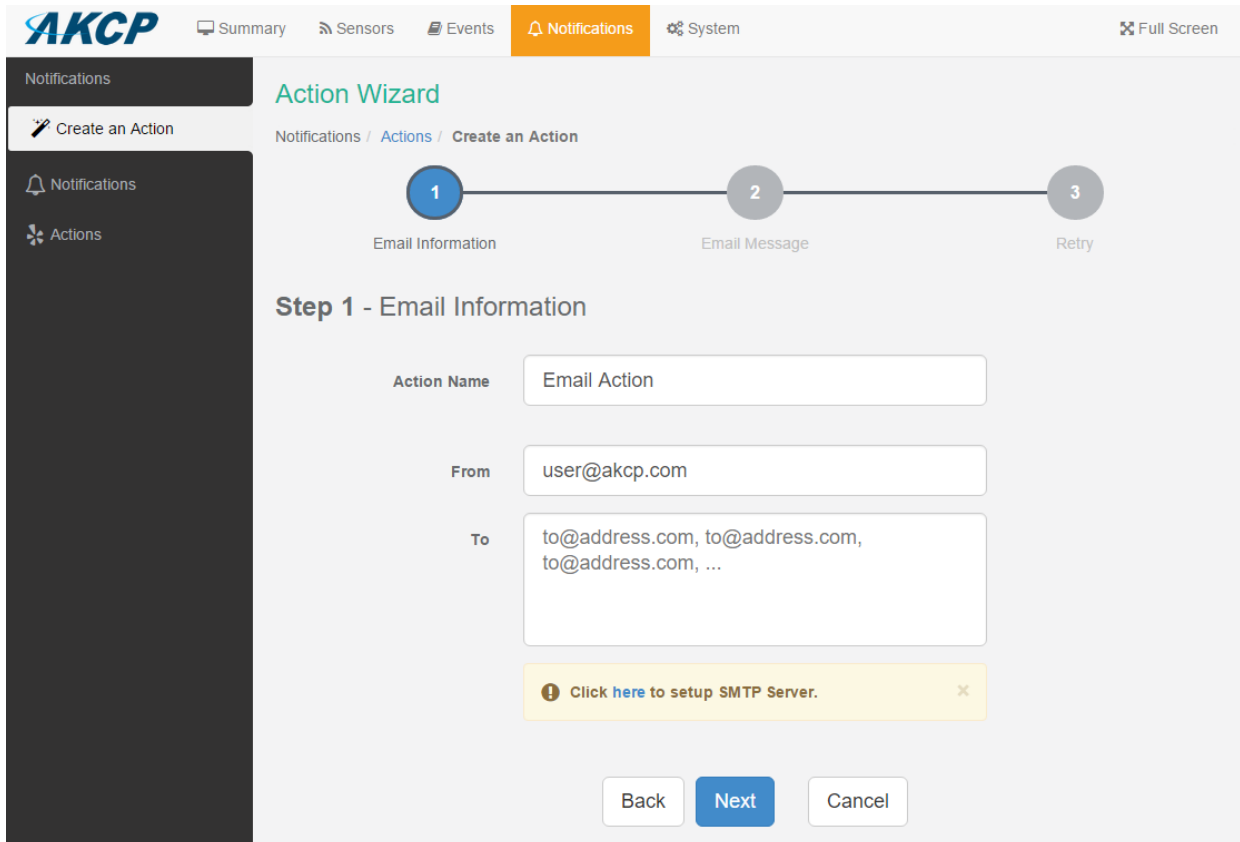
Filter Status:  Enable  Disable

Save Cancel

You can select the Normal State for a given Dry Contact from the Advanced tab, as well as enabling the Calendar, Graphing and Filter Status options.

## Email Action setup

You can use the Email Action to send a notification by email when a sensor reaches a certain threshold.



The screenshot shows the AKCP web interface with the 'Notifications' menu open and 'Create an Action' selected. The 'Action Wizard' is displayed, showing a three-step process: 1. Email Information, 2. Email Message, and 3. Retry. The current step is 'Step 1 - Email Information', which includes the following fields:

- Action Name:** Email Action
- From:** user@akcp.com
- To:** to@address.com, to@address.com, to@address.com, ...

A yellow notification box at the bottom of the form states: "Click here to setup SMTP Server." Below the form are three buttons: 'Back', 'Next', and 'Cancel'.

*Note:* The SMTP server settings needed to be configured on the unit, before this action works.

All email actions will use this SMTP server for sending emails.

You can find more information in the Introduction manual about how to set up the SMTP server on the System page although it's very straight-forward.

Either click on the link on the notice, or go to the **System/SMTP page** for the configuration.



### Action Wizard

Notifications / Actions / Create an Action

1 — 2 — 3  
Email Information — Email Message — Retry

#### Step 2 - Email Message

**Subject**

**Body**

After clicking “**Next**” you will get a page where you can input the e-mail name and message. Press the “**Customize**” button and the fields will re-write in a format that will allow for an automated e-mail that will display the sensor information.

#### Step 2 - Email Message

**Subject**

**Body**

For all possible macro values (dynamic text values starting with \$) you can see a detailed list at the end of this manual.

**Action Wizard**

Notifications / Actions / Create an Action

1 — 2 — 3

Email Information      Email Message      Retry

### Step 3 - Retry

Maximum Times to Retry:

Retry Interval:  15s

These parameters set the maximum number of times to send the email notification and the time interval between each notification.

If you click on the **Finish and Setup Notification** button, this will launch the **Link Notification Wizard** where you can use the new action for making a notification.

## Relay Action setup

You can use the Relay Action to control a relay when a sensor reaches a certain threshold.

The screenshot shows the 'Action Wizard' interface in the AKCP software. The breadcrumb trail is 'Notifications / Actions / Create an Action'. A progress bar at the top indicates two steps: '1 Relay Information' (active) and '2 Complete'. The 'Step 1 - Relay Information' section contains the following fields:

- Action Name:** Relay Action
- Unit / Expansion:** Main board
- Relay:** Relay Port 2
- Action:** Turn On
- Delay Before Action:** 0 0s

A note below the fields states: "Note: Controlled relay must be set to notification control mode." At the bottom, there are three buttons: 'Back', 'Finish', and 'Cancel'. A large green button labeled 'Finish and Setup Notification' is positioned below these.

*Note:* The relay needs to be connected to the unit before it can be configured.

If you click on the **Finish and Setup Notification** button, this will launch the **Link Notification Wizard** where you can use the new action for making a notification.

*Note:* If you've connected an expansion board, you can choose it from the Unit/Expansion selection menu as shown below:

The image shows a close-up of the 'Unit / Expansion' dropdown menu. The menu is open, showing two options: 'Cabinet Control Unit' (highlighted in blue) and 'Main board'.

You'll have the following options for controlling the relay with the action:

The screenshot shows a configuration interface with two labels: 'Action' and 'Delay Before Action'. The 'Action' dropdown menu is open, displaying a list of options: 'Turn On' (highlighted in blue), 'Turn Off', 'Turn On Until Sensor Normal', 'Turn Off Until Sensor Normal', 'Turn On Until Acknowledge', 'Turn Off Until Acknowledge', and 'Cycle the Relay'.

If you click on the **Finish and Setup Notification** button, this will launch the **Link Notification Wizard** where you can use the new action for making a notification.

The screenshot shows a 'Cycle Time' input field with the value '5' and a unit selector set to '5s'.

If you choose to cycle the relay, you can specify the cycle time.

On the **Sensors** page you can specify additional settings for the relay as shown below:

The screenshot shows the 'Advanced' settings for a 'Relay' sensor. At the top, there are four sensor icons labeled 1 through 4, each with an 'Auto Sense' button. Below the icons are labels: 'Thermal Map', 'Thermal Map', 'Relay', and 'Handle Lock'. The 'Relay' icon is highlighted with a blue border. Below the icons, there are two tabs: 'Relay' and 'Advanced'. The 'Advanced' tab is selected, showing the following settings:

- Sensor Control:** Action ▾
- Toggle:** 5 5s
- Enable Calendar:**  On  Off
- Graph Enable:**  Enable  Disable
- Filter Status:**  Enable  Disable

At the bottom, there are 'Save' and 'Cancel' buttons.

You can choose to manually control the sensor from the **Advanced** tab using the Sensor Control button.

## Siren Action setup

You can use the Siren Action to turn on the siren and strobe light when a sensor reaches a certain threshold.

The screenshot shows the 'Action Wizard' interface in the AKCP software. The breadcrumb trail is 'Notifications / Actions / Create an Action'. A progress bar at the top shows two steps: '1 Siren Information' (active) and '2 Complete'. The 'Step 1 - Siren Information' section contains the following fields:

- Action Name:** Text input field containing 'Siren Action'.
- Unit / Expansion:** Dropdown menu with 'Main board' selected.
- Siren:** Dropdown menu with 'Siren Port 3' selected.
- Action:** Dropdown menu with 'Turn Off' selected.
- Delay Before Turn On:** Text input field containing '0' with a '0s' unit indicator.

Below the fields is a note: **Note: Controlled siren must be set to notification control mode.** At the bottom are three buttons: 'Back', 'Finish', and 'Cancel'. A large green button labeled 'Finish and Setup Notification' is positioned below the 'Finish' button.

*Note:* The siren needs to be connected to the unit before it can be configured.

You'll have the following options for controlling the siren with the action:

A close-up of the 'Action' dropdown menu. The 'Action' label is on the left. The dropdown list contains the following options:

- Turn Off (highlighted in blue)
- Turn On
- Until Sensor Normal
- Until Acknowledge
- Defined Time

The 'Delay Before Turn On' label is visible on the left side of the dropdown menu.

If you choose Defined Time, you can specify the time in seconds for how long the siren should be turned on.

Note: If you've connected an expansion board, you can choose it from the Unit/Expansion selection menu as shown below:

A screenshot of a web interface showing a dropdown menu for 'Unit / Expansion'. The menu is open, displaying three options: 'Cabinet Control Unit' (selected and highlighted in blue), 'Cabinet Control Unit', and 'Main board'. Below the dropdown, the word 'Relay' is visible.

On the **Sensors** page you can specify additional settings for the siren as shown below:

A screenshot of the 'Sensors' page in the SPX+ interface. The top section shows four sensor slots, each with an 'Auto Sense' button and a sensor icon. Slot 1 and 2 are 'Thermal Map' sensors. Slot 3 is a 'Siren Strobe' sensor, highlighted with a blue border. Slot 4 is a 'Handle Lock' sensor. Below this, there are two tabs: 'Siren Strobe' (selected) and 'Advanced'. The 'Siren Strobe' tab contains the following settings:

- Sensor Control:** Action ▾
- Toggle:** 5 (with a 5s unit indicator)
- Enable Calendar:**  On  Off
- Graph Enable:**  Enable  Disable
- Filter Status:**  Enable  Disable

At the bottom of the settings are two buttons: 'Save' (red) and 'Cancel' (white).

You can choose to manually control the sensor from the **Advanced** tab using the Sensor Control button.

## Door Action setup

You can use the Door Action to open/close the door when a sensor reaches a certain threshold.

The screenshot shows the AKCP web interface with the 'Notifications' menu selected. The 'Action Wizard' is open, showing 'Step 1 - Door Information'. The wizard consists of two steps: 'Door Information' (Step 1) and 'Complete' (Step 2). The 'Door Information' step includes the following fields:

- Action Name:** Door Action
- Unit / Expansion:** Main board
- Door:** Door Port 4
- Action:** Close
- Delay Before Action:** 0 0s

At the bottom of the form, there are three buttons: 'Back', 'Finish', and 'Cancel'. Below these is a large green button labeled 'Finish and Setup Notification'.

*Note:* The Handle Lock needs to be connected to the unit before it can be configured.

You'll have the following options for controlling the door with the action:

The screenshot shows a dropdown menu for the 'Action' field. The menu is open, displaying the following options:

- Close
- Open
- Open Until Sensor Normal
- Open Until Acknowledge
- Defined Time

Note: If you've connected an expansion board, you can choose it from the Unit/Expansion selection menu as shown below:

A dropdown menu for 'Unit / Expansion' with 'Cabinet Control Unit' selected. Below it, a 'Relay' dropdown menu shows 'Cabinet Control Unit' and 'Main board' as options.

If you choose Defined Time, you can specify the time in seconds for how long the door should be opened before closing it again:

The 'Action' dropdown is set to 'Defined Time'. The 'Door Open Period' is set to '5' seconds.

On the **Sensors** page you can specify additional settings for the Handle Lock as shown below:

The 'Main board' sensors page shows four sensors: 1 Thermal Map, 2 Thermal Map, 3 N/C, and 4 Handle Lock. The 'Handle Lock' sensor is selected, and its configuration is shown in the 'Advanced' tab. The configuration includes: Sensor Name (Door Port 4), Sensor Status (Closed), Sensor Currently (Online), Door Held Open Alert (30s), Door Lock Time (5s), and a Manual Control 'Unlock' button. 'Save' and 'Cancel' buttons are at the bottom.

You can choose to manually unlock the door using the **Unlock** button. Further configuration of the Handle Lock is detailed in the separate **SP2+ Swing Handle Lock manual**.



## SMS Action setup

You can use the SMS Action to send a notification by SMS when a sensor reaches a certain threshold.

The unit can send an SMS, or Voice alert to many different phone numbers, but you can specify only one phone number per action when setting it up. However, please keep in mind that both the SMS and the dial up actions such as Voice will call to the first number, then after sending to this number, it will call to the second number and so on. So, if you have many numbers in the call list, it will take that much more time to finish sending the SMS or dial up Voice call alerts.

*Note:* The modem module is needed and configured for this action.

The screenshot shows the AKCP web interface. At the top, there is a navigation bar with the AKCP logo and menu items: Summary, Sensors, Events, Notifications (highlighted), and System. A 'Full Screen' button is also present. On the left, a sidebar contains 'Notifications' and 'Actions' (selected). The main content area is titled 'Action Wizard' and shows a progress bar with three steps: 1. SMS Information (active), 2. SMS Message, and 3. Retry. Below the progress bar, the 'Step 1 - SMS Information' section contains two input fields: 'Action Name' with the value 'SMS Action' and 'Phone Number' with the value '0123456789 or +0123456789'. At the bottom of the form are three buttons: 'Back', 'Next' (highlighted in blue), and 'Cancel'.

After typing in your phone number, click **Next**.  
You can specify only one phone number per action.

### Action Wizard

Notifications / Actions / Create an Action

1 — 2 — 3  
SMS Information      SMS Message      Retry

#### Step 2 - SMS Message

From:

SMS Message:

After clicking “**Next**” you will get a page where you can input the SMS message. Press the “**Customize**” button and the fields will re-write in a format that will allow for an automated SMS that will display the sensor information.

#### Step 2 - SMS Message

From:

SMS Message:

For all possible macro values (dynamic text values starting with \$) you can see a detailed list at the end of this manual.

**Action Wizard**

Notifications / Actions / Create an Action

1 — 2 — 3

SMS Information      SMS Message      Retry

### Step 3 - Retry

Maximum Times to Retry:

Retry Interval:  10s

These parameters set the maximum number of times to send the SMS notification and the time interval between each notification.

If you click on the **Finish and Setup Notification** button, this will launch the **Link Notification Wizard** where you can use the new action for making a notification.

### ***Troubleshooting the SMS Action***

If you are having trouble sending the SMS alerts, please go through the check list below. Also, try moving the modem's antenna to a slightly different location.

Test the SIM card on mobile phone: verify the account is active, has adequate credit for making phone calls and that the PIN code is disabled.

Ensure the SIM card is properly inserted in the modem's slot. Inserting and removing the SIM is only possible while the unit is powered off; otherwise you can damage the SIM or the unit.

## SNMP Trap Action setup

You can use the SNMP Trap Action to send a notification (Trap message) to your SNMP Trap Receiver server when a sensor reaches a certain threshold.

### SNMP v1 action

The screenshot shows the 'Action Wizard' interface in the AKCP software. The navigation bar includes 'Summary', 'Sensors', 'Events', 'Notifications', and 'System'. The 'Notifications' section is active, showing 'Create an Action', 'Notifications', and 'Actions' options. The wizard progress shows three steps: 1. SNMP Information, 2. SNMP Trap Type, and 3. Retry. The current step is 'Step 1 - SNMP Information', which includes the following fields:

- Action Name:** SNMP Trap Action
- Trap Version:** v1 (selected), v2c, v3 (No License)
- Port:** 162
- Destination IP Address:** 192.168.0.XXX
- Community:** Community

At the bottom of the form are three buttons: 'Back', 'Next', and 'Cancel'.

Enter your Destination IP Address and Community; the default SNMP port is automatically selected.

Notifications / Actions / Create an Action

1 — 2 — 3  
SNMP Information      SNMP Trap Type      Retry

### Step 2 - SNMP Trap Type

SNMP Trap Type:

VarBind

- specificTypeTraps
- generalTypeTraps
- specific & generalTypeTraps
- statusTypeTraps
- customTypeTraps

- Sensor Name
- Sensor Description
- Sensor Type
- Sensor Sub Index
- Sensor Status Name
- Board ID
- Board Description
- Event Time Stamp
- Event Class Number:
- Event Class Name:
- Sensor Decimal Value
- Sensor ID

A different trap message is sent for each sensor type such as temperature, humidity, and switch. The trap messages include *VarBind* fields that include the current sensor status (Normal, Critical High, Warning High, Critical Low, Warning Low, and sensorError), the current sensor value, the level exceeded, the sensor index, the sensor name, and the sensor description.

You can enable or disable specific fields if you choose the *customTypeTraps* from the drop-down list.

### Action Wizard

Notifications / Actions / Create an Action

1 — 2 — 3

SNMP Information      SNMP Trap Type      Retry

#### Step 3 - Retry

Maximum Time to Retry:

Retry Intervals:  10s

These parameters set the maximum number of times to send the trap notification and the time interval between each notification.

If you click on the **Finish and Setup Notification** button, this will launch the **Link Notification Wizard** where you can use the new action for making a notification.

## SNMP v2c action

**Action Wizard**

Notifications / Actions / Create an Action

1 — 2 — 3 — 4  
SNMP Information — SNMP Details — SNMP Trap Type — Retry

### Step 1 - SNMP Information

Action Name:

Trap Version:

Port:

Destination IP Address:

Community:   
This field is required.

Enter your Destination IP Address and Community; the default SNMP port is automatically selected.

**Action Wizard**

Notifications / Actions / Create an Action

1 — 2 — 3 — 4  
SNMP Information — SNMP Details — SNMP Trap Type — Retry

### Step 2 - SNMP Details

SNMP Trap or SNMP Inform:

You can choose the packet to be sent between SNMP Trap or Inform packet.

Notifications / Actions / Create an Action

1 — 2 — 3 — 4

SNMP Information      SNMP Details      SNMP Trap Type      Retry

### Step 3 - SNMP Trap Type

SNMP Trap Type:

VarBind

- Sensor Status
- Sensor Value
- Sensor Level Exceeded
- Sensor Index
- Sensor Name
- Sensor Description
- Sensor Type
- Sensor Sub Index
- Sensor Status Name
- Board ID
- Board Description
- Event Time Stamp
- Event Class Number:
- Event Class Name:
- Sensor Decimal Value
- Sensor ID

Back    Next    Cancel

A different trap message is sent for each sensor type such as temperature, humidity, and switch. The trap messages include *VarBind* fields that include the current sensor status (Normal, Critical High, Warning High, Critical Low, Warning Low, and sensorError), the current sensor value, the level exceeded, the sensor index, the sensor name, and the sensor description.

You can enable or disable specific fields if you choose the *customTypeTraps* from the drop-down list.



### Action Wizard

Notifications / Actions / Create an Action

- 1 SNMP Information
- 2 SNMP Details
- 3 SNMP Trap Type
- 4 **Retry**

#### Step 4 - Retry

Maximum Time to Retry:

Retry Intervals:  10s

These parameters set the maximum number of times to send the trap notification and the time interval between each notification.

If you click on the **Finish and Setup Notification** button, this will launch the **Link Notification Wizard** where you can use the new action for making a notification.

## SNMP v3 action

Only SNMPv3 provides secure SNMP communication. The previous versions are considered unsecure and unencrypted.

This feature requires a separate license. You can read more details about the licensing in the Introduction manual.

The screenshot shows the 'Action Wizard' interface with a progress bar at the top indicating four steps: 1. SNMP Information, 2. SNMP Details, 3. SNMP Trap Type, and 4. Retry. Step 1 is currently active. Below the progress bar, the title 'Step 1 - SNMP Information' is displayed. The form contains the following fields and controls:

- Action Name:** A text input field containing 'SNMP Trap Action'.
- Trap Version:** A set of three radio buttons labeled 'v1', 'v2c', and 'v3'. The 'v3' button is selected and highlighted in blue.
- Port:** A text input field containing '162'.
- Destination IP Address:** A text input field containing '192.168.0.XXX'.
- Community:** A text input field containing 'Community'.

At the bottom of the form, there are three buttons: 'Back', 'Next' (highlighted in blue), and 'Cancel'.

Enter your Destination IP Address and Community; the default SNMP port is automatically selected.

### Action Wizard

Notifications / Actions / Create an Action

1  
SNMP Information

2  
SNMP Details

3  
SNMP Trap Type

4  
Retry

#### Step 2 - SNMP Details

SNMP Trap or SNMP Inform  SNMP Trap  SNMP Inform

SNMPv3 User Name

SNMPv3 engineID

Security Level

Authentication Protocol

Authentication Protocol Pass Phrase

Privacy Protocol

Privacy Protocol Pass Phrase

You can choose the packet to be sent between SNMP Trap or Inform packet. Configure the settings for authentication, and access privileges. Below we'll give a quick description of each setting:

<u>Level</u>	<u>Authentication</u>	<u>Encryption</u>	<u>Description</u>
noAuthNoPriv	Username	No	Match Username (same as SNMP v1/v2c)
authNoPriv	MD5 or SHA	No	Auth Based on Algorithms (check password)
authPriv	MD5 or SHA	Yes - DES	Auth Algorithms and Encryption

Basically if you select **noAuthNoPriv** then the setup will be the same as with SNMP v1 and v2c versions: authentication is only checked by unencrypted username.

**authNoPriv** will provide password protection but no encryption.

**authPriv** provides encrypted username and password protection.

Notifications / Actions / Create an Action

1 — 2 — 3 — 4

SNMP Information      SNMP Details      SNMP Trap Type      Retry

### Step 3 - SNMP Trap Type

SNMP Trap Type:

VarBind

- Sensor Status
- Sensor Value
- Sensor Level Exceeded
- Sensor Index
- Sensor Name
- Sensor Description
- Sensor Type
- Sensor Sub Index
- Sensor Status Name
- Board ID
- Board Description
- Event Time Stamp
- Event Class Number:
- Event Class Name:
- Sensor Decimal Value
- Sensor ID

Back    Next    Cancel

A different trap message is sent for each sensor type such as temperature, humidity, and switch. The trap messages include *VarBind* fields that include the current sensor status (Normal, Critical High, Warning High, Critical Low, Warning Low, and sensorError), the current sensor value, the level exceeded, the sensor index, the sensor name, and the sensor description.

You can enable or disable specific fields if you choose the *customTypeTraps* from the drop-down list.

### Action Wizard

Notifications / Actions / Create an Action

- 1 SNMP Information
- 2 SNMP Details
- 3 SNMP Trap Type
- 4 **Retry**

#### Step 4 - Retry

Maximum Time to Retry

Retry Intervals  10s

These parameters set the maximum number of times to send the trap notification and the time interval between each notification.

If you click on the **Finish and Setup Notification** button, this will launch the **Link Notification Wizard** where you can use the new action for making a notification.

## Telephone Call Action setup

You can use the Telephone Call Action to send custom voice call alerts to your phone when a sensor reaches a certain threshold.

The unit can send an SMS, or Voice alert to many different phone numbers, but you can specify only one phone number per action when setting it up. However, please keep in mind that both the SMS and the dial up actions such as Voice will call to the first number, then after sending to this number, it will call to the second number and so on. So, if you have many numbers in the call list, it will take that much more time to finish sending the SMS or dial up Voice call alerts.

*Note:* The modem module is needed and configured for this action.

The screenshot shows the AKCP web interface. At the top, there is a navigation bar with the AKCP logo and tabs for Summary, Sensors, Events, Notifications (selected), and System. A Full Screen button is also present. On the left, a sidebar contains 'Notifications' and 'Actions' sections. The main content area is titled 'Action Wizard' and shows a progress bar with three steps: 1. Telephone Call Information, 2. Message, and 3. Retry. Step 1 is currently active. Below the progress bar, the 'Step 1 - Telephone Call Information' section contains two input fields: 'Action Name' with the value 'Telephone Call Action' and 'Phone Number' with the value '0123456789 or +0123456789'. At the bottom of this section are three buttons: 'Back', 'Next' (highlighted in blue), and 'Cancel'.

After typing in your phone number, click **Next**.  
You can specify only one phone number per action.

### Action Wizard

Notifications / Actions / Create an Action

1 Telephone Call Information — 2 Message — 3 Retry

#### Step 2 - Speech Output and Message

Speech Volume:  Min  Avg  Max

Speech Speed:  Min  Avg  Max

Speech Acknowledge:

Message:

Now you can select the **volume** and **playback speed** for your phone call. The call will be made by using a Text to Speech module.

You can also specify to have the call acknowledged:

Speech Acknowledge:

Message:

If Speech Acknowledgement is selected the user will be requested to dial 1 on their phone when prompted in the call to confirm their acknowledgement.

Message

`\${DESCRIPTION}` is now `\${VALUE}` `\${UNIT}`,  
status is now `\${STATUS}`

Preview Restore Default Macro Description

A preview of the message that will be read is displayed, which you may customize further. The sent message will include the details relevant to your sensor.

For all possible macro values (dynamic text values starting with \$) you can see a detailed list at the end of this manual.



### Action Wizard

Notifications / Actions / Create an Action

1 Telephone Call Information — 2 Message — 3 Retry

#### Step 3 - Retry

Maximum Times to Retry

Retry Interval  10s

These parameters set the maximum number of times to send the call notification and the time interval between each notification.

If you click on the **Finish and Setup Notification** button, this will launch the **Link Notification Wizard** where you can use the new action for making a notification.

## Example notification setup: SMS Notification

The screenshot shows the 'Actions' page in the AKCP interface. The breadcrumb is 'Notifications / Actions'. There is a search bar for 'Search Actions' and buttons for '+ Add' and 'Refresh'. The table below has the following data:

Action Type ▲	Action Name ▲	
SMS	SMS Action	

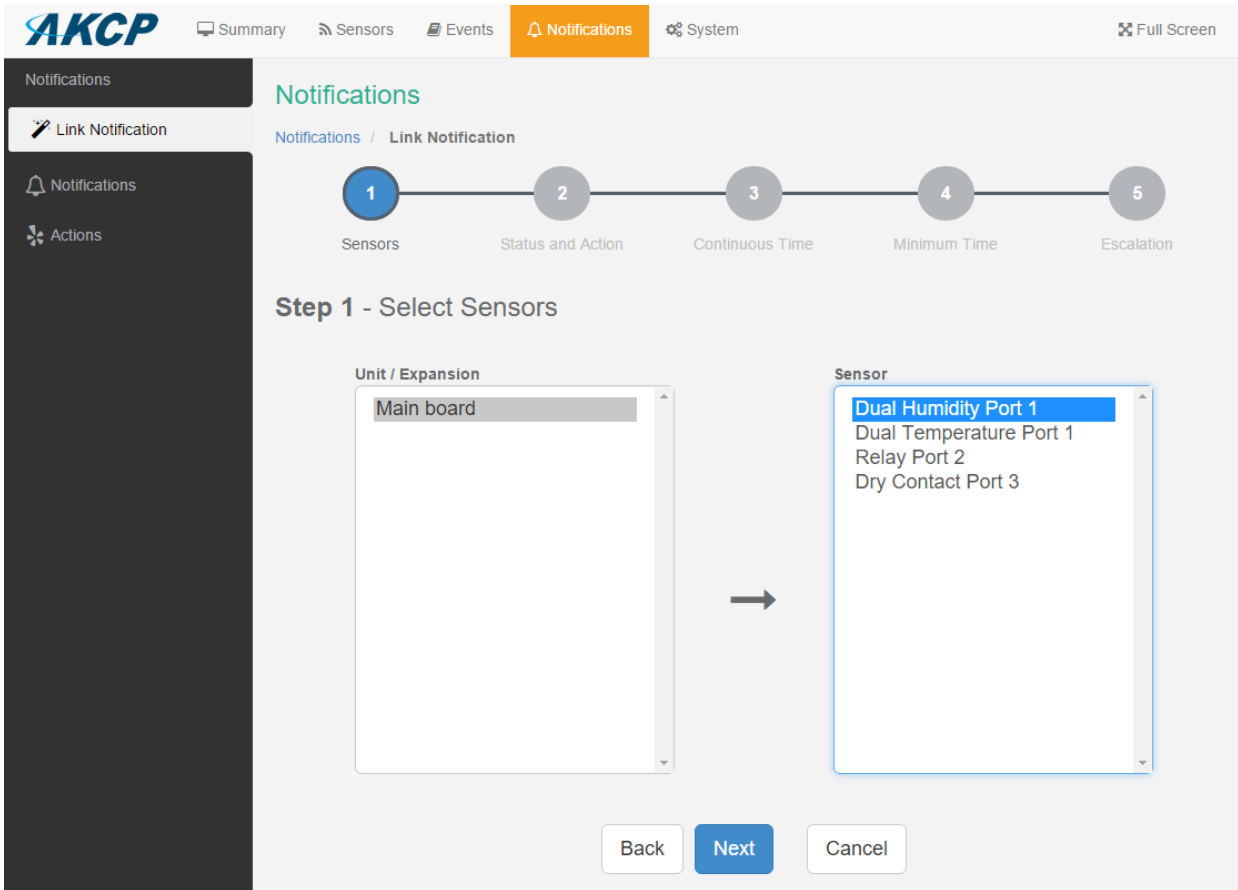
In our example we've set up an SMS action and we'll link that to notify us by SMS when the *Humidity sensor's* value reaches *High Critical*.

The screenshot shows the 'Notifications' page in the AKCP interface. The breadcrumb is 'Notifications / Notification Rules'. There is a search bar for 'Search Units, Sensors, or Actions in Notification' and buttons for '+ Add' and 'Refresh'. The table below has the following columns:

Unit / Expansion ▲	Sensor Name ▲	Status ▼	Action Name ▼	Escalation ▼

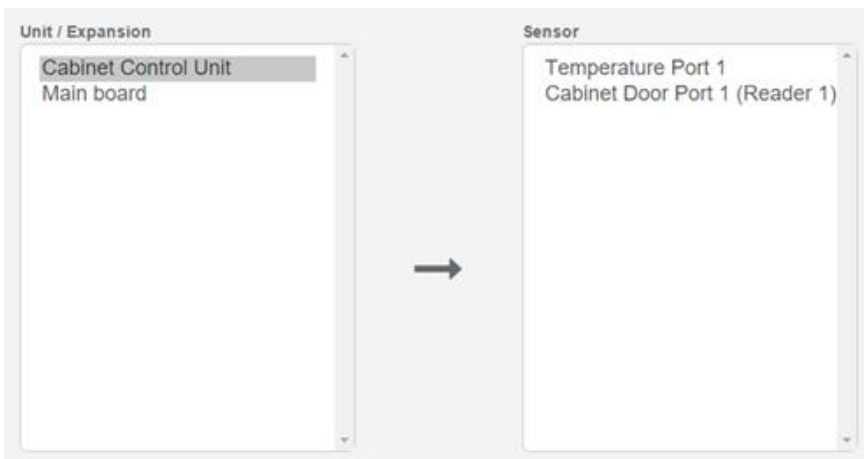
On the **Notifications** menu we click on **Add**.  
This will start the **Link Notification Wizard**.

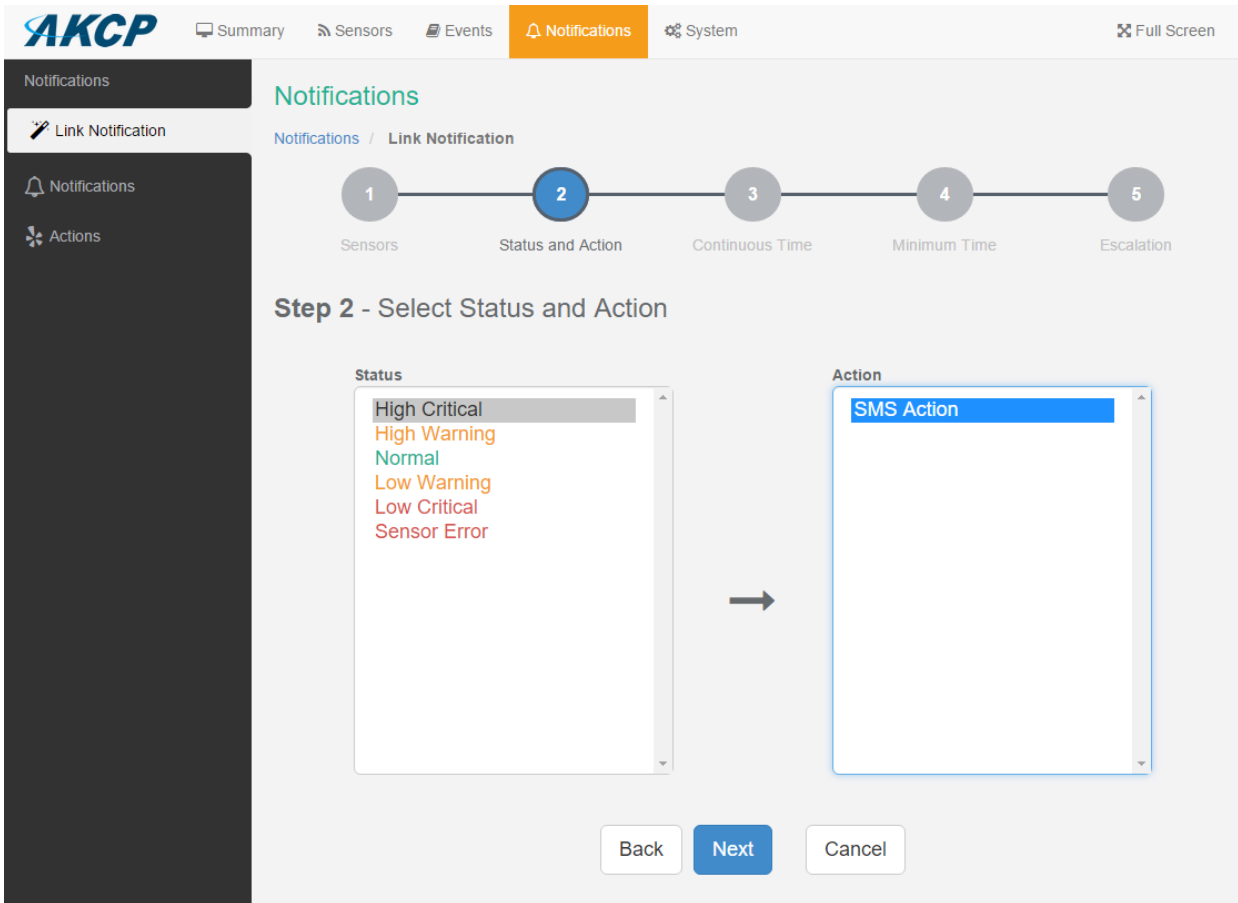
You can set up any notification with any action with the same steps as in this example.



The first step is to select the sensor that we'll link the notification to. You could also select multiple sensors for a single notification.

*Note:* If you connect an expansion board, you'll be able to select sensors from the expansion board as well, as shown below:





Next we choose the status *High Critical* for the sensor, and use the previously created SMS Action. You could also select multiple statuses for a sensor.

*Note:* If you connect an expansion board, you might be able to select special statuses valid only for the expansion board, as shown below:



Notifications

Link Notification

Notifications

Actions

Notifications

Link Notification

1 Sensors 2 Status and Action 3 Continuous Time 4 Minimum Time 5 Escalation

Step 3 - Continuous Time for Sensor to be in Status listed below before Notification

High Critical 2 2s

Back Next Cancel

We set the continuous time as 2 seconds - this means the sensor's state has to remain at least 2 seconds in the chosen state before the notification runs.

Notifications

Link Notification

Notifications

Actions

Notifications

Link Notification

1 Sensors 2 Status and Action 3 Continuous Time 4 Minimum Time 5 Escalation

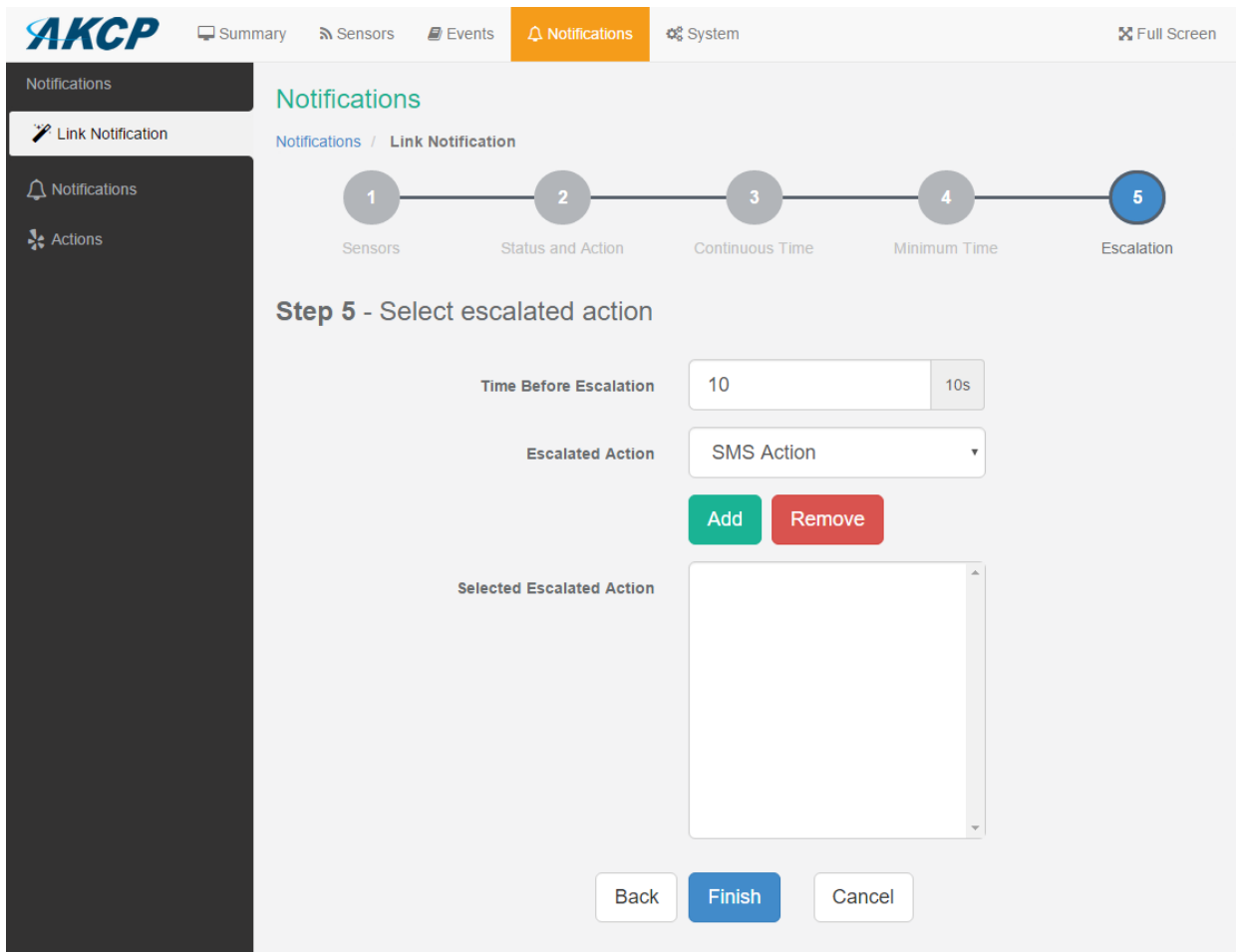
Step 4 - Minimum Time between each Notification

High Critical 0 0s

Back Next Cancel

We don't use a minimum time between notifications (default value).

If you get multiple notifications of the same type, this option could help to reduce the frequency of them.



All actions have an option **Escalation**. With this you could specify additional actions to run after the initial action, with the specified time.

Use the **Add** and **Remove** buttons to add or remove escalated actions.

The maximum number of escalated actions is 10.

Note that the additional actions need to be created before you could select them.

In this example we won't use escalated action.

Notifications / Notification Rules

Search Units, Sensors, or Actions in Notification

Unit / Expansion	Sensor Name	Status	Action Name	Escalation
<input checked="" type="checkbox"/> Main board	Dual Humidity Port 1	→ High Critical	→ SMS Action	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

After the wizard has finished, you can view, edit or remove the completed notification in the **Notifications** menu.

## Heartbeat Messages

This feature allows you to set up periodical “keep alive” notifications task by email, SMS or SNMP Trap to indicate the unit is still working properly.

The screenshot displays the AKCP web interface for the 'System/Heartbeat Messages' section. The top navigation bar includes 'Summary', 'Sensors', 'Events', 'Notifications', and 'System' (which is highlighted). A 'Full Screen' button is located in the top right corner. The left sidebar lists various system settings, with 'Heartbeat Messages' selected and highlighted in white. The main content area features the title 'Heartbeat Messages' and a breadcrumb 'System / Heartbeat Messages'. Below the title is a search bar labeled 'Search Heartbeat Tasks' with a magnifying glass icon, a blue '+ Add' button, and a 'Refresh' button with a circular arrow icon. Underneath is a table with the following columns: 'Name', 'Task', 'Next Run Time', 'Last Run Time', 'Result', and 'Success'. The table is currently empty.

Navigate to **System/Heartbeat Messages** and click on the **Add** button to begin the wizard.



System / Heartbeat Messages / Add Heartbeat Task

1 Heartbeat Information 2 Action Information 3 Sensors 4 Schedule

### Step 1 - Heartbeat Information

Name: Heartbeat Task

Send Action: **Email** SMS SNMP Trap

Back Next Cancel

In the first step you can choose the type of the heartbeat notification, which can be Email, SMS or SNMP Trap. In our example we'll use **Email notification**.

System / Heartbeat Messages / Add Heartbeat Task

1 Heartbeat Information 2 Action Information 3 Sensors 4 Schedule

### Step 2 - Action Information

Email From: sp2plus@akcp.com

Email To: to@address.com, to@address.com, to@address:

Back Next Cancel

Choose the recipients of the action. If you haven't yet set up the SMTP server options, you'll be asked to do so.

If you choose SMS action in the previous step, then you'll need to fill in a phone number here.

For the SNMP Trap you'll need to specify the SNMP options; see the SNMP Trap Action configuration in this manual for more help.

### Heartbeat Messages

System / Heartbeat Messages / Add Heartbeat Task

1 Heartbeat Information    2 Action Information    3 Sensors    4 Schedule

#### Step 3 - Sensors in Heartbeat Message

Unit / Expansion

- Main board

Sensor

- Dual Humidity Port 1
- Dual Temperature Port 1
- Relay Port 2
- Siren Port 3
- Dual Humidity Port 4
- Dual Temperature Port 4

Back   Next   Cancel

In this step you can choose one or more sensor's status and reading to include in the heartbeat message. Select at least one sensor.

*Note:* If you connect an expansion board, you'll be able to select sensors from the expansion board also, as shown below:

Unit / Expansion

- Cabinet Control Unit
- Main board

Sensor

- Temperature Port 1
- Cabinet Door Port 1 (Reader 1)

### Heartbeat Messages

System / Heartbeat Messages / Add Heartbeat Task

1 — 2 — 3 — 4  
Heartbeat Information — Action Information — Sensors — Schedule

#### Step 4 - Schedule to perform this task

Perform this Task by  Minute  Day  Week  Month

Every  min(s)

Finally, choose a schedule for the heartbeat message. This picture shows the by-minute schedule. You can choose between Minute, Day, Week, Month. We'll also show the configuration for all of them below.

### Heartbeat Messages

System / Heartbeat Messages / Add Heartbeat Task

1 — 2 — 3 — 4  
Heartbeat Information — Action Information — Sensors — Schedule

#### Step 4 - Schedule to perform this task

Perform this Task by  Minute  Day  Week  Month

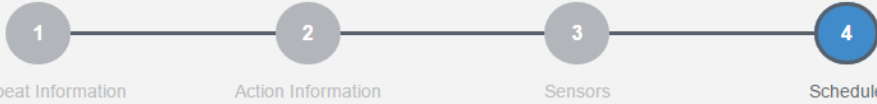
Every  day(s)

Start Time  hh:mm

This is the by-daily schedule.

## Heartbeat Messages

System / Heartbeat Messages / Add Heartbeat Task



### Step 4 - Schedule to perform this task

Perform this Task by

Minute Day **Week** Month

Every

1

week(s)

Start Time

22:00

hh:mm

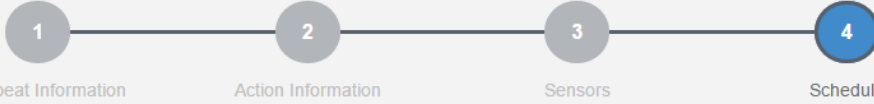
Select days of the week

Monday  
Tuesday  
Wednesday  
Thursday  
Friday  
Saturday  
Sunday

This is the by-weekly schedule.

## Heartbeat Messages

System / Heartbeat Messages / Add Heartbeat Task



### Step 4 - Schedule to perform this task

Perform this Task by

Minute Day Week **Month**

Every

1 month(s)

Start Time

22:00 hh:mm

Select dates of the month

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

This is the by-monthly schedule.

### Heartbeat Messages

System / Heartbeat Messages

Search Heartbeat Tasks

Name ▲	Task ▲	Next Run Time ▼	Last Run Time ▼	Result ▼	Success ▼	
<input checked="" type="checkbox"/> Heartbeat Task	Start at 22:00, Every 1 month(s)	01/03/2016, 22:00	-	OK	0 <input type="button" value="reset"/>	<input type="button" value="edit"/> <input type="button" value="delete"/>

When you've finished the wizard, it will appear in the list. You could edit or remove the task, and reset the success counter.

Note that you can define multiple heartbeat notification tasks with different schedule or notification methods.

AKCP Summary Sensors **Events** Notifications System Full Screen

### Notifications

Search

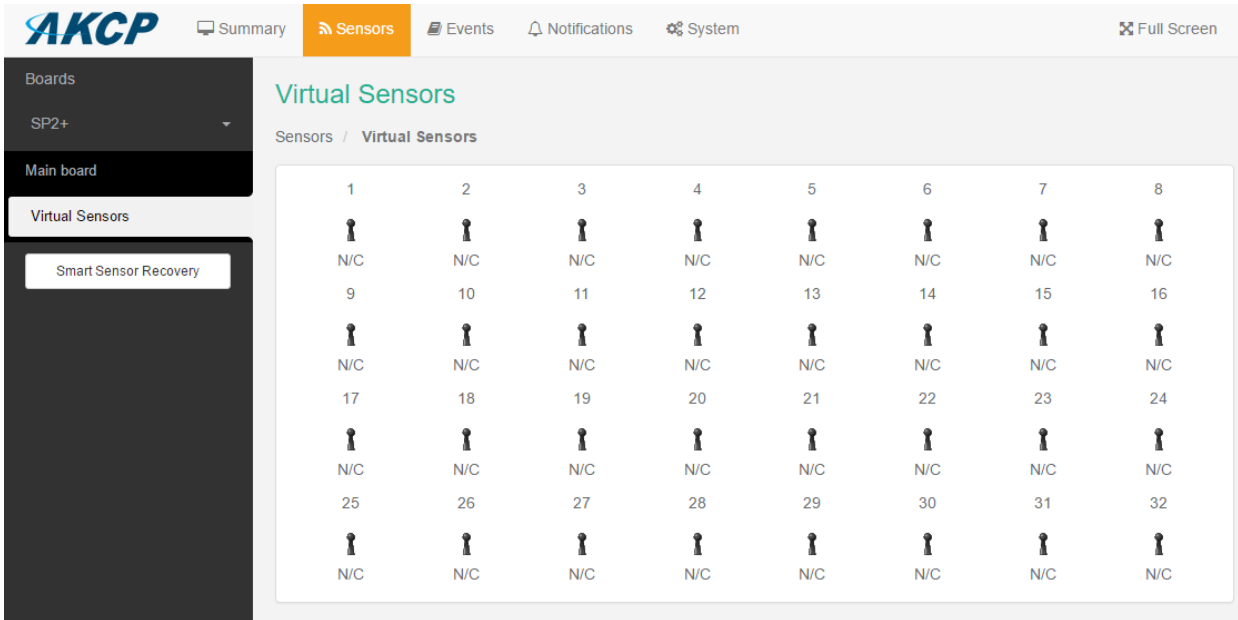
Date Start  to Date End

Date/Time ▼	Event ▲
1 29/02/2016 12:53:36	Email ok: Good mail sent to "[redacted]@akcp.com"

First < 1 > Last

You can view the result of the notification at the Events page's Notifications section.

## Virtual Sensors

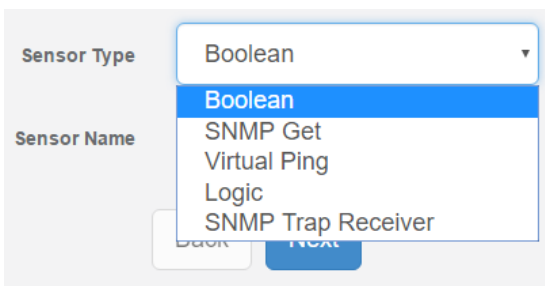


Virtual Sensors can be a very powerful tool in your monitoring system. On the SP+ products you can have up to 32 of these virtual sensors and they allow for a multitude of applications.

SNMP Get, sensor logic evaluation and ping commands among others are all possible from the virtual sensors. An example use of this could be to use the SPX+ as a probe manager. If you had a SPX+ and multiple sensorProbe devices they could all be monitored, mapped and alerted via the SPX+. You can perform SNMP Get commands on a server to monitor memory or CPU load, or you can ping network enabled devices and be alerted if they go offline.

You can configure the Virtual Sensors under a separate tab under the Sensors menu.

The first 5 sensors are free, if you need to use more you can purchase additional licenses (see the Licensing section in the Introduction manual).



Select a sensor from the list, and choose its type.

In the following sections we'll go through each Virtual Sensor type, and how to configure them.

### Boolean

Sensor Type: Boolean

Sensor Name: Virtual Sensor Port 1

Back Next

Boolean works on the virtual sensor by checking the status of, for example 2 to 3 sensors and if the sensors status matches that of the setting, they will return a value of 1. The normal value is 0.

You can select the sensor type between **AND / OR** for comparison:

Boolean Type: AND

Unit	Sensor	Status
None		
None		
None		

Back Finish

You can set your virtual sensor to be critical by choosing your sensors from the drop-down lists, choosing their statuses like the image example below, and then go to the **Notifications** page to make the notification using the new virtual sensor:



Boolean Type		OR
Unit	Sensor	Status
Main board	Dual Humidity Po	High Critical
Main board	Dual Temperature	Low Critical
Main board	Dry Contact Port :	Critical
Back		Finish

In this example picture the virtual sensor's status will be critical when any of the Humidity/Temperature/Dry Contact sensors will have a *high/low/critical* status.

*Note:* If you connect an expansion board, you'll be able to select sensors from the expansion board also.

## SNMP Get

The form contains two input fields: 'Sensor Type' with a dropdown menu set to 'SNMP Get', and 'Sensor Name' with a text box containing 'Virtual Sensor Port 1'. Below these fields are two buttons: 'Back' and 'Next'.

With SNMP Get sensor, you can get a value from any SNMP device. Note that a custom string return value is not supported.

The form contains five input fields: 'Host IP' (text box), 'Port' (text box), 'SNMP Version' (dropdown menu), 'Read Community' (text box), and 'OID' (text box). Below these fields are two buttons: 'Back' and 'Next'.

**Host IP:** The IP address of the unit on which you wish to perform an SNMP Get command. For example this could be the IP address of a sensorProbe2 device.

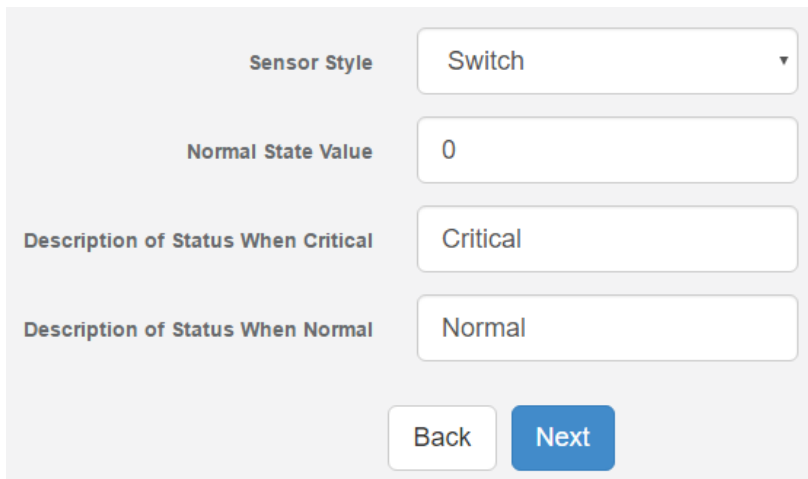
**SNMP Version:** v1 works with most devices; you can also select v2c and v3.

**SNMP Read Community:** The SNMP password of the unit, default is usually “public”.

**OID:** The OID for what you wish to monitor. If for example you want to poll temperature data from a sensorProbe 2 device with a Temp sensor on Port 1 then you would use the following OID:

1.3.6.1.4.1.3854.1.2.2.1.16.1.3.0

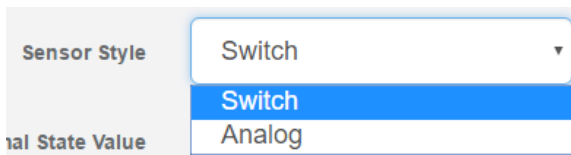
Where the last digit (0) is Port 1. For Port 2 the last digit would be 1. If you are monitoring some other device you will need the relevant OID for what you wish to measure.



The screenshot shows a configuration form for a sensor. It includes the following fields and controls:

- Sensor Style:** A dropdown menu with "Switch" selected.
- Normal State Value:** A text input field containing the number "0".
- Description of Status When Critical:** A text input field containing the word "Critical".
- Description of Status When Normal:** A text input field containing the word "Normal".
- Navigation:** Two buttons at the bottom, "Back" and "Next".

**Sensor Style:** You can choose either Switch or Analog. A Switch sensor would be for example a water sensor, on or off, an Analog sensor would be a Temperature sensor or Humidity sensor, or some other sensor that gives a data value.



This image shows a close-up of the "Sensor Style" dropdown menu. The menu is open, showing two options: "Switch" (which is highlighted in blue) and "Analog". The label "Sensor Style" is visible to the left of the dropdown, and "Normal State Value" is partially visible below it.

**Description when Normal:** eg, Normal, Critical, Online etc.

**Description when Critical:** eg, Critical, Offline, Low etc

**Normal State value:** 0 or 1 (for Switch type sensor only).

If you choose an **Analog** sensor, you will get a slightly different menu:

Sensor Style: Analog

Value Multiplier: 1

Unit: Unit

0 → 20 → 40 → 60 → 80 → 100

Low Critical    Low Warning    Normal    High Warning    High Critical

Min Value: 0

Max Value: 100

Value Multiplier gives you the choice to multiply the reading value by a given number.

Unit text: example, if measuring temperature “degrees centigrade” or if measuring humidity “percentage humidity” etc.

Value range: The range that you wish to measure.

Polling Interval: 15 15s

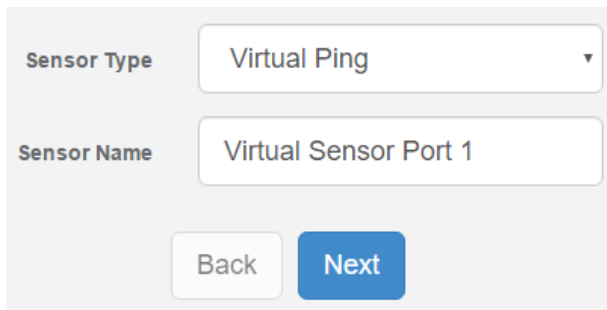
Execute Time Out: 5 5s

Retry: 3 Times

Back Finish

You can also configure the time interval between data polling, timeout and retries.

## Virtual Ping

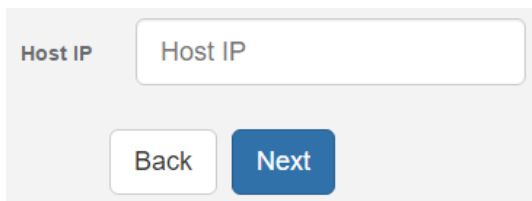


Sensor Type: Virtual Ping

Sensor Name: Virtual Sensor Port 1

Back Next

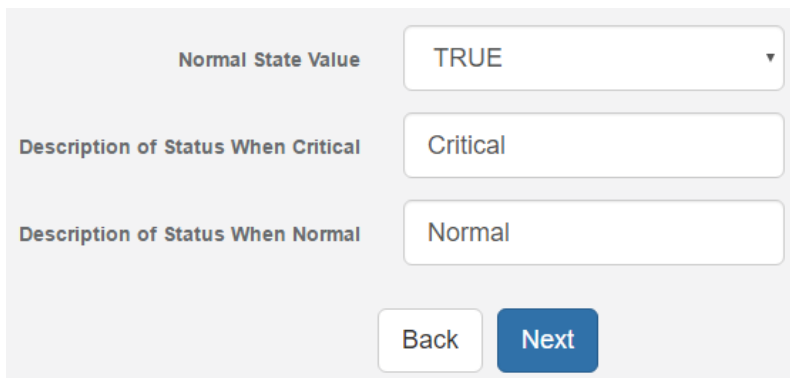
With the ping sensor, you can set up ping monitoring of a network device or server.



Host IP: Host IP

Back Next

Host: The IP address of the network device you wish to ping.



Normal State Value: TRUE

Description of Status When Critical: Critical

Description of Status When Normal: Normal

Back Next

Description when Normal: eg, online/reachable

Description when Critical: eg, offline/unreachable

Normal State Value	<input type="text" value="TRUE"/>
Status When Critical	<input type="text" value="FALSE"/>

Normal State Value:

TRUE = sensor will be Normal status if ping successful (otherwise it will be in Critical status)

FALSE = sensor will be Normal status if ping times out (otherwise it will be in Critical status)

Polling Interval	<input type="text" value="5"/>	5s
Execute Time Out	<input type="text" value="1"/>	1s
Retry	<input type="text" value="3"/>	Times
<input type="button" value="Back"/> <input type="button" value="Finish"/>		

You can also configure the time interval between data polling, timeout and retries.

## Logic

Sensor Type: Logic

Sensor Name: Virtual Sensor Port 1

Back Next

The logic is a new virtual sensor type on SP2+ which uses FlipFlop logic. You can monitor physical sensor statuses with it, and change the virtual sensor's state with the pre-set values for the status of a physical sensor (SET Source Sensor).

The logic will ignore all other intermediate physical sensor statuses and only changes the virtual sensor's state back if it **exactly** matches the specified physical sensor status (RESET Source Sensor).

Trigger Logic: FlipFlop

SET Source Sensor

Unit	Sensor	Status
None		

RESET Source Sensor

Unit	Sensor	Status
None		

Back Finish

Choose your **Unit** (on SP2+ Standard, only Main board is selectable), physical **Sensor**, and the **Status** you'd like the logic to monitor.

*Note:* If you connect an expansion board, you'll be able to select sensors from the expansion board also.

Trigger Logic	FlipFlop	
SET Source Sensor		
Unit	Sensor	Status
Main board	Dual Temperature	High Critical
RESET Source Sensor		
Unit	Sensor	Status
Main board	Dual Temperature	Normal
Back		Finish

On this example picture, we've set the logic to change the virtual sensor to *Critical* if the *Temperature sensor's status* becomes *High Critical*, and only change it back to *Normal* when the *Temperature sensor's status* also becomes *Normal*.



There's also support for **Dual Sensors FlipFlop** logic:

Trigger Logic

150r

- FlipFlop
- FlipFlop
- Dual Sensors FlipFlop

Trigger Logic

SET Source Sensor

Unit	Sensor	Status
<input type="text" value="Main board"/>	<input type="text" value="Dual Temperature"/>	<input type="text" value="High Critical"/>
<input type="text" value="Main board"/>	<input type="text" value="Dual Humidity Po"/>	<input type="text" value="High Critical"/>

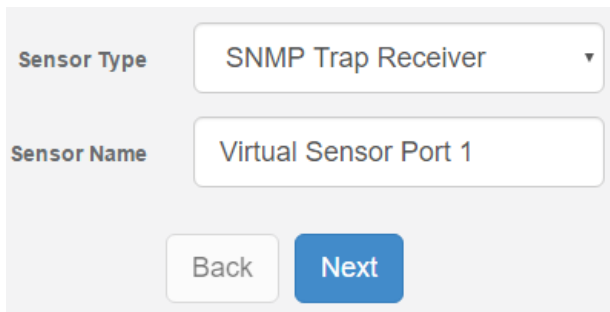
RESET Source Sensor

Unit	Sensor	Status
<input type="text" value="Main board"/>	<input type="text" value="Dual Temperature"/>	<input type="text" value="Normal"/>
<input type="text" value="Main board"/>	<input type="text" value="Dual Humidity Po"/>	<input type="text" value="Normal"/>

In this mode you can choose 2 sensors for monitoring.

It has AND relation between them, and only changes the virtual sensor's state if there's an **exact match** for these statuses.

## SNMP Trap Receiver



Sensor Type: SNMP Trap Receiver

Sensor Name: Virtual Sensor Port 1

Back Next

The SNMP Trap Receiver type will check 3 parameters before setting a value for the virtual sensor. These three parameters are the IP Address, the sensor's OID and the Trap sub-type.



IP Address: IP Address

OID: OID

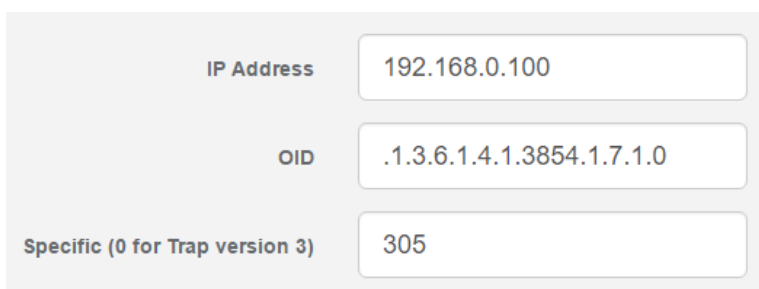
Specific (0 for Trap version 3): Specific (0 for Trap version)

Back Next

Normally the Trap will have 6 OIDs, you can specify the specific OID from them with the Specific.

Example:

In our example below the Trap is sent by the **Motion Sensor** on **Port 5** of our sensorProbe unit. Our device IP is 192.168.0.100. Our sensorProbe Trap Type is set to the specific sub type and will check status of our Motion Sensor:



IP Address: 192.168.0.100

OID: .1.3.6.1.4.1.3854.1.7.1.0

Specific (0 for Trap version 3): 305

1. spSensorStatus (.1.3.6.1.4.1.3854.1.7.1.0). The current integer status of the sensor causing this trap to be sent: noStatus(1), normal(2), highWarning(3), highCritical(4), lowWarning(5), lowCritical(6), sensorError(7), turnOn(8), turnOff(9).
2. spSensorValue (.1.3.6.1.4.1.3854.1.7.2.0). The current integer value of the sensor causing this trap to be sent.
3. spSensorLevelExceeded (.1.3.6.1.4.1.3854.1.7.3.0). The integer level that was exceeded causing this trap to be sent.
4. spSensorIndex (.1.3.6.1.4.1.3854.1.7.4.0). The integer index of the sensor causing this trap to be sent.
5. spSensorName (.1.3.6.1.4.1.3854.1.7.5.0). The name of the sensor causing this trap to be sent.
6. spSensorDescription (.1.3.6.1.4.1.3854.1.7.6.0). The description of the sensor causing this trap to be sent.

The specific value depends on the sensorProbeTrap type (.1.3.6.1.4.1.3854.1.2.2.1.60.0).

If it is set to specificTypeTrap(1) specific value is to show the sensor type and port (Specific value of Motion Sensor port 5 is 305).

If it is set to generalTypeTrap(2) specific value is to show the sensor type (Specific value of Motion Sensor port 5 is 30).

If it is set to bothTypeTraps(3) device will send the trap two times specific value will show sensor type and show sensor type and port (Specific value of Motion Sensor port 5 is 305 and 30).

If it is set to statusTypeTraps(4) specific value is up to status of sensor (spSenUnknownStatus(51), spSenNormalStatus(52), spSenWarningStatus(53), spSenCriticalStatus(54)).

Sensor Style	Switch
Normal State Value	0
Normal State Value (String)	Normal State Value (String)
Critical State Value (String)	Critical State Value (String)
Description of Status When Critical	Critical
Description of Status When Normal	Normal
	<input type="button" value="Back"/> <input type="button" value="Finish"/>

With the **Switch Sensor Style** you'll need to specify the **Normal State Value**. Value 2 means that the sensor's status is normal so far.

If you choose an **Analog** sensor style, you will get a slightly different menu:

Sensor Style: Switch  
al State Value: Analog

Sensor Style: Analog  
Value Multiplier: 1  
Unit: Unit

0 → 20 → 40 → 60 → 80 → 100

Low Critical    Low Warning    Normal    High Warning    High Critical

Min Value: 0  
Max Value: 100

Back    Finish

The configuration values are similar to other analog type sensors.

## Fire Suppression System

This feature provides fire suppression for your cabinet. It uses Smoke Detectors to detect a fire hazard, then the unit can cut power to the cabinet using a Relay, removing the heat source of the fire.

**Fire Suppression Wizard**

Notifications / Fire Suppression Wizard

- 1 Fire Suppression System
- 2 Fire Detection
- 3 Relay Action
- 4 Siren Action

### Fire Suppression System

Fire damage can be catastrophic for a cabinet, or the entire data center. With AKCP's patent pending fire suppression system we use smoke detectors coupled with our relay module to cut the power to a cabinet when smoke is detected. By cutting the power we kill the source of heat energy for the fire.

#### Single Detector System

A simple and cost effective solution to protecting your cabinet. When smoke is detected your rack will be protected by the immediate shutdown of the power.

#### Dual Detector System

Reduce false positives by adding a second smoke detector. When this is present power is only shut down to the cabinet when both sensors are triggered at the same time.

To use it, you'll need at least 1 Smoke Detector and 1 Relay connected to the unit. For increased efficiency you can use 2 Smoke Detectors. This will reduce false positive alerts. Optional audiovisual warning could be made using an additional Siren Strobe sensor.

1 Auto Sense  
Dual Humidity

2 Auto Sense  
Smoke Detector

3 Auto Sense  
Smoke Detector

4 Auto Sense  
N/C

Smoke Detector | Advanced | Continuous Time

**🔥 Fire Suppression** ✕  
Patent pending fire suppression for your cabinet. Smoke detectors will alert to a fire hazard, and your SPS+ or PDU+ cuts power to the cabinet removing the heat source of the fire.  
[Setup Now](#)

Sensor Name: Smoke Detector Port 2

Sensor Status: **Normal**

Sensor Currently: **Online**

Description of Status When Normal: Normal

Description of Status When Critical: Smoke

Smoke Detector Port 2 is now online.  
[Click here](#) to setup **🔥 Fire Suppression** ✕

Whenever you connect a Smoke Detector, the Web UI will also offer to start the Fire Suppression Wizard.

## Single Detector System

The Single Detector System is using 1 Smoke Detector with 1 Relay, and an optional Siren sensor.

**Fire Suppression Wizard**

Notifications / Fire Suppression Wizard

1 — 2 — 3 — 4

Fire Suppression System    Fire Detection    Relay Action    Siren Action

**Step 2 - Select smoke detector for fire detection.**

Smoke Detector #1

Unit / Expansion:

Sensor:

Smoke must be present for a minimum period of time before executing an action

Smoke present for:  2s

Choose the Smoke Detector from the drop-down list, and it's recommended to put a minimum delay before the shutdown action is performed.

*Note:* If you connect an expansion board, you'll be able to select sensors from the expansion board also.



### Fire Suppression Wizard

Notifications / Fire Suppression Wizard

1 — 2 — 3 — 4  
Fire Suppression System    Fire Detection    Relay Action    Siren Action

**Step 3 - Cut the power off when smoke is detected.**

Create relay action to cut the power off

Relay: Relay Port 4

Power back on: Never

Back    Next

Choose the Relay from the drop-down list.  
You can also choose to turn the power back on if needed:

Power back on: Never

- Never
- When smoke is no longer detected
- When smoke detector is acknowledged

However, for this feature to work, the sensorProbe+ unit has to be on a separate power line. Otherwise the relay will also power down the unit and it can't turn the power back on.

If you have existing Relay actions, you could also select to perform them instead of creating a new one:

Create relay action to cut the power off

Relay: Relay Port 4

Power back on: Never

Choose from an existing relay action

Select an existing relay action

Relay Action: Turn Relay Port 4 OFF

Create a new relay action

### Fire Suppression Wizard

Notifications / Fire Suppression Wizard

**Step 4 - Turn on siren when smoke is detected.**

Do you want to turn on siren when smoke is detected?

Yes  No

If you don't have a Siren strobe installed, just click on the **Finish** button to finish configuring the Fire Suppression.

The wizard will take you to the **Notifications** list, where you could reconfigure the notification the same way as with any other notification (see below).

If you do have a Siren, you can choose to configure it for additional audiovisual warning:

The screenshot shows the 'Fire Suppression Wizard' interface. At the top, there is a progress bar with four steps: 1. Fire Suppression System, 2. Fire Detection, 3. Relay Action, and 4. Siren Action. Step 4 is currently active. Below the progress bar, the text reads 'Step 4 - Turn on siren when smoke is detected.' A question asks 'Do you want to turn on siren when smoke is detected?' with 'Yes' and 'No' radio buttons. Below this, there is a section titled 'Create siren action to alert' with two dropdown menus: 'Siren' set to 'Siren Port 3' and 'Turn Off' set to 'Never'. At the bottom, there are 'Back' and 'Finish' buttons.

The Siren can be specified to turn off when the Smoke Detector's status changes, or after a period of time:

A close-up of the 'Turn Off' dropdown menu. The menu is open, showing the following options: 'Never' (highlighted in blue), 'When smoke is no longer detected', 'When smoke detector is acknowledged', and 'After a period of time'.

Click on the **Finish** button to finish configuring the Fire Suppression.

The wizard will take you to the **Notifications** list.

Notifications / Notification Rules

Search Units, Sensors, or Actions in Notification

Unit / Expansion	Sensor Name	Status	Action Name	Escalation
<input checked="" type="checkbox"/> Main board	Smoke Detector Port 2	→ Smoke →	Turn Relay Port 4 OFF Turn Siren Port 3 ON	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

You could reconfigure the notification the same way as with any other notification, and it's possible to add **Escalation** actions as well:

Notifications / Link Notification

1 Sensors — 2 Status and Action — 3 Continuous Time — 4 Minimum Time — 5 Escalation

### Step 5 - Select Escalated Action

Time Before Escalation:  10s

Escalated Action:

Select Escalated Action:

## Dual Detector System

The Dual Detector System is using 2 Smoke Detectors with 1 Relay, and an optional Siren sensor.

**Fire Suppression Wizard**

Notifications / Fire Suppression Wizard

1 — 2 — 3 — 4

Fire Suppression System      Fire Detection      Relay Action      Siren Action

**Step 2 - Select smoke detector for fire detection.**

Smoke Detector #1

Unit / Expansion: Main board

Sensor: Smoke Detector Port 2

Smoke Detector #2

Unit / Expansion: Main board

Sensor: Smoke Detector Port 3

Smoke must be present for a minimum period of time before executing an action

Smoke present for: 2 2s

Choose the Smoke Detectors from the drop-down list, and it's recommended to put a minimum delay before the shutdown action is performed.

*Note:* If you connect an expansion board, you'll be able to select sensors from the expansion board also.

### Fire Suppression Wizard

Notifications / Fire Suppression Wizard

1 — 2 — 3 — 4

Fire Suppression System    Fire Detection    Relay Action    Siren Action

**Step 3 - Cut the power off when smoke is detected.**

Create relay action to cut the power off

Relay: Relay Port 4

Power back on: Never

Back    Next

Choose the Relay from the drop-down list.  
You can also choose to turn the power back on if needed:

Power back on: Never

- Never
- When smoke is no longer detected
- When smoke detector is acknowledged

However, for this feature to work, the sensorProbe+ unit has to be on a separate power line. Otherwise the relay will also power down the unit and it can't turn the power back on.

If you have existing Relay actions, you could also select to perform them instead of creating a new one:

Create relay action to cut the power off

Relay: Relay Port 4

Power back on: Never

Choose from an existing relay action

Select an existing relay action

Relay Action: Turn Relay Port 4 OFF

Create a new relay action

### Fire Suppression Wizard

Notifications / Fire Suppression Wizard

**Step 4 - Turn on siren when smoke is detected.**

Do you want to turn on siren when smoke is detected?

Yes **No**

Back **Finish**

If you don't have a Siren strobe installed, just click on the **Finish** button to finish configuring the Fire Suppression (see the Single Detector System for the Siren options).

The wizard will take you to the **Notifications** list, where you could reconfigure the notification the same way as with any other notification:

### Notifications

Notifications / Notification Rules

Search Units, Sensors, or Actions in Notification

Unit / Expansion	Sensor Name	Status	Action Name	Escalation
<input checked="" type="checkbox"/> Virtual Sensors	Dual Smoke Detector Port 1	→ Smoke	→ Turn Relay Port 4 OFF	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

Note that when you're using the Dual Detector System, then a Virtual Sensor is set up to detect smoke from both detectors.

You can edit its settings at the **Virtual Sensors** tab under the **Sensors** menu.

Logic | **Advanced** | Virtual Sensor Setting | Continuous Time

Sensor Name: Dual Smoke Detector Port

Sensor Status: Normal

Sensor Currently: Online

Sensor Enabling: Enable

Normal State Value: FALSE

Description of Status When Critical: Smoke

Description of Status When Normal: Normal

Save Cancel

The Virtual sensor used for the smoke detection is **Logic** type, with the following settings:

Logic | **Advanced** | Virtual Sensor Setting | Continuous Time

Trigger Logic: Dual Sensors FlipFlop

SET Source Sensor

Unit	Sensor	Status
Main board	Smoke Detector	Smoke
Main board	Smoke Detector	Smoke

RESET Source Sensor

Unit	Sensor	Status
Main board	Smoke Detector	Normal
Main board	Smoke Detector	Normal

Save Cancel

Please check the **Virtual Sensors** section for additional explanation about how this setup works.



## Macro Description for actions

Macro Name	Description
[\$SYSNAME]	System name.
[\$SYSLOCATION]	System location.
[\$SYSCONTACT]	System contact.
[\$SYSURL]	System URL.
[\$IP]	The IP address of this system.
[\$IP_ETH]	The IP address of ethernet interface.
[\$IP_VPN]	The IP address of VPN interface.
[\$TIME]	The time when a sensor transmits the notification in the format of HH:MM:SS Ex: 18:45:10.
[\$DATE]	The date when the sensor transmits the notification in the format of YYYY/MM/DD Ex: 2005/01/31.
[\$DAY_OF_WEEK]	The day of the week when the sensor transmits the notification. Ex: Monday, Tuesday, etc.
[\$DAY]	The date of the month when the sensor transmits the notification. Ex: 1,2,3,...
[\$MONTH]	The month when the sensor transmits the notification. Ex: January, February, etc.
[\$YEAR]	The year when the sensor transmits the notification. Ex: 2014.
[\$PORT]	The port number when the sensor transmits the notification. Ex: 2.
[\$DESCRIPTION]	The description to identify the reporting sensor transmitting the notification. Ex: Temperature of computer room.
[\$STATUS]	The status of the sensor transmitting the notification. Ex: High Critical.
[\$VALUE]	The current reading of the sensor when a notification occurs. Ex: 40 Percent, 20 Volts, etc.
[\$UNIT]	The unit of the sensor. Ex: Percent, Volts, etc.

*Note:* This macro help window is also available from the Web UI when you click on the **Macro Description** button.

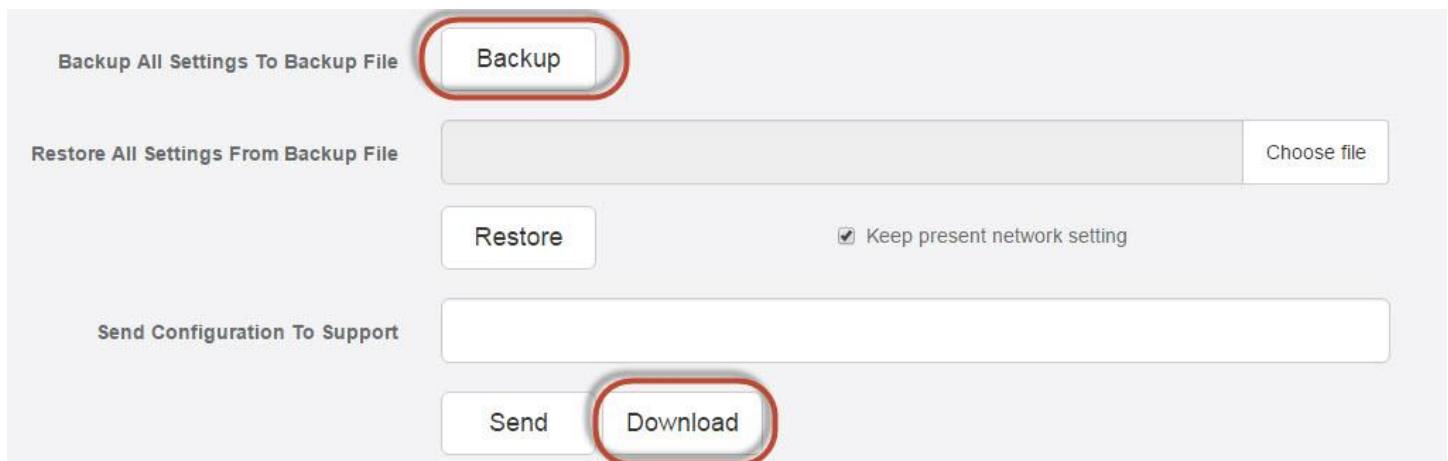
## Troubleshooting

### I am having problems with the unit but not sure what to do next?

Please email [support@akcp.com](mailto:support@akcp.com) and include the following detailed information in your email;

**Note:** The more details you can provide the easier and faster we can provide you with a resolution, so please be as detailed as possible.

1. The details of the problem, condition of the LEDs etc.
2. What you did to determine the unit has this problem?
3. Was there anything done to the unit prior to having the problem?
4. Did the unit always have this problem, if not when did this start?
5. Do you have more than one unit having the same problem?
6. What did you do to try and fix the problem?
7. What version of firmware is running on the unit? Did you try and upgrade it?
8. Include the settings and backup configuration files to support (both files, see below).
9. If you can put the unit online this would be the fastest way for us to solve the problem.
10. What is the MAC ID of the unit?



The screenshot shows a configuration interface with three main sections:

- Backup All Settings To Backup File:** A button labeled "Backup" is circled in red.
- Restore All Settings From Backup File:** A text input field is followed by a "Choose file" button. Below this is a "Restore" button and a checked checkbox labeled "Keep present network setting".
- Send Configuration To Support:** A text input field is followed by "Send" and "Download" buttons. The "Download" button is circled in red.



Please contact [support@akcp.com](mailto:support@akcp.com) if you have any further technical questions or problems.

**Thanks for Choosing AKCP!**