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SP2+ Notifications Manual

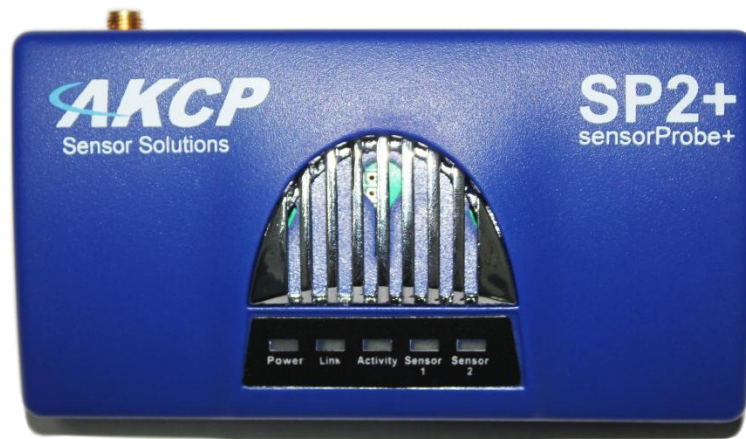


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Introduction

This manual covers all of the built in notifications on the SP2+ and how to configure them.

What is the SP2+ and Thermal Map?

The SP2+ is a high speed, accurate, intelligent monitoring device, featuring a completely embedded host and operating system. The SP2+ is a complete redesign of the world's best-selling environmental monitoring platform, 3 years in the making with all new hardware and software. We've combined the low cost and simplicity of use of the SP2, along with many advanced features of our securityProbe platform.

The thermal map combines 4 sensors into one sensor port on the SP2+, specially designed to monitor the air entering and leaving a computer rack. The Thermal Rack Map is performed from the AKCess Pro Server using the Thermal Sensor connected to the SP2+. The Thermal Map Sensors monitor the temperature and humidity at different points of the rack.

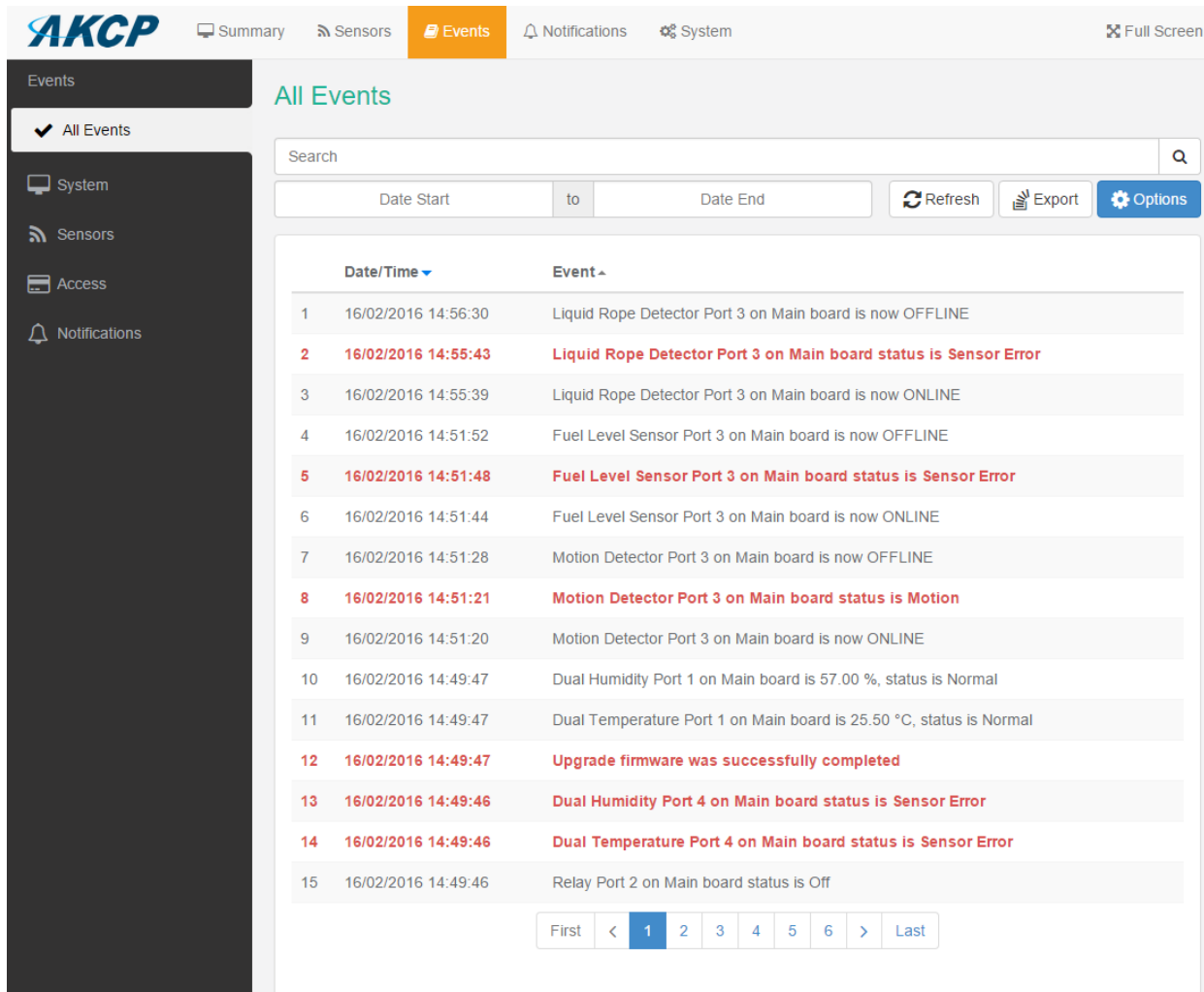
SP2 + Features:

- IP based, including SNMPv3, HTTPS, VPN
- Send encrypted SNMP Trap and Email Notifications
- Supports 4 Intelligent Sensors or up to 20 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

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.

Events

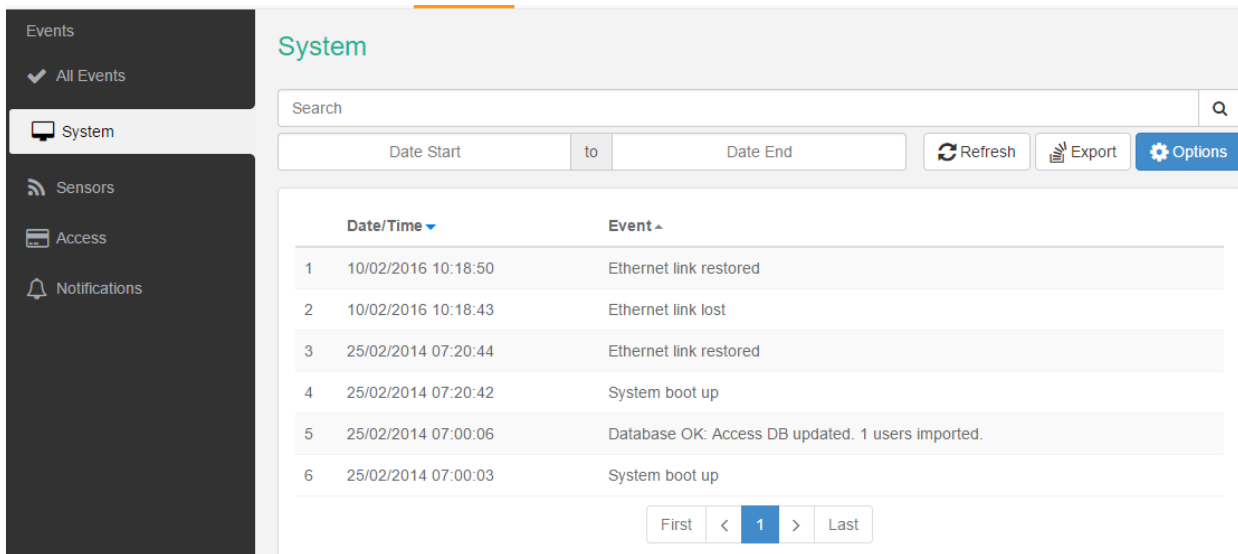
The **Events** page contains all logged events that the unit stores. It's functioning like a categorized syslog, where you can search for a specific event, and also export the logged entries to a file.



The screenshot shows the AKCP web interface with the 'Events' tab selected. The left sidebar contains navigation links for 'System', 'Sensors', 'Access', and 'Notifications'. The main content area is titled 'All Events' and features a search bar, date range filters, and buttons for 'Refresh', 'Export', and 'Options'. A table displays 15 events with columns for 'Date/Time' and 'Event'. The events include status changes for various sensors (Liquid Rope Detector, Fuel Level Sensor, Motion Detector, Dual Humidity, Dual Temperature) and system updates (firmware upgrade, Relay status).

	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

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



System

Search

Date Start to Date End

	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

First < 1 > Last

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.

Filter Options

Number of display items per page

15

Severity Level

☒ Critical
☒ Error
☒ Warning
☒ Notice
☒ Information

OK

Cancel

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

Event Log (2000 messages)

Search Q		
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 14:48:47	Upgrade firmware was successfully completed

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.

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.

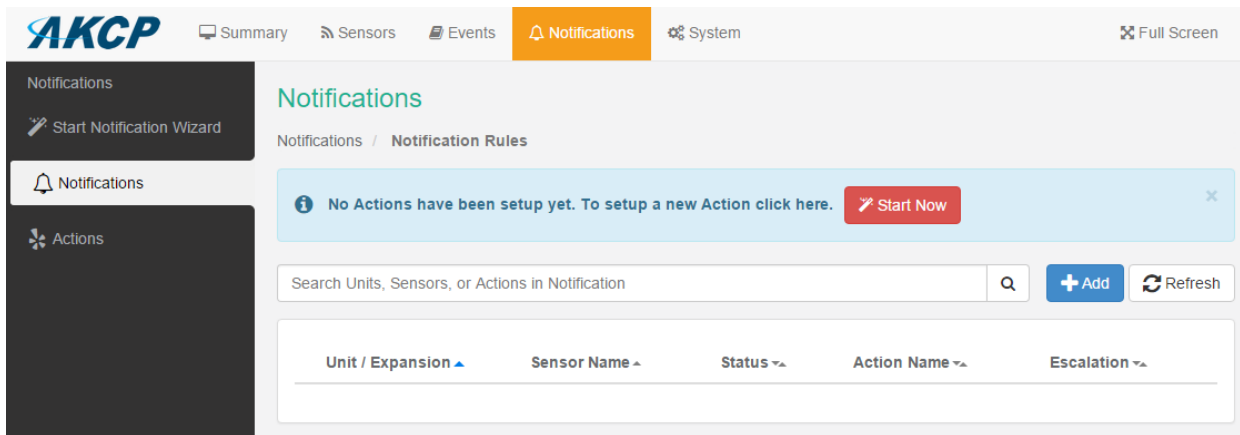
SMS: This sends an SMS message to your mobile phone.

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.

Notifications page



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.

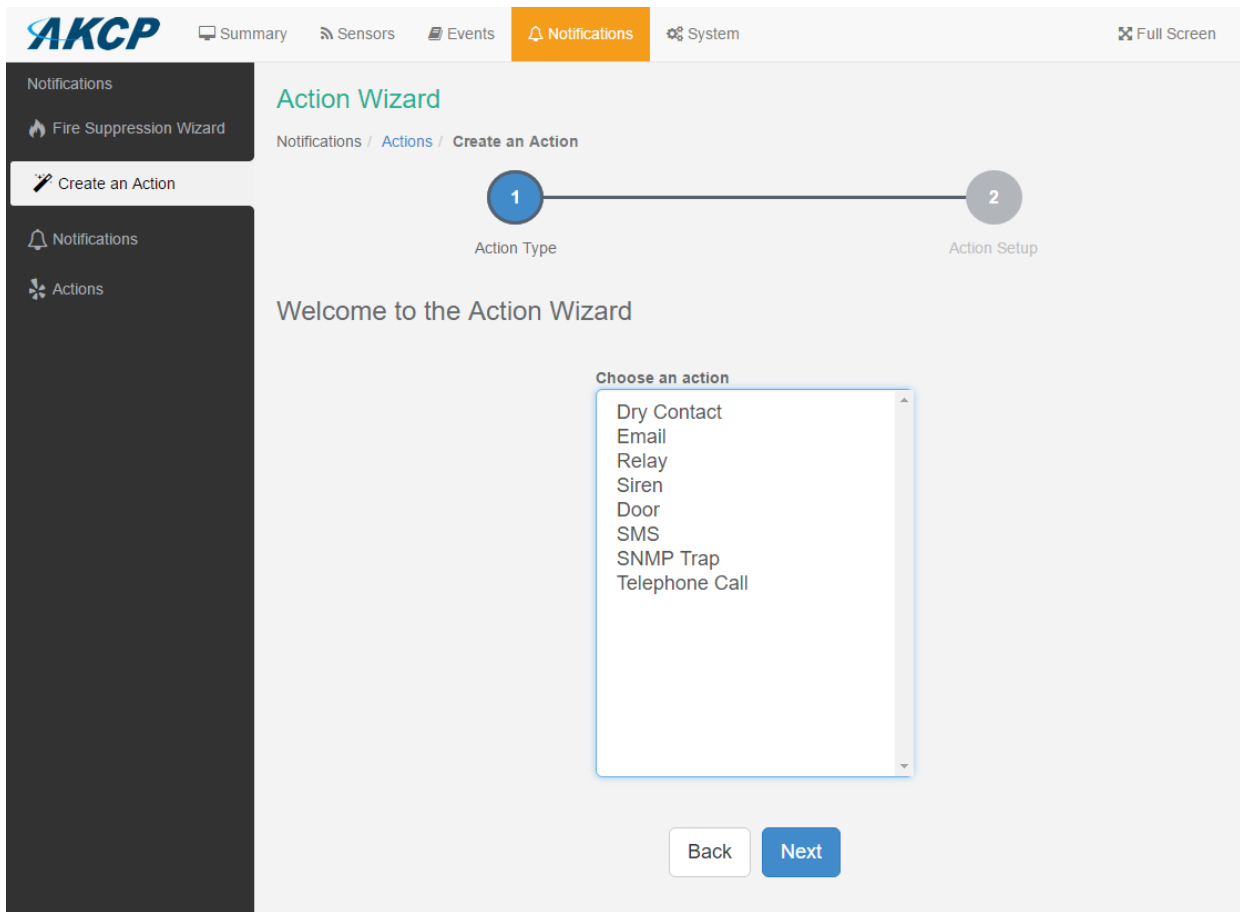
Click on the **Start Now** button or the **Start Notification Wizard** tab to start the wizard.

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



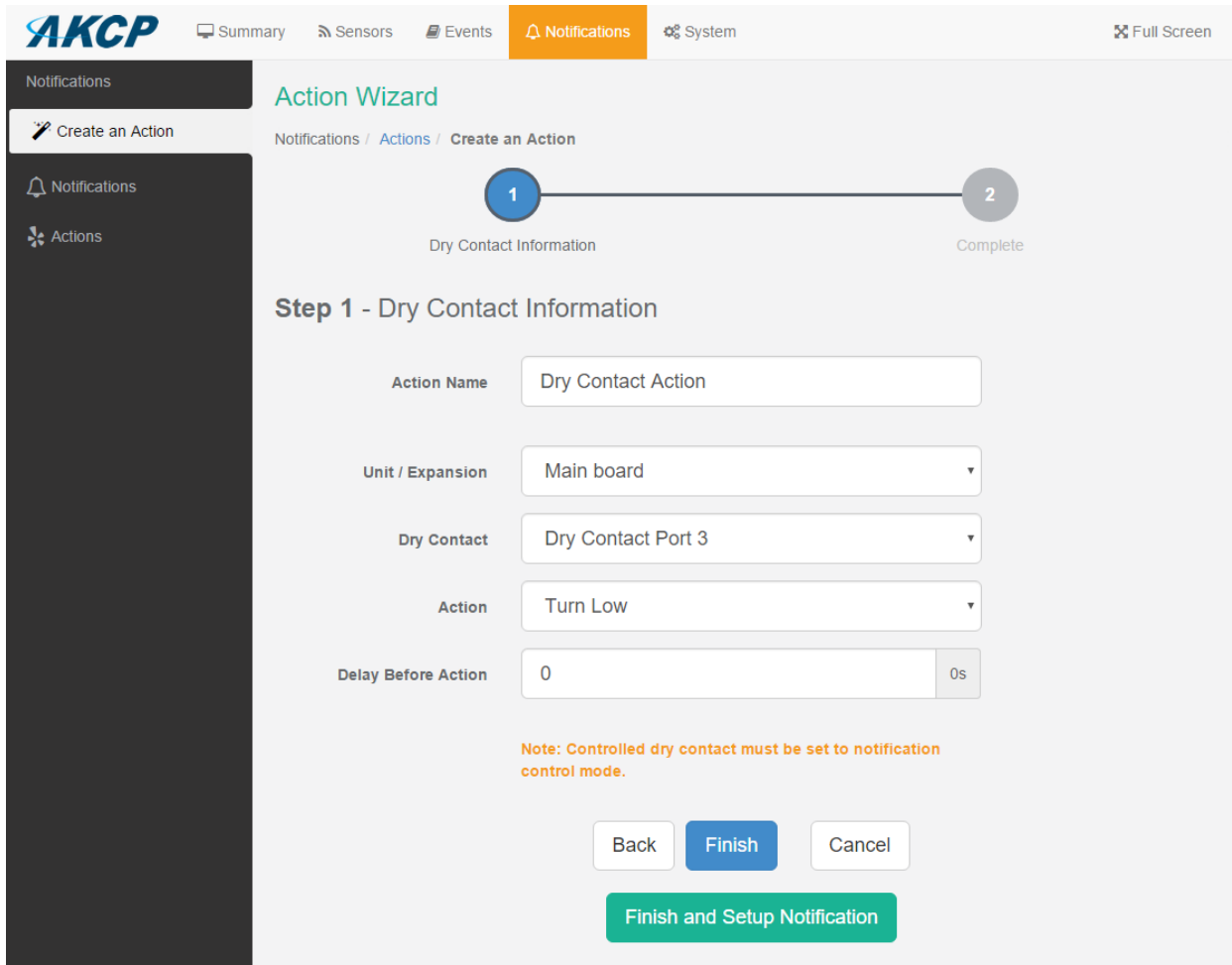
This is the Action Wizard’s welcome page; the supported Web UI configurable actions are shown. Select one to configure and click **Next**.

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 AKCP web interface with the 'Notifications' tab selected. The 'Action Wizard' is displayed, showing a progress bar with two steps: '1 Dry Contact Information' and '2 Complete'. The current step is 'Step 1 - Dry Contact Information'. The form 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 (with a 0s unit indicator)

A note at the bottom states: "Note: Controlled dry contact must be set to notification control mode." Below the form are three buttons: 'Back', 'Finish', and 'Cancel'. At the bottom center is a large green button labeled 'Finish and Setup Notification'.

Note: The dry contact needs to be connected to the unit before it can be configured, and it needs 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.

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 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

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

Sensor Control

Toggle

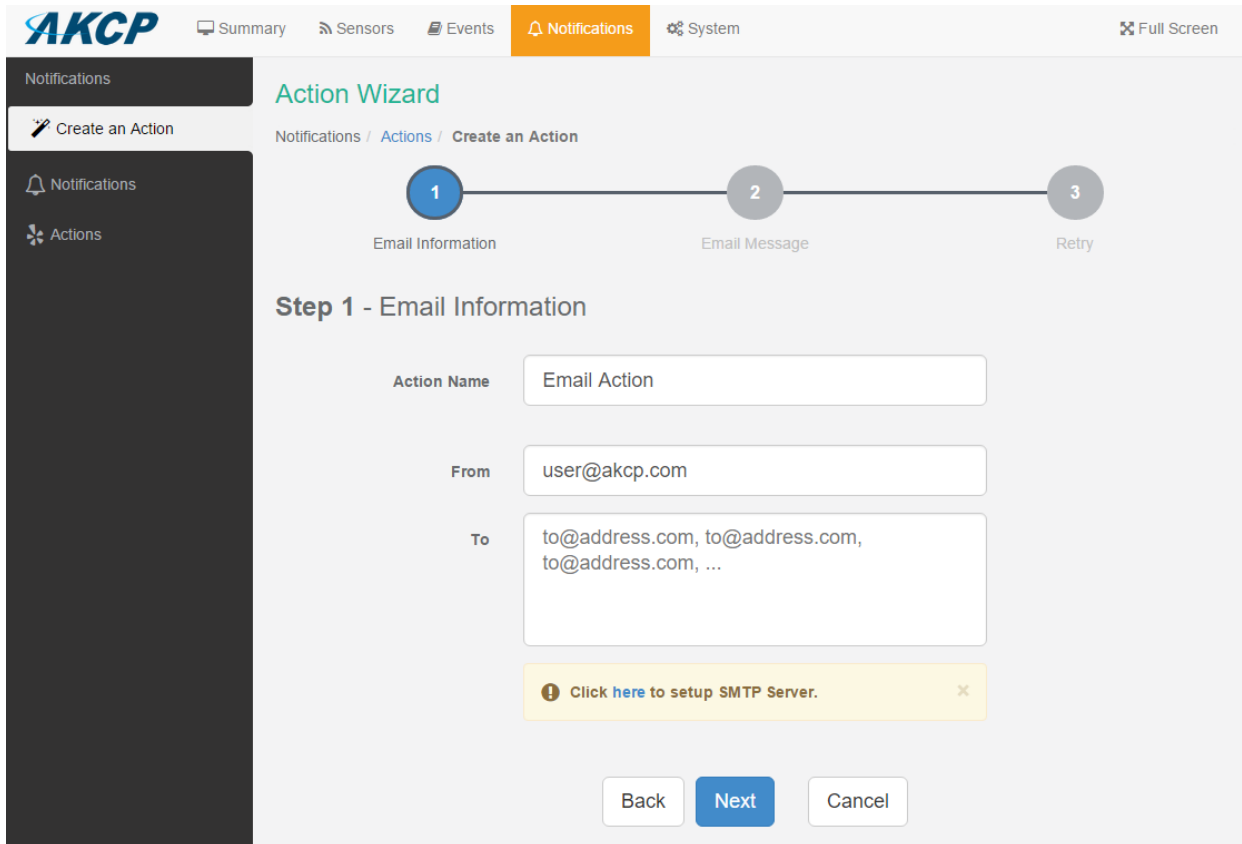
Enable Calendar

Action ▾

Low
High
Toggle High-Low
Toggle Low-High

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 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'. The form includes fields for 'Action Name' (set to 'Email Action'), 'From' (set to 'user@akcp.com'), and 'To' (set to 'to@address.com, to@address.com, to@address.com, ...'). A yellow notification box at the bottom states: 'Click [here](#) to setup SMTP Server.' Below the form are 'Back', 'Next', and 'Cancel' buttons.

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 Testing Sensor Port 1 is now 80 Unit, status is n

Body From: System Name (127.0.0.1)
Time: 11:12:10
Testing Sensor Port 1 is now 80 Unit, status is now Normal

Customize

Back **Next** **Cancel**

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 \${DESCRIPTION} is now \${VALUE} \${UNIT}, sta

Body From: \${SYSNAME} (\${IP})
Time: \${TIME}
\${DESCRIPTION} is now \${VALUE} \${UNIT}, status is now \${STATUS}

Preview **Restore Default** **Macro Description**

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:

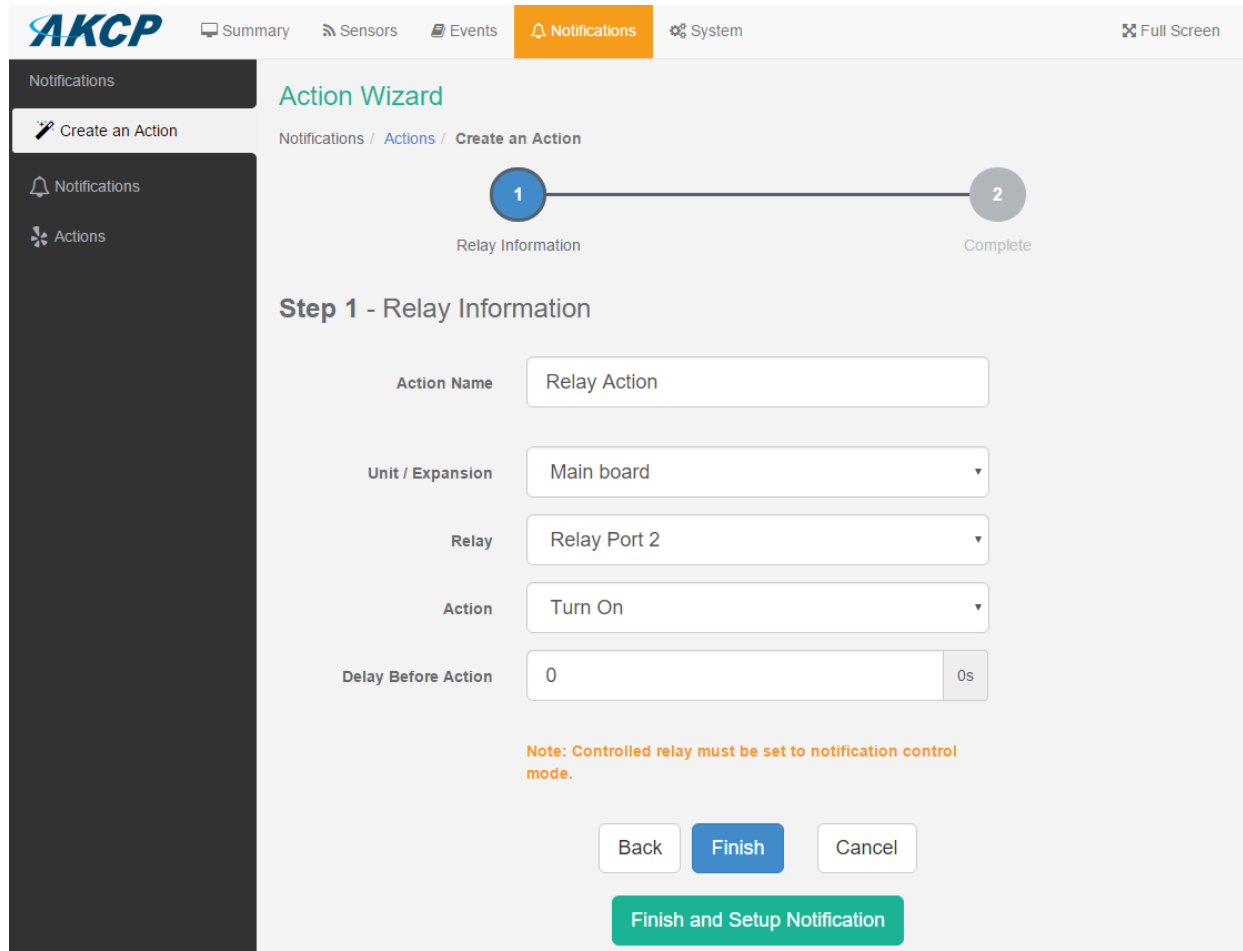
Retry Interval: 15s

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 AKCP web interface with the 'Notifications' tab selected. The 'Action Wizard' is displayed, showing a progress bar with two steps: '1 Relay Information' and '2 Complete'. The current step is 'Step 1 - Relay Information'. The form contains the following fields:

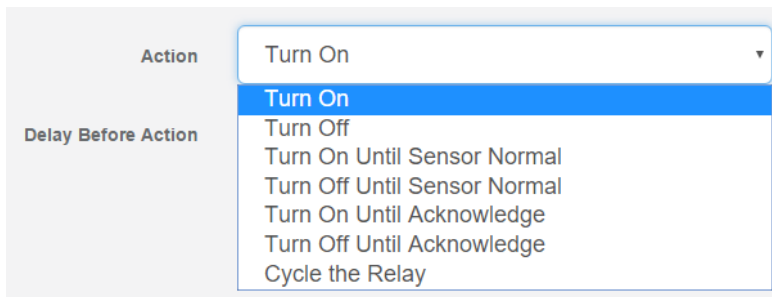
- Action Name:** Relay Action
- Unit / Expansion:** Main board
- Relay:** Relay Port 2
- Action:** Turn On
- Delay Before Action:** 0 0s

A note at the bottom states: "Note: Controlled relay must be set to notification control mode." Below the form are buttons for 'Back', 'Finish', 'Cancel', and a large green 'Finish and Setup Notification' button.

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.

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



The screenshot shows a dropdown menu for the 'Action' field. The menu is open, displaying the following options: Turn On (selected), Turn Off, Turn On Until Sensor Normal, Turn Off Until Sensor Normal, Turn On Until Acknowledge, Turn Off Until Acknowledge, and Cycle the Relay.

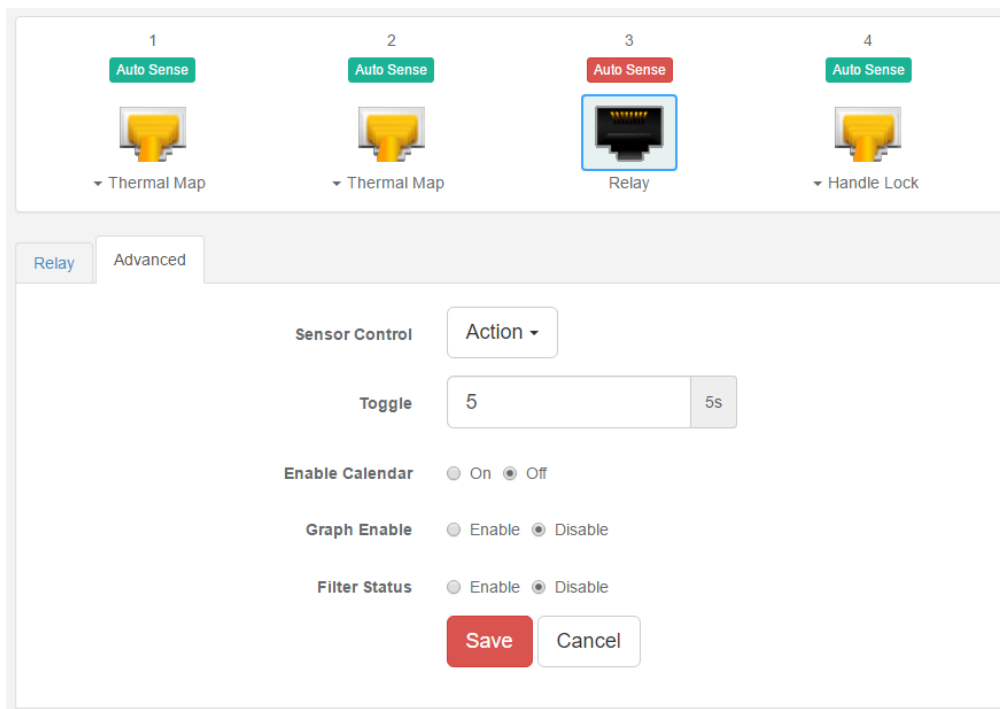
If you click on the **Finish and Setup Notification** button, this will launch the **Link Notification Wizard** where you can use the new action for making a notification.



The screenshot shows the 'Cycle Time' input field with the value '5' and a unit of '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:

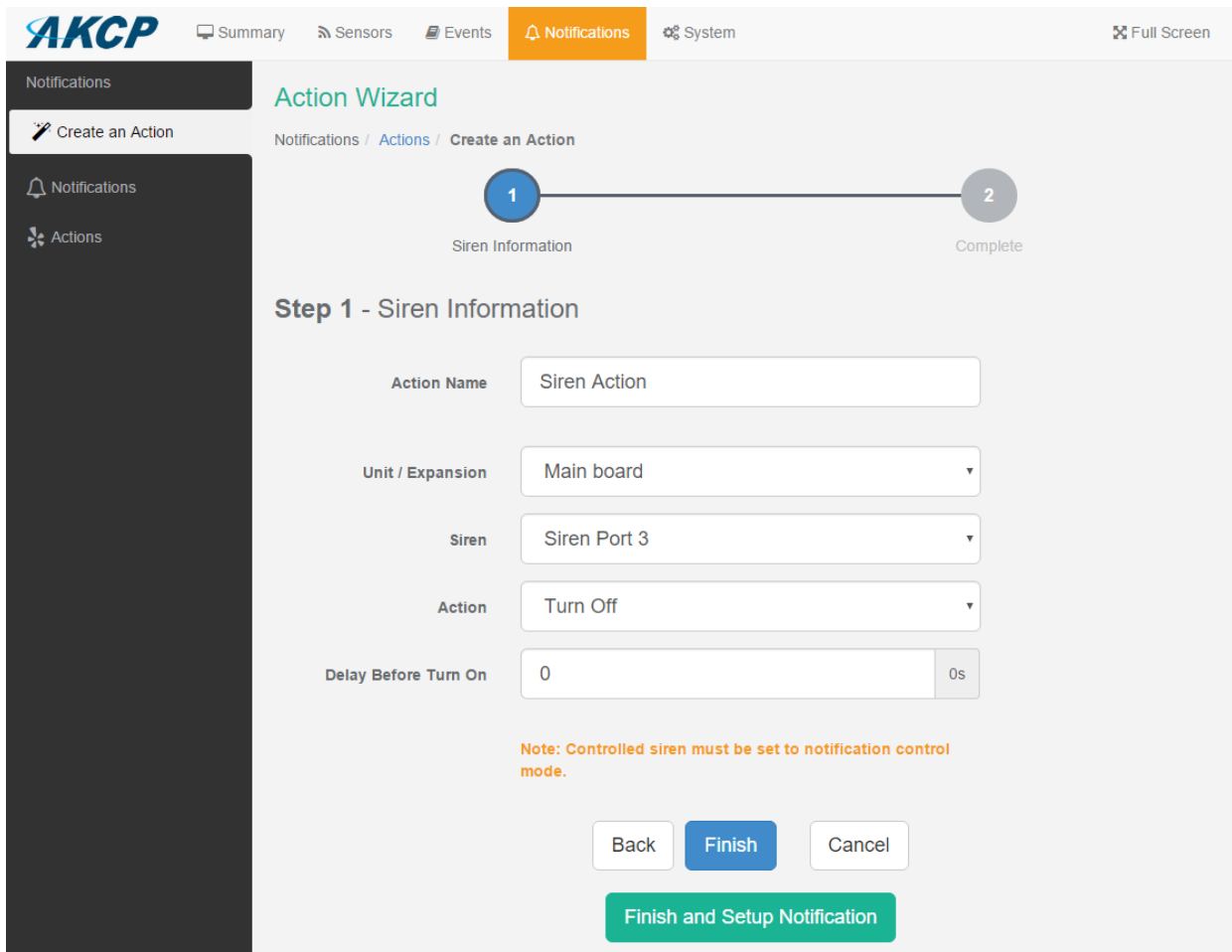


The screenshot shows the 'Sensors' page with four sensor cards: 1. Thermal Map (Auto Sense), 2. Thermal Map (Auto Sense), 3. Relay (Auto Sense), and 4. Handle Lock (Auto Sense). The 'Relay' card is selected. Below the cards, there are tabs for 'Relay' and 'Advanced'. The 'Advanced' tab is active, showing the following settings: Sensor Control (Action), Toggle (5s), Enable Calendar (On), Graph Enable (Disable), and Filter Status (Disable). There are 'Save' and 'Cancel' buttons at the bottom.

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.



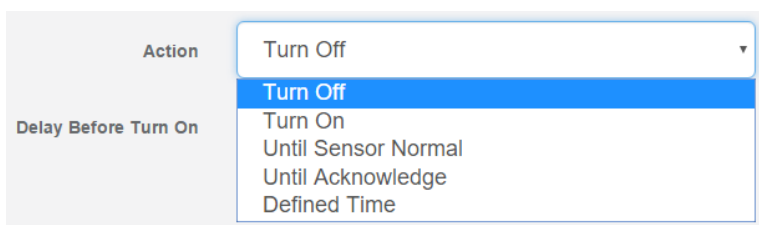
The screenshot shows the AKCP Action Wizard interface. The top navigation bar includes Summary, Sensors, Events, Notifications (active), and System. A sidebar on the left shows Notifications and Actions. The main area is titled 'Action Wizard' and shows a progress bar with two steps: 1. Siren Information and 2. Complete. The current step is 'Step 1 - Siren Information'. The form contains the following fields:

- Action Name: Siren Action
- Unit / Expansion: Main board
- Siren: Siren Port 3
- Action: Turn Off
- Delay Before Turn On: 0

A note below the fields states: 'Note: Controlled siren must be set to notification control mode.' At the bottom, there are buttons for Back, Finish, Cancel, and a green button for Finish and Setup Notification.

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:

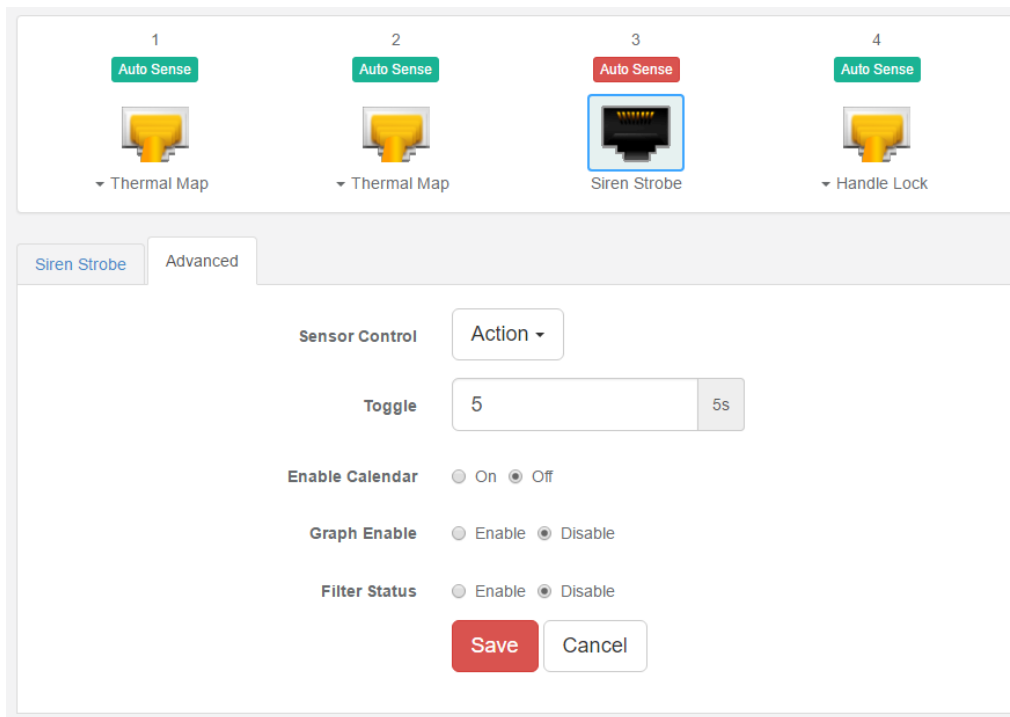


The screenshot shows a dropdown menu for the Action field. The options are:

- Turn Off (selected)
- Turn On
- Until Sensor Normal
- Until Acknowledge
- Defined Time

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

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



The screenshot displays the AKCP SP2+ Sensors configuration interface. At the top, there are four sensor slots, each with an 'Auto Sense' button and a dropdown menu. Slot 1 and 2 are labeled 'Thermal Map' with a yellow icon. Slot 3 is labeled 'Siren Strobe' with a black icon and is currently selected. Slot 4 is labeled 'Handle Lock' with a yellow icon. Below the sensor slots, there are two tabs: 'Siren Strobe' (selected) and 'Advanced'. The 'Siren Strobe' tab contains the following settings:

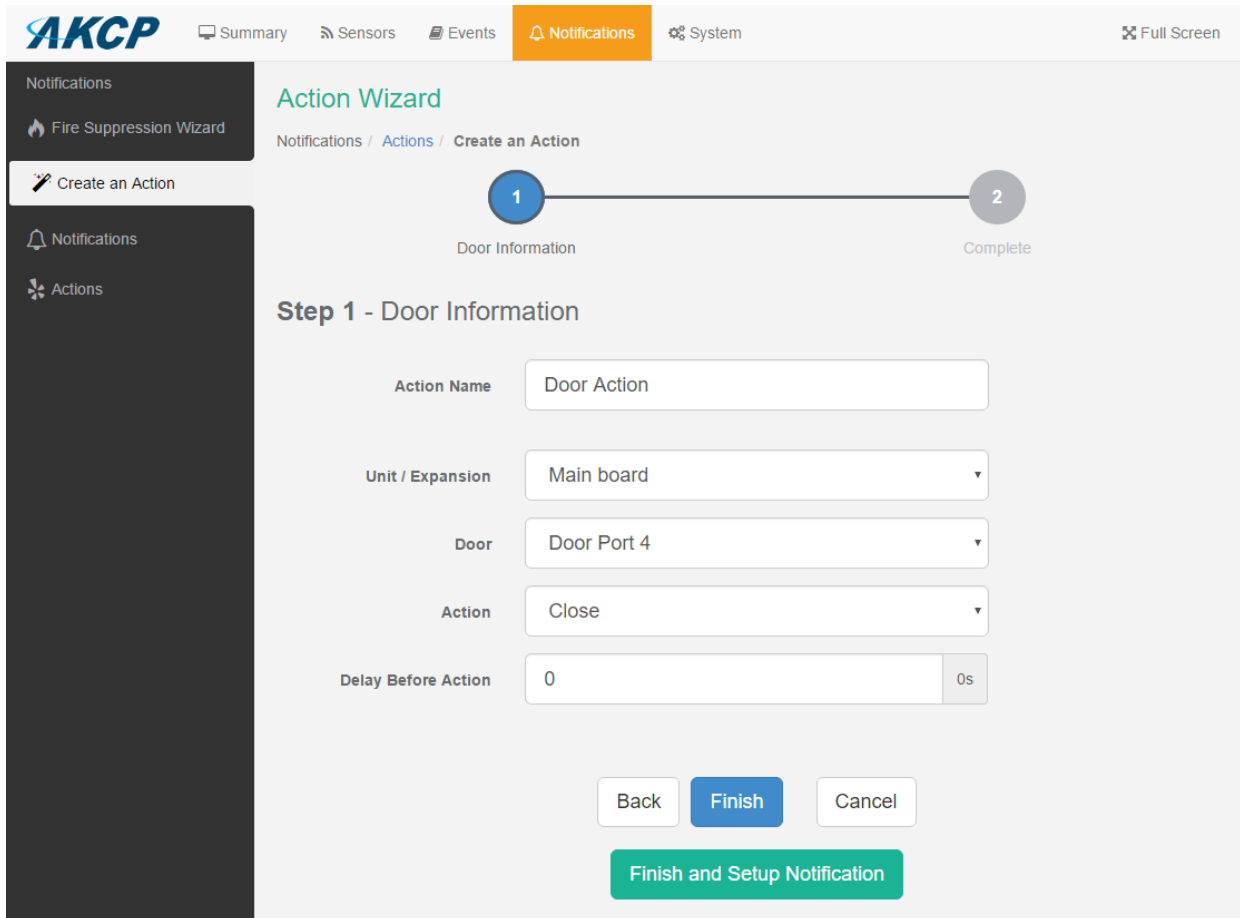
- Sensor Control:** A dropdown menu currently set to 'Action'.
- Toggle:** A numeric input field set to '5' with a '5s' unit indicator.
- Enable Calendar:** Radio buttons for 'On' and 'Off', with 'Off' selected.
- Graph Enable:** Radio buttons for 'Enable' and 'Disable', with 'Disable' selected.
- Filter Status:** Radio buttons for 'Enable' and 'Disable', with 'Disable' selected.

At the bottom of the 'Siren Strobe' tab, there 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.



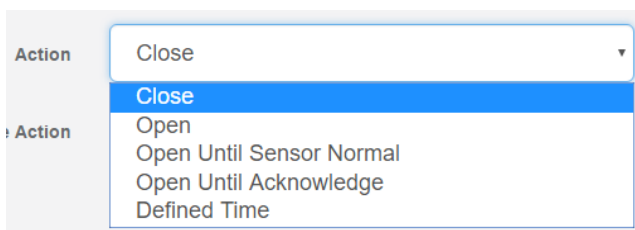
The screenshot shows the AKCP web interface with the 'Notifications' tab selected. The 'Action Wizard' is displayed, showing a progress bar with two steps: '1 Door Information' and '2 Complete'. The 'Step 1 - Door Information' section contains the following fields:

- 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 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

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

Action

Defined Time

Door Open Period

5

5s

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

Main board

Sensors / Main board

1

Auto Sense

Thermal Map

2

Auto Sense

Thermal Map

3

Auto Sense

N/C

4

Auto Sense

Handle Lock

Handle Lock

Advanced

Status Text

Sensor Name

Door Port 4

Sensor Status

Closed

Sensor Currently

Online

Door Held Open Alert

30

30s

Door Lock Time

5

5s

Manual Control

Unlock

Save

Cancel

You can choose to manually unlock the door using the **Unlock** button.

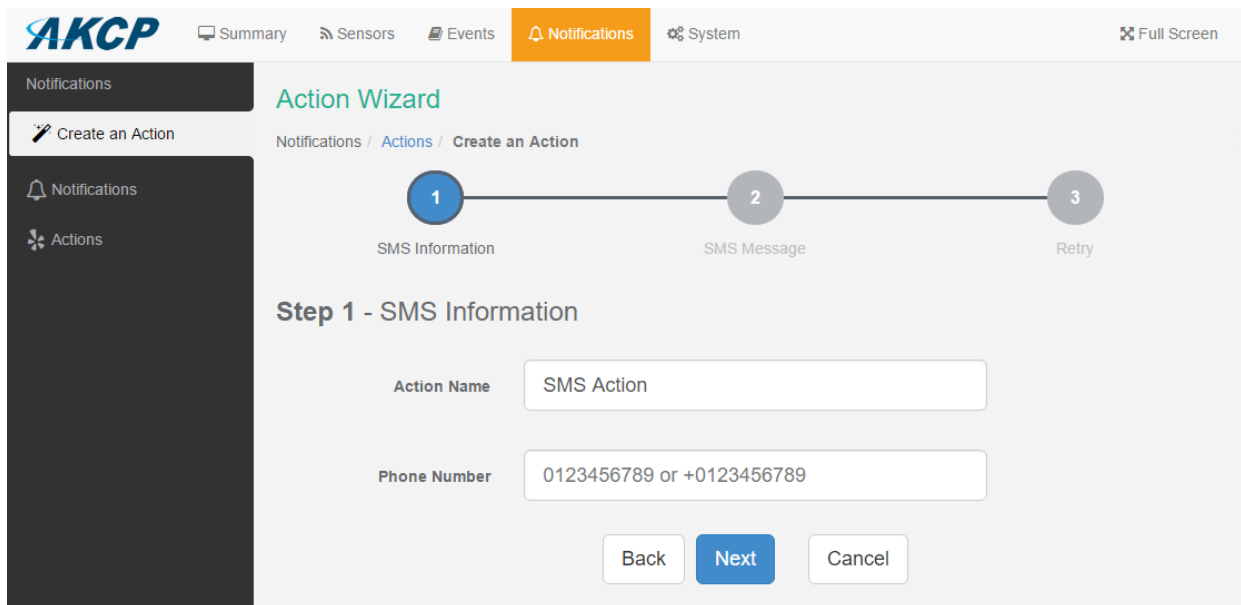
Further configuration of the Handle Lock is detailed in the separate **SP2+ Swing Handle Lock manual**.

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 internal modem module is needed to be connected and set up for this action.



The screenshot shows the AKCP web interface with the 'Notifications' tab selected. The 'Action Wizard' is displayed, showing a three-step process: 1. SMS Information, 2. SMS Message, and 3. Retry. The current step is 'Step 1 - SMS Information'. The form includes an 'Action Name' field with the value 'SMS Action' and a 'Phone Number' field with the value '0123456789 or +0123456789'. At the bottom, there are 'Back', 'Next', and 'Cancel' buttons. The 'Next' button is highlighted in blue.

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

Testing Sensor Port 1 is now 80 Unit, status is now Normal

Customize

Back

Next

Cancel

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

\$[DESCRIPTION] is now \$[VALUE] \$[UNIT],
status is now \$[STATUS]

Preview

Restore Default

Macro Description

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

The screenshot shows the 'Action Wizard' interface for creating an action. At the top, there is a breadcrumb trail: 'Notifications / Actions / Create an Action'. Below this is a progress bar with three steps: 1. SMS Information, 2. SMS Message, and 3. Retry. Step 3 is currently active and highlighted. The main heading for this step is 'Step 3 - Retry'. Below the heading, there are two configuration fields: 'Maximum Times to Retry' with a dropdown menu set to '0', and 'Retry Interval' with a text input set to '10' and a unit selector set to '10s'. At the bottom of the form, there are three buttons: 'Back', 'Finish', and 'Cancel'. Below these buttons is a large green button labeled 'Finish and Setup Notification'.

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.

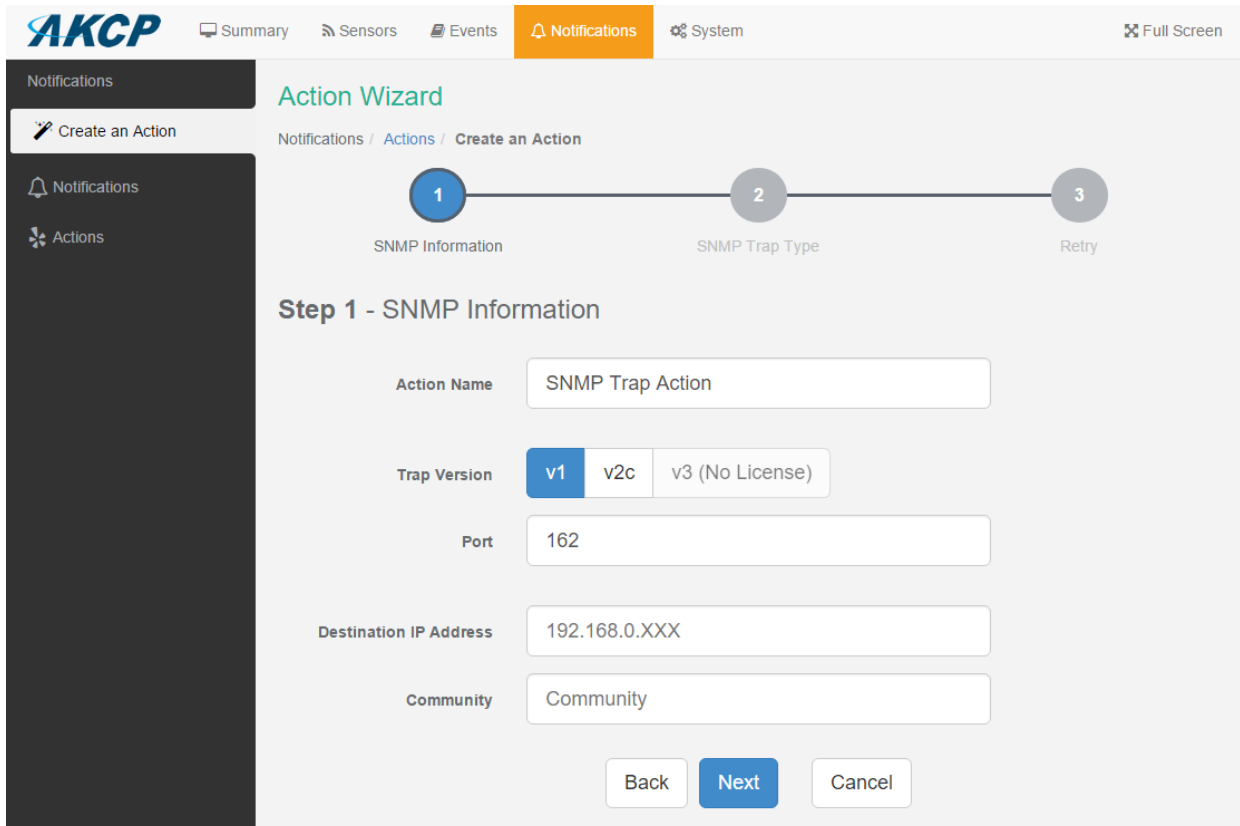
Test the SIM card on mobile phone: verify the account is active, has adequate credit for making phone calls and that the PIN code is disabled.

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 AKCP web interface with the 'Notifications' menu selected. The 'Action Wizard' is displayed, showing a three-step process: 1. SNMP Information, 2. SNMP Trap Type, and 3. Retry. The current step is 'Step 1 - SNMP Information'. The form 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: customTypeTraps

VarBind

- ☒ 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

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

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 4

SNMP Information SNMP Details SNMP Trap Type Retry

Step 4 - Retry

Maximum Time to Retry 0

Retry Intervals 10 10s

Back Finish Cancel

Finish and Setup Notification

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 **SP2+ 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'.
- Navigation:** At the bottom, 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

2

3

4

SNMP Information
SNMP Details
SNMP Trap Type
Retry

Step 2 - SNMP Details

SNMP Trap or SNMP Inform

SNMP Trap
SNMP Inform

SNMPv3 User Name

SNMPv3 engineID

Security Level
authPriv

Authentication Protocol
MD5

Authentication Protocol Pass Phrase
Authentication Protocol Pass Phrase

Privacy Protocol
DES

Privacy Protocol Pass Phrase
Privacy Protocol Pass Phrase

Back

Next

Cancel

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

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 — 4

SNMP Information SNMP Details SNMP Trap Type 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.

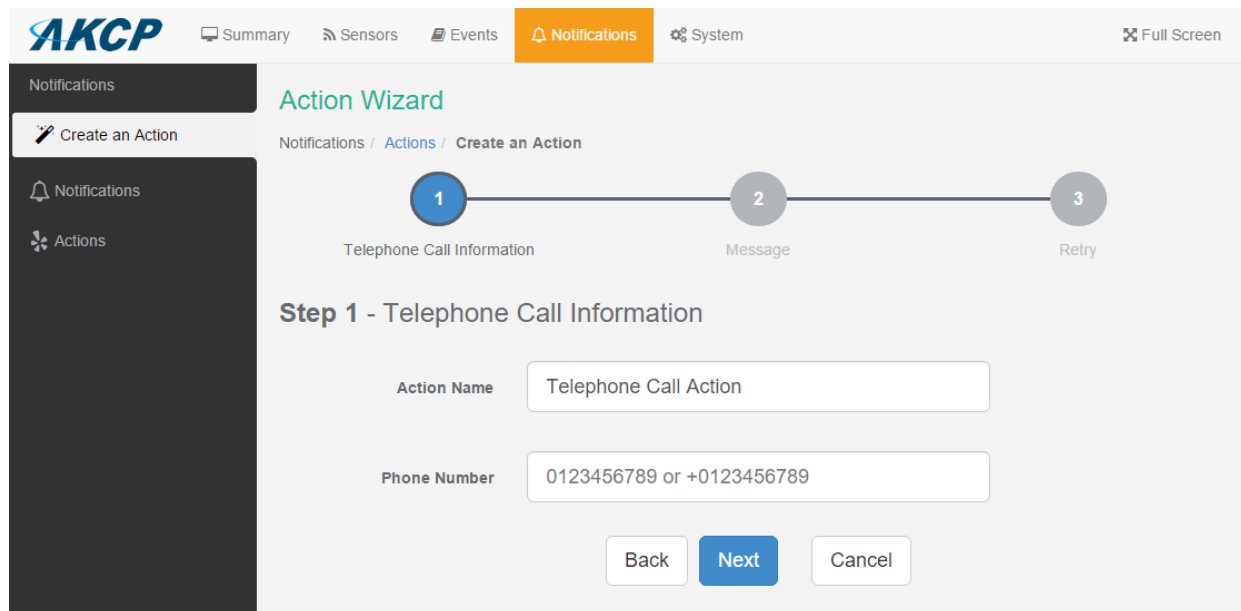
If you click on the **Finish and Setup Notification** button, this will launch the **Link Notification Wizard** where you can use the new action for making a notification.

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 internal modem module is needed to be connected and set up for this action.



The screenshot shows the AKCP web interface. The top navigation bar includes 'Summary', 'Sensors', 'Events', 'Notifications' (highlighted), and 'System'. A 'Full Screen' button is on the right. The left sidebar has 'Notifications' and 'Actions' (selected). The main area is titled 'Action Wizard' and shows a progress bar with three steps: 1. Telephone Call Information, 2. Message, and 3. Retry. Below the progress bar, 'Step 1 - Telephone Call Information' is displayed. It contains two input fields: 'Action Name' with the value 'Telephone Call Action' and 'Phone Number' with the value '0123456789 or +0123456789'. At the bottom are 'Back', 'Next' (highlighted), and 'Cancel' buttons.

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

Telephone Call Information
Message
Retry

Step 2 - Speech Output and Message

Speech Volume

Min Avg Max

Speech Speed

Min Avg Max

Speech Acknowledge

No acknowledge

Message

Testing Sensor Port 1 is now 80 Unit, status is now Normal

Customize

Back

Next

Cancel

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

No acknowledge

Message

No acknowledge
Play acknowledge message first
Play acknowledge message last

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 — 2 — 3

Telephone Call Information Message Retry

Step 3 - Retry

Maximum Times to Retry:

Retry Interval: 10s

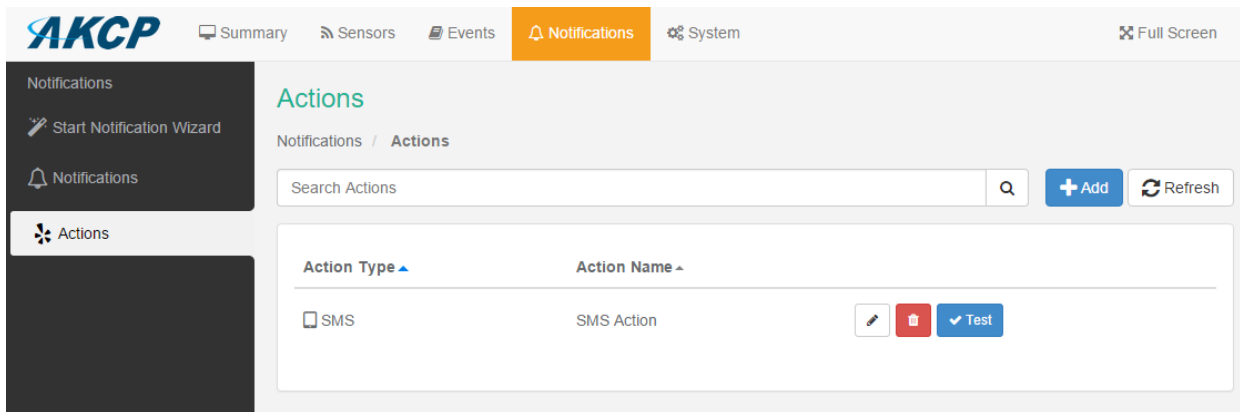
[Back](#) [Finish](#) [Cancel](#)

[Finish and Setup Notification](#)

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

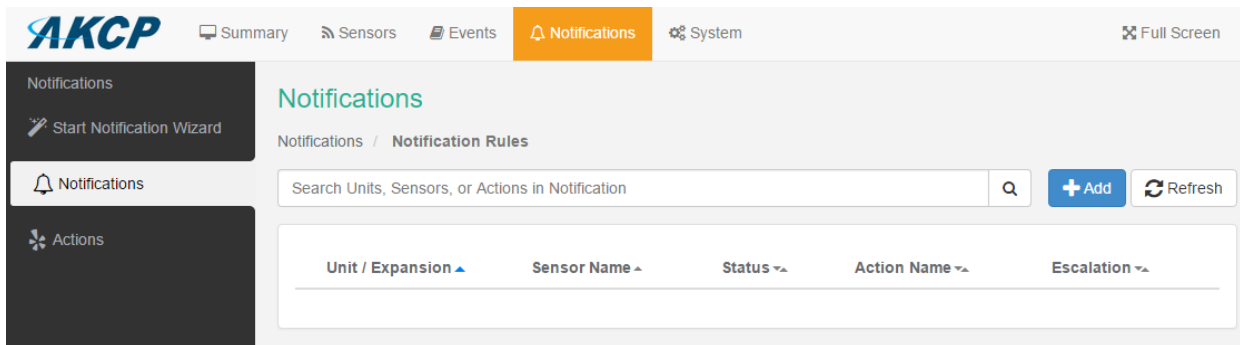
If you click on the **Finish and Setup Notification** button, this will launch the **Link Notification Wizard** where you can use the new action for making a notification.

Example notification setup: SMS Notification



The screenshot shows the AKCP web interface. The top navigation bar includes 'Summary', 'Sensors', 'Events', 'Notifications' (highlighted), and 'System'. A 'Full Screen' button is on the right. The left sidebar has 'Notifications' and 'Actions' (selected). The main content area is titled 'Actions' and shows a table with one row: 'SMS' under 'Action Type' and 'SMS Action' under 'Action Name'. There are buttons for 'Add', 'Refresh', 'Edit', 'Delete', and 'Test'.

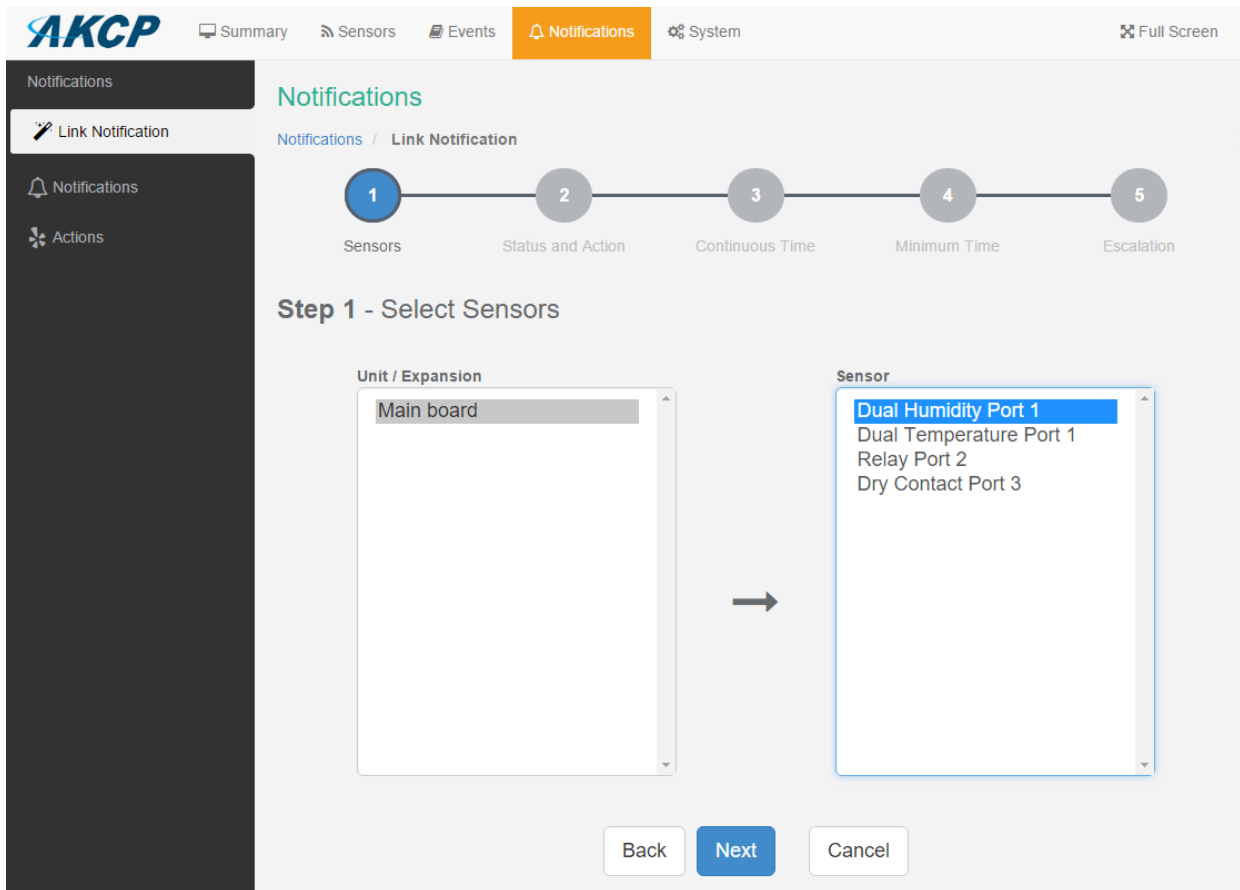
In our example we've set up an SMS action and we'll link that to notify us by SMS when the *Humidity sensor's* value reaches *High Critical*.



The screenshot shows the AKCP web interface. The top navigation bar includes 'Summary', 'Sensors', 'Events', 'Notifications' (highlighted), and 'System'. A 'Full Screen' button is on the right. The left sidebar has 'Notifications' (selected) and 'Actions'. The main content area is titled 'Notifications' and shows a table with columns: 'Unit / Expansion', 'Sensor Name', 'Status', 'Action Name', and 'Escalation'. There are buttons for 'Add' and 'Refresh'.

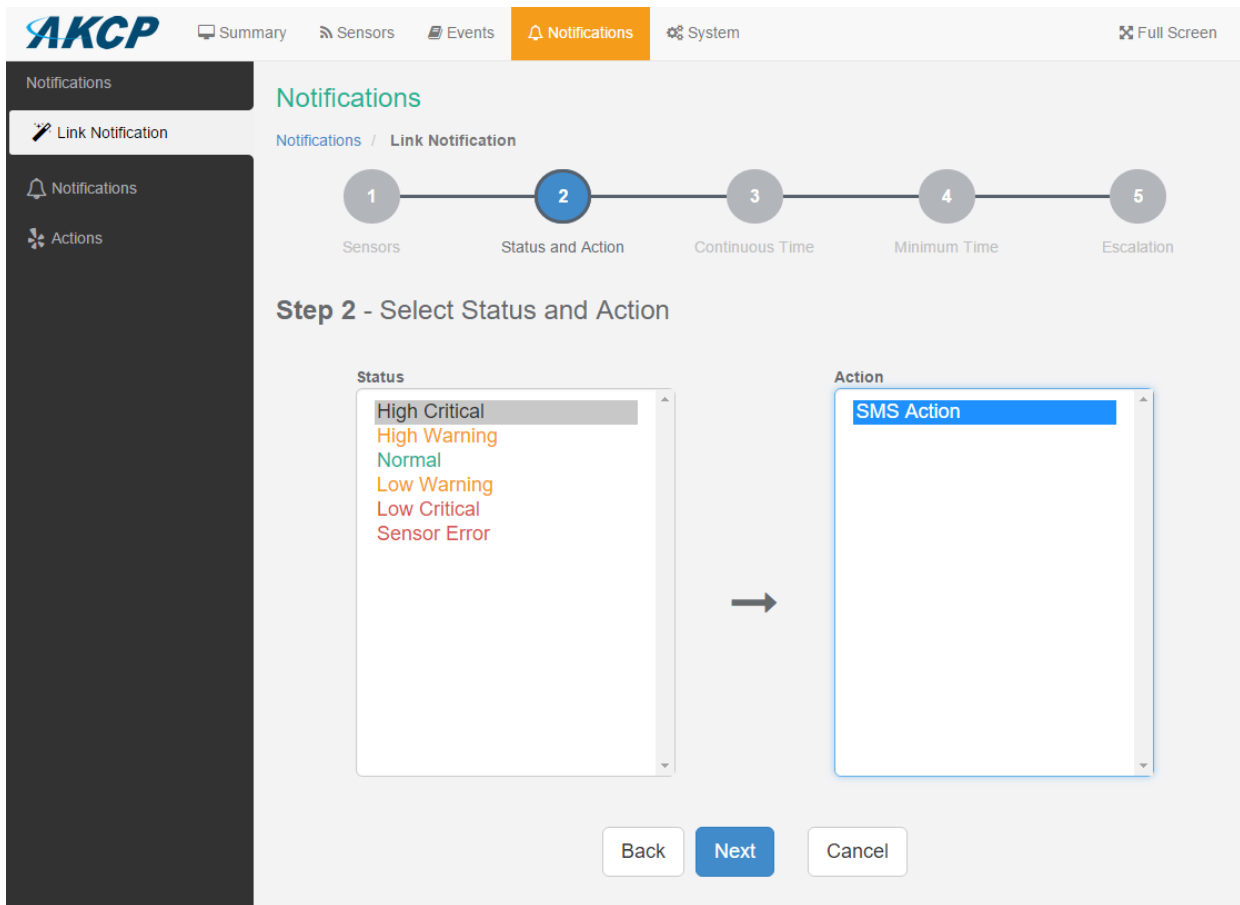
On the **Notifications** menu we click on **Add**.
This will start the **Link Notification Wizard**.

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



The screenshot shows the AKCP web interface for configuring notifications. The top navigation bar includes links for Summary, Sensors, Events, Notifications (highlighted), and System. A 'Full Screen' button is also present. The left sidebar contains 'Notifications' and 'Link Notification' (selected), with sub-links for 'Notifications' and 'Actions'. The main content area is titled 'Notifications' and shows a progress bar with five steps: 1. Sensors, 2. Status and Action, 3. Continuous Time, 4. Minimum Time, and 5. Escalation. Step 1 is currently active. Below the progress bar, the title 'Step 1 - Select Sensors' is displayed. The interface features two selection lists: 'Unit / Expansion' with 'Main board' selected, and 'Sensor' with 'Dual Humidity Port 1' selected. An arrow points from the 'Unit / Expansion' list to the 'Sensor' list. At the bottom, there are 'Back', 'Next', and 'Cancel' buttons.

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.



AKCP

Summary Sensors Events Notifications System Full Screen

Notifications

Link Notification

Notifications

Actions

Notifications / Link Notification

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

Step 2 - Select Status and Action

Status

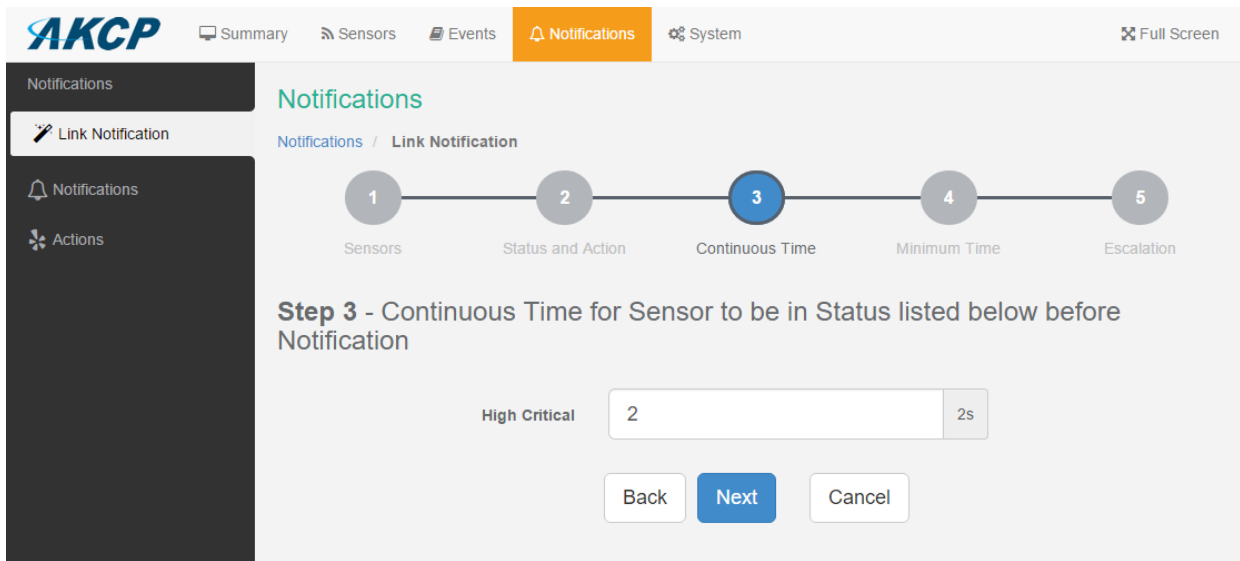
High Critical
High Warning
Normal
Low Warning
Low Critical
Sensor Error

Action

SMS Action

Back Next Cancel

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.



Notifications

Summary Sensors Events **Notifications** System Full Screen

Notifications / Link Notification

1 2 3 4 5

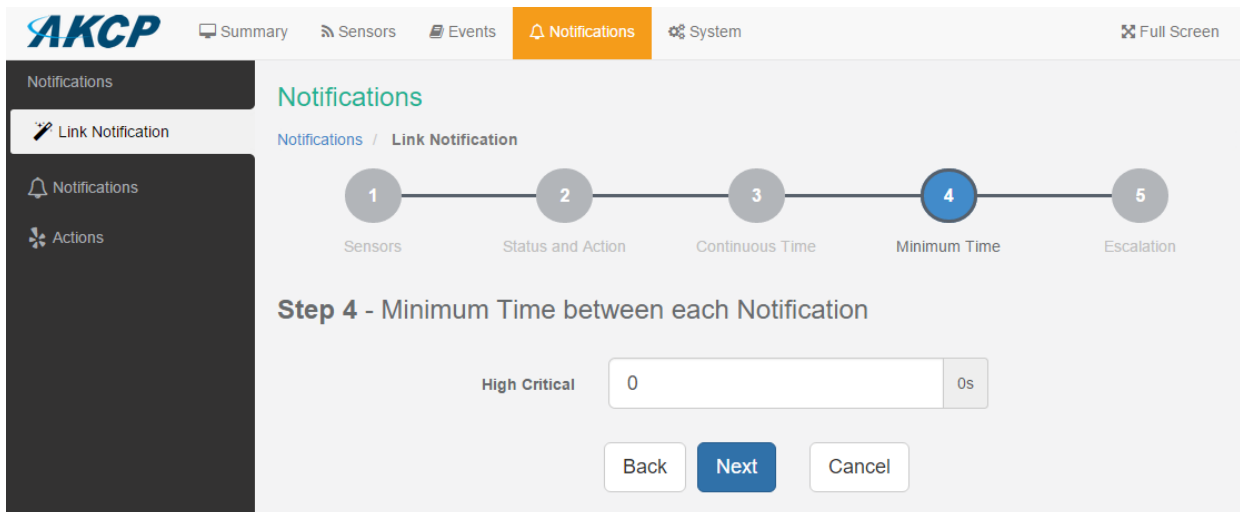
Sensors Status and Action Continuous Time Minimum Time Escalation

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

Summary Sensors Events Notifications System Full Screen

Notifications / Link Notification

1 2 3 4 5

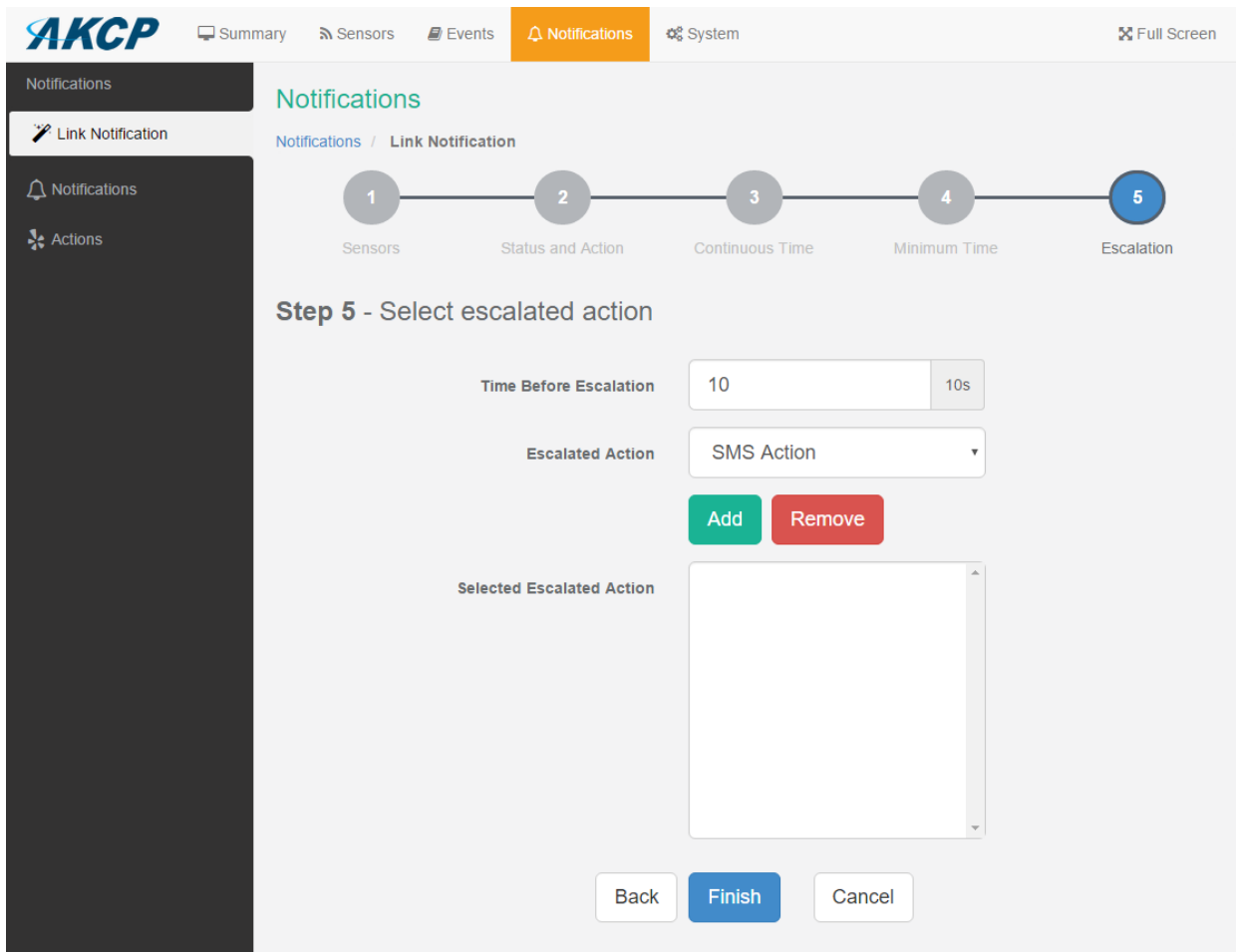
Sensors Status and Action Continuous Time Minimum Time Escalation

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.



Notifications

Summary Sensors Events **Notifications** System

Full Screen

Notifications

Link Notification

Notifications

Actions

Notifications

Notifications / Link Notification

1 2 3 4 5

Sensors Status and Action Continuous Time Minimum Time Escalation

Step 5 - Select escalated action

Time Before Escalation 10 10s

Escalated Action SMS Action

Add Remove

Selected Escalated Action

Back Finish Cancel

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.

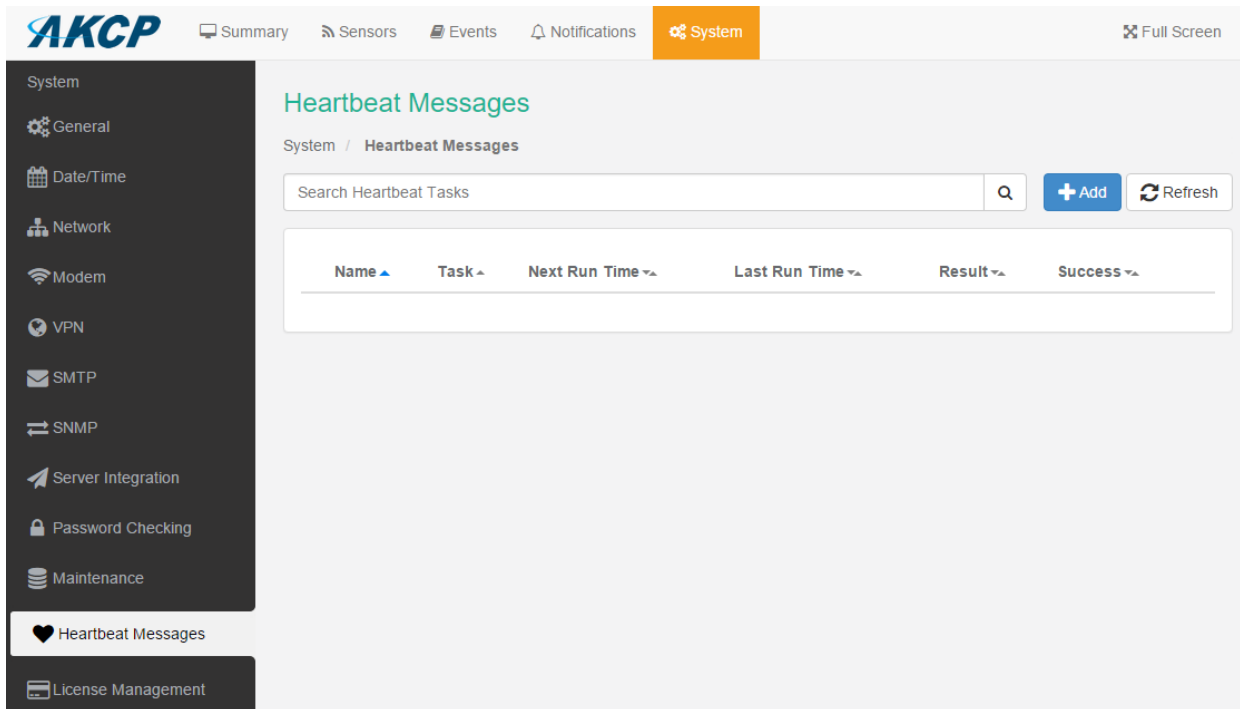
Notifications / Notification Rules

Unit / Expansion	Sensor Name	Status	Action Name	Escalation
☒ Main board	Dual Humidity Port 1	→ High Critical →	SMS Action	Edit Delete

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

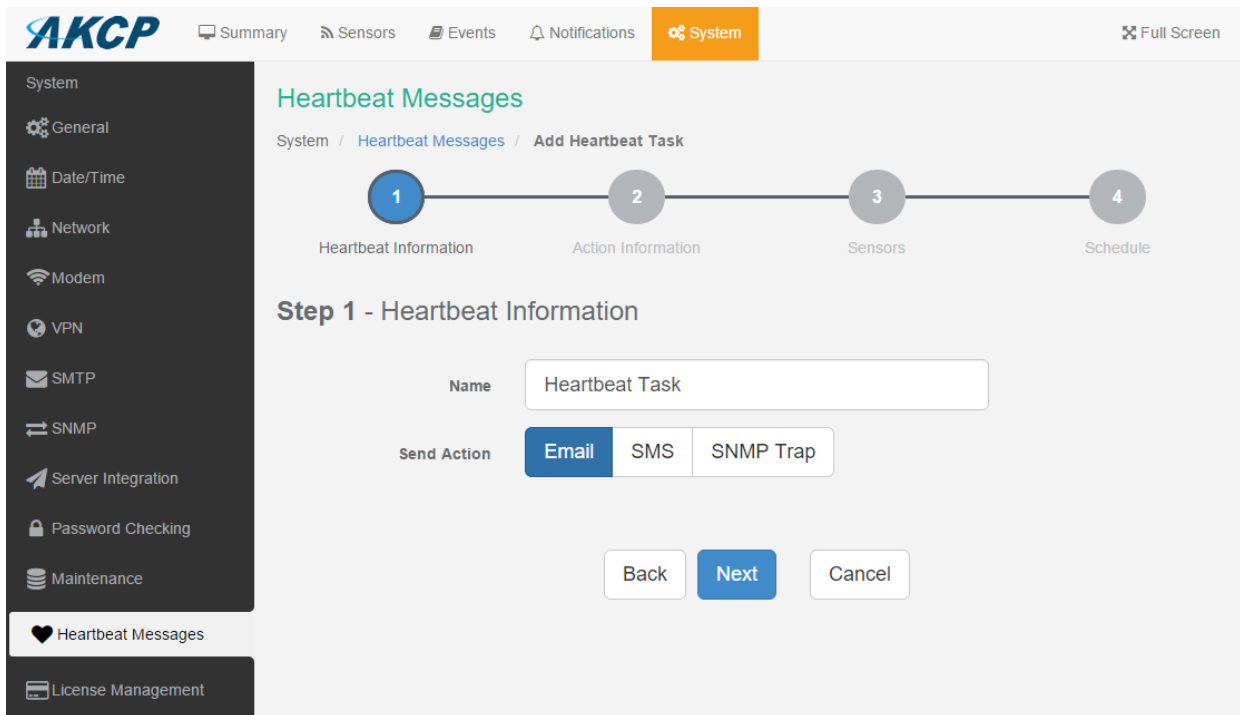
Heartbeat Messages

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 shows the AKCP web interface. The top navigation bar includes links for Summary, Sensors, Events, Notifications, and System (which is highlighted). A 'Full Screen' button is on the right. The left sidebar contains a list of system components: General, Date/Time, Network, Modem, VPN, SMTP, SNMP, Server Integration, Password Checking, Maintenance, Heartbeat Messages (highlighted with a heart icon), and License Management. The main content area is titled 'Heartbeat Messages' and shows a breadcrumb 'System / Heartbeat Messages'. Below the title is a search bar labeled 'Search Heartbeat Tasks' with a magnifying glass icon, an '+ Add' button, and a 'Refresh' button. A table with the following headers is displayed: 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.



Heartbeat Messages

System / Heartbeat Messages / Add Heartbeat Task

1 Heartbeat Information 2 Action Information 3 Sensors 4 Schedule

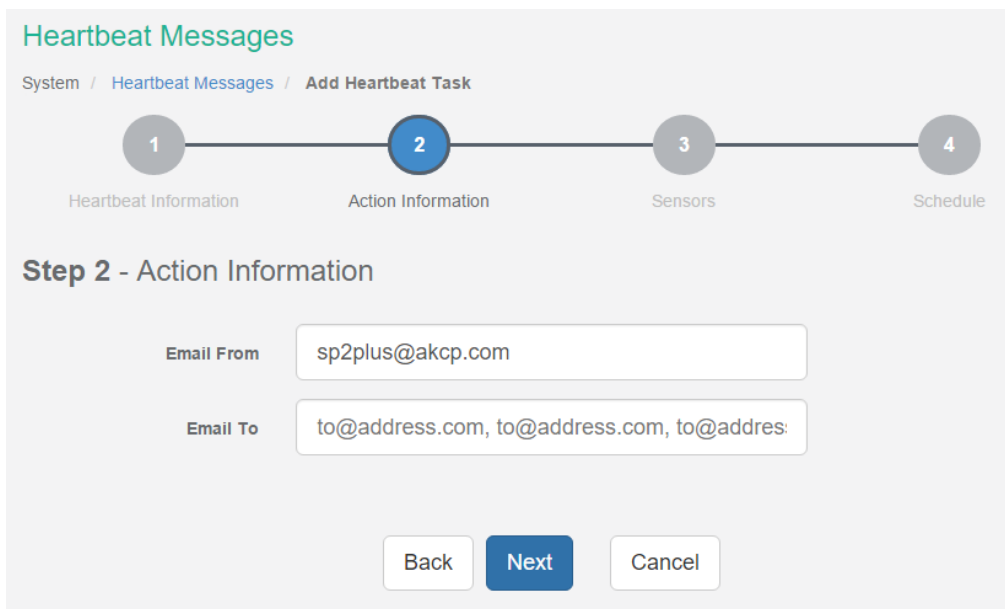
Step 1 - Heartbeat Information

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**.



Heartbeat Messages

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



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

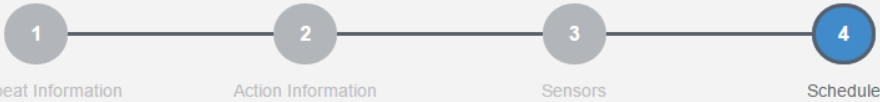
Back
Next
Cancel

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

Note: select at least one sensor.

Heartbeat Messages

System / Heartbeat Messages / Add Heartbeat Task



Step 4 - Schedule to perform this task

Perform this Task by

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



Step 4 - Schedule to perform this task

Perform this Task by

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 ▼	
☒ Heartbeat Task	Start at 22:00, Every 1 month(s)	01/03/2016, 22:00	-	OK	0	reset Edit 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.



Summary Sensors **Events** Notifications System

Notifications

Search

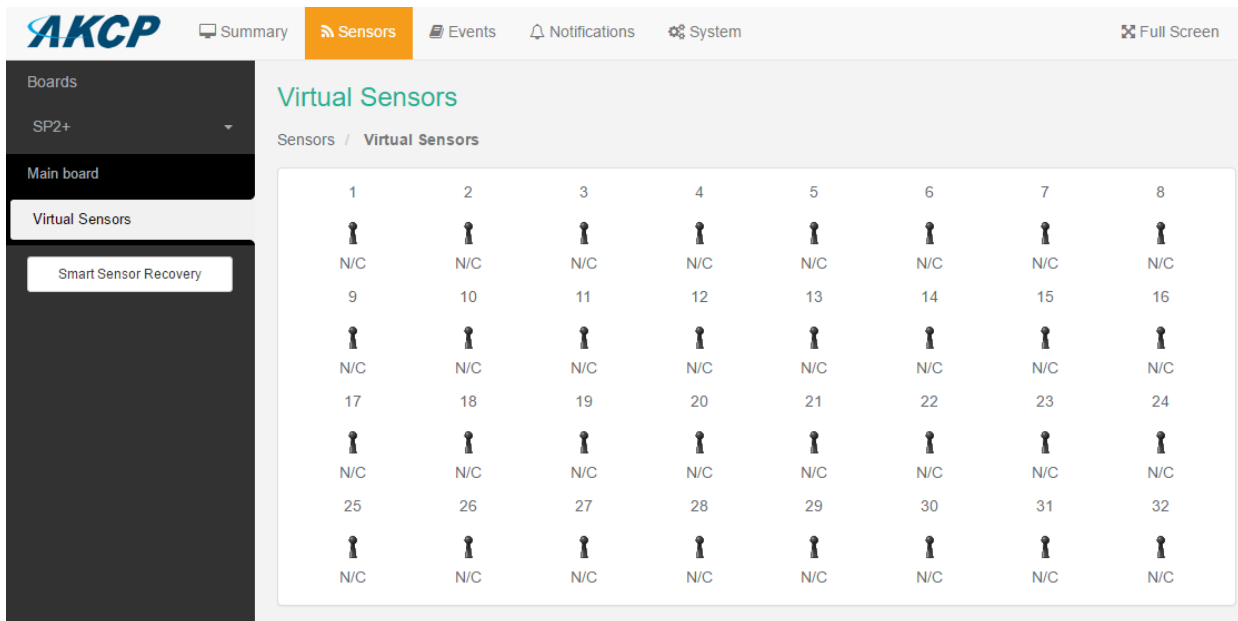
Date Start to Date End

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

First < 1 > Last

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

Virtual Sensors

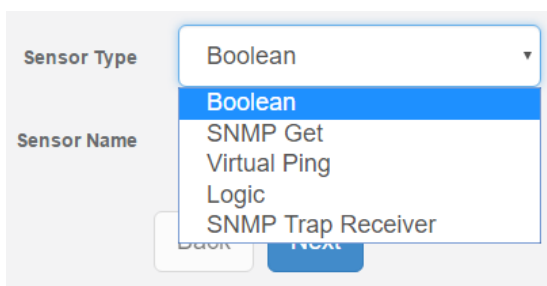


Virtual Sensors can be a very powerful tool in your monitoring system. On the SP2+ you can have up to 32 of these virtual sensors and they allow for a multitude of applications.

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 SP2+ as a probe manager. If you had a SP2+ and multiple sensorProbe devices they could all be monitored, mapped and alerted via the SP2+. 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.

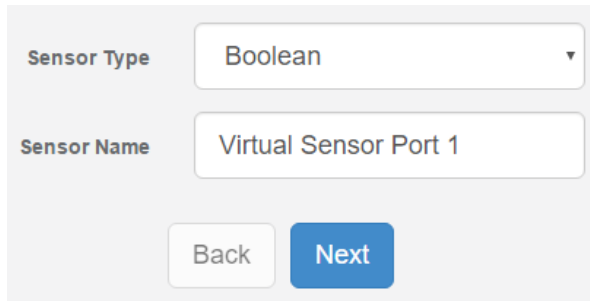
The first 5 sensors are free, if you need to use more you can purchase additional licenses (see the Licensing section in the Introduction manual).



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



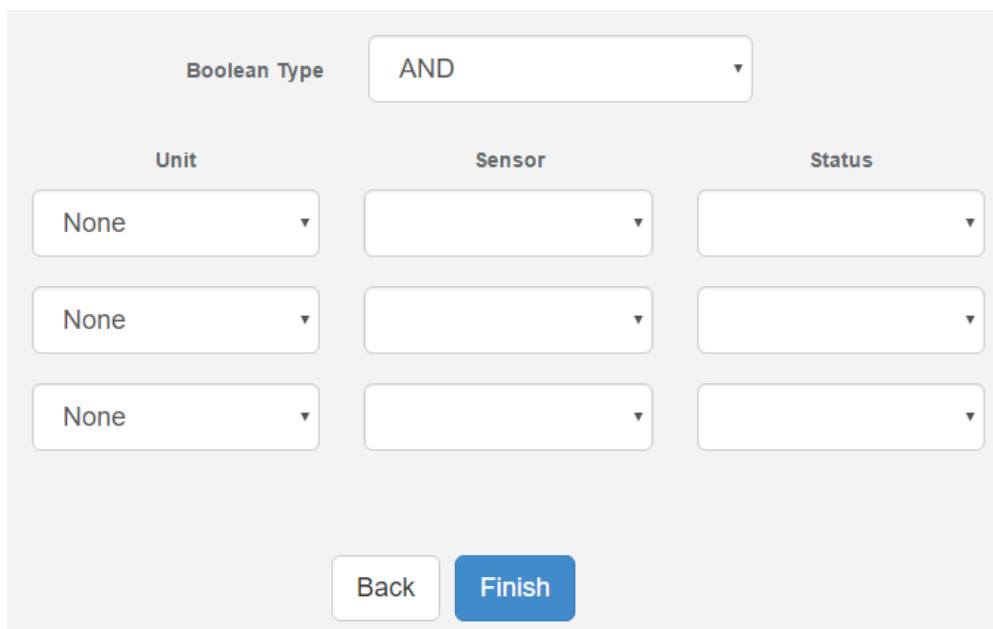
Sensor Type: Boolean

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:

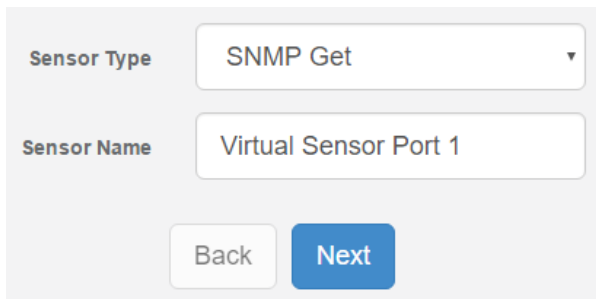
Unit	Sensor	Status
Main board	Dual Humidity Po	High Critical
Main board	Dual Temperature	Low Critical
Main board	Dry Contact Port :	Critical

Boolean Type: OR

Back Finish

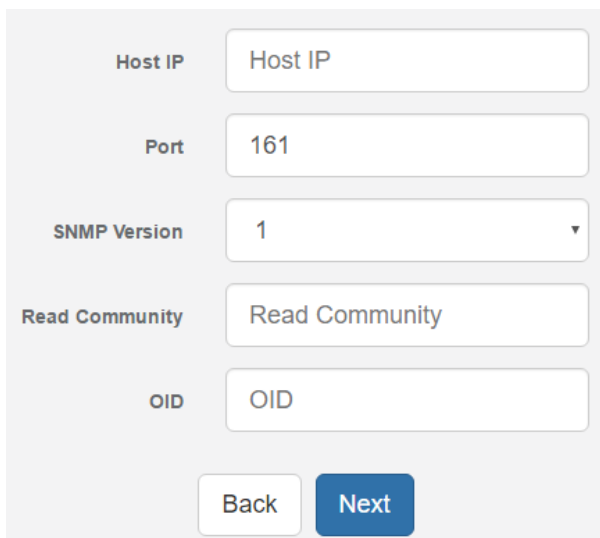
In this example picture the virtual sensor's status will be critical when any of the Humidity/Temperature/Dry Contact sensors will have a *high/low/critical* status.

SNMP Get



The form contains two input fields: 'Sensor Type' with a dropdown menu showing 'SNMP Get', and 'Sensor Name' with a text box containing 'Virtual Sensor Port 1'. At the bottom are 'Back' and 'Next' buttons.

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 with '161'), 'SNMP Version' (dropdown menu with '1'), 'Read Community' (text box), and 'OID' (text box). At the bottom are 'Back' and 'Next' buttons.

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.

Sensor Style	Switch
Normal State Value	0
Description of Status When Critical	Critical
Description of Status When Normal	Normal
Back 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.

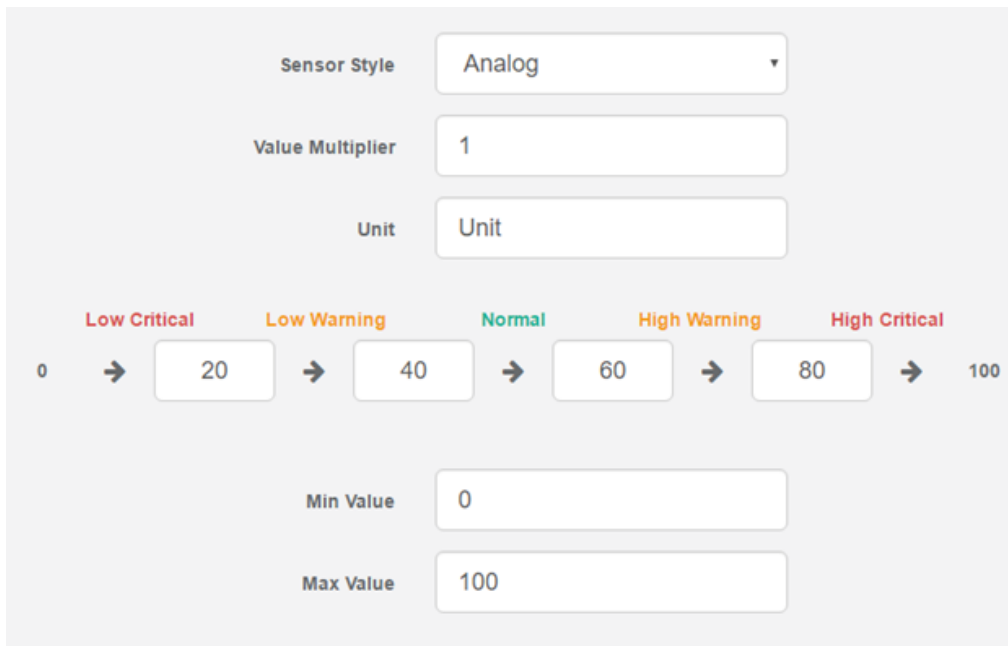
Sensor Style	Switch Switch Analog
Normal State Value	

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:



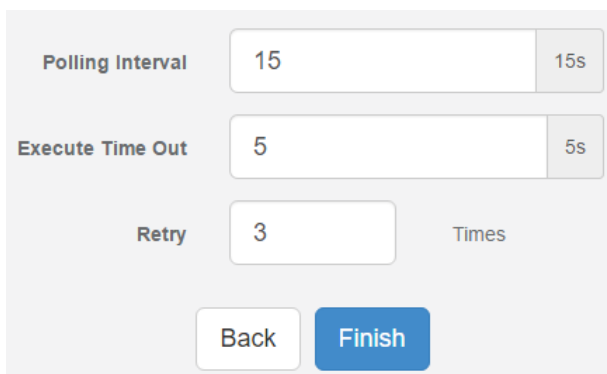
The screenshot shows the configuration interface for an Analog sensor. It includes the following fields and options:

- Sensor Style:** A dropdown menu set to "Analog".
- Value Multiplier:** A text input field containing the value "1".
- Unit:** A text input field containing the text "Unit".
- Value Range:** A horizontal scale from 0 to 100. Above the scale are five colored labels: "Low Critical" (red), "Low Warning" (orange), "Normal" (green), "High Warning" (yellow), and "High Critical" (red). Below the scale are five input boxes with values 20, 40, 60, 80, and 100, connected by right-pointing arrows. The "0" is at the start and "100" is at the end of the scale.
- Min Value:** A text input field containing the value "0".
- Max Value:** A text input field containing the 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.

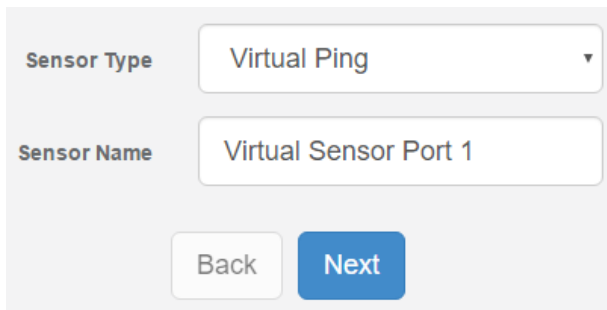


The screenshot shows the configuration interface for the Polling Interval, Execute Time Out, and Retry settings. It includes the following fields and buttons:

- Polling Interval:** A text input field containing the value "15", followed by a button labeled "15s".
- Execute Time Out:** A text input field containing the value "5", followed by a button labeled "5s".
- Retry:** A text input field containing the value "3", followed by the text "Times".
- Buttons:** Two buttons at the bottom: "Back" and "Finish".

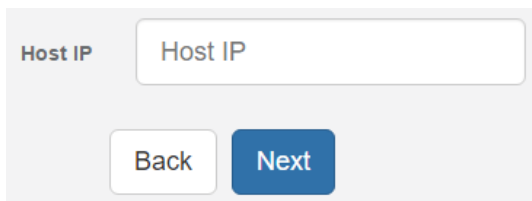
You can also configure the time interval between data polling, timeout and retries.

Virtual Ping



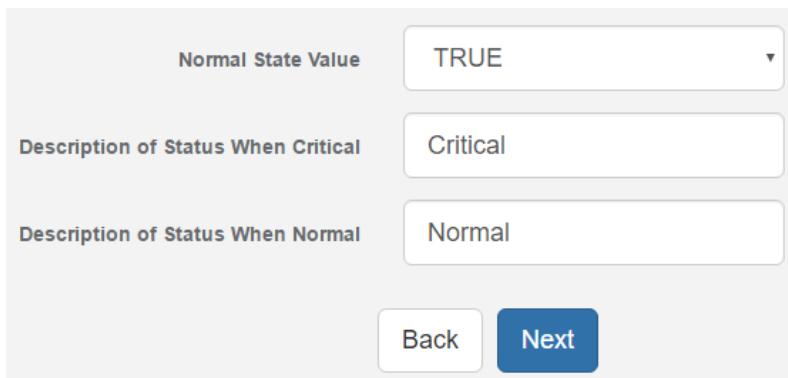
A configuration form for a Virtual Ping sensor. It features two input fields: 'Sensor Type' with a dropdown menu showing 'Virtual Ping', and 'Sensor Name' with a text box containing 'Virtual Sensor Port 1'. At the bottom are 'Back' and 'Next' buttons.

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



A configuration form for the Host IP. It has a single text input field labeled 'Host IP' containing the text 'Host IP'. Below the field are 'Back' and 'Next' buttons.

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



A configuration form for status descriptions. It includes three input fields: 'Normal State Value' with a dropdown menu set to 'TRUE', 'Description of Status When Critical' with a text box containing 'Critical', and 'Description of Status When Normal' with a text box containing 'Normal'. 'Back' and 'Next' buttons are at the bottom.

Description when Normal: eg, online/reachable

Description when Critical: eg, offline/unreachable

Normal State Value	TRUE
Status When Critical	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	5	5s
Execute Time Out	1	1s
Retry	3	Times
Back 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.

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

FlipFlop
FlipFlop
Dual Sensors FlipFlop

Trigger Logic
Dual Sensors FlipFlop

SET Source Sensor

Unit	Sensor	Status
Main board	Dual Temperature	High Critical
Main board	Dual Humidity Po	High Critical

RESET Source Sensor

Unit	Sensor	Status
Main board	Dual Temperature	Normal
Main board	Dual Humidity Po	Normal

Back
Finish

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 3)
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
Back 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

al State Value

Sensor Style

Value Multiplier

Unit

Low Critical Low Warning Normal High Warning High Critical

0 → → → → → 100

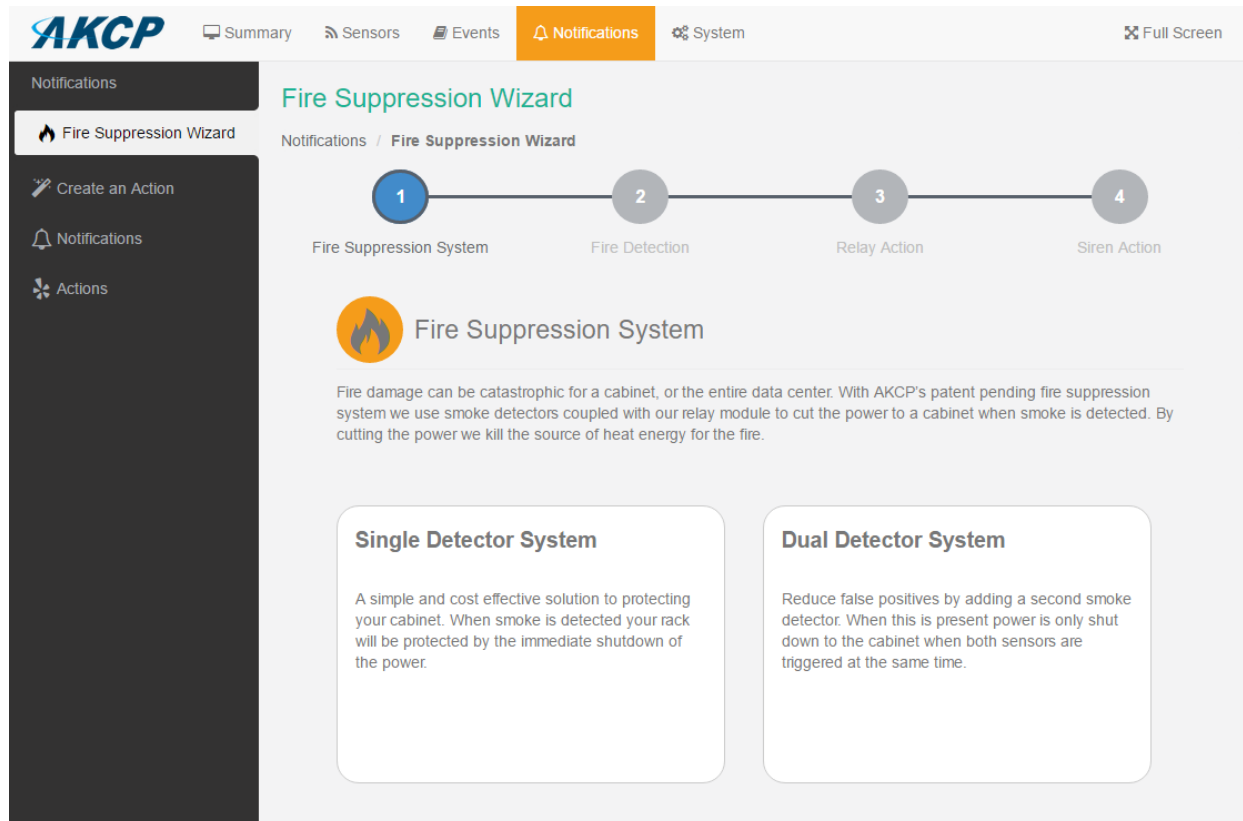
Min Value

Max Value

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

Main board

Sensor

Smoke Detector Port 2

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

Smoke present for

2

2s

Back

Next

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

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

Select an existing relay action

Relay
Relay Port 4

Power back on
Never

Choose from an existing relay action

Relay Action
Turn Relay Port 4 OFF

Create a new relay action

Fire Suppression Wizard

Notifications / Fire Suppression Wizard

1

2

3

4

Fire Suppression SystemFire DetectionRelay ActionSiren Action

Step 4 - Turn on siren when smoke is detected.

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

YesNo

BackFinish

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:

Fire Suppression Wizard

Notifications / Fire Suppression Wizard

1

2

3

4

Fire Suppression System
Fire Detection
Relay Action
Siren Action

Step 4 - Turn on siren when smoke is detected.

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

Yes
No

Create siren action to alert

Siren
Siren Port 3

Turn Off
Never

Back
Finish

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

Turn Off

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

Notifications / Notification Rules

Search Units, Sensors, or Actions in Notification

Unit / Expansion	Sensor Name	Status	Action Name	Escalation
☒ Main board	Smoke Detector Port 2	→ Smoke →	Turn Relay Port 4 OFF Turn Siren Port 3 ON	Edit 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

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.

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

Select an existing relay action

Relay
Relay Port 4

Power back on
Never

Choose from an existing relay action

Relay Action
Turn Relay Port 4 OFF

Create a new relay action

Fire Suppression Wizard

Notifications / Fire Suppression Wizard

1

2

3

4

Fire Suppression System
Fire Detection
Relay Action
Siren Action

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

Unit / Expansion	Sensor Name	Status	Action Name	Escalation
☒ Virtual Sensors	Dual Smoke Detector Port 1	→ Smoke →	Turn Relay Port 4 OFF	Edit Delete



Summary
Sensors
Events

Boards
SP2+
Main board
Virtual Sensors
Smart Sensor Recovery

Virtual Sensors

Sensors / Virtual Sensors

1

2

9

10

Dual Smoke...
N/C

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

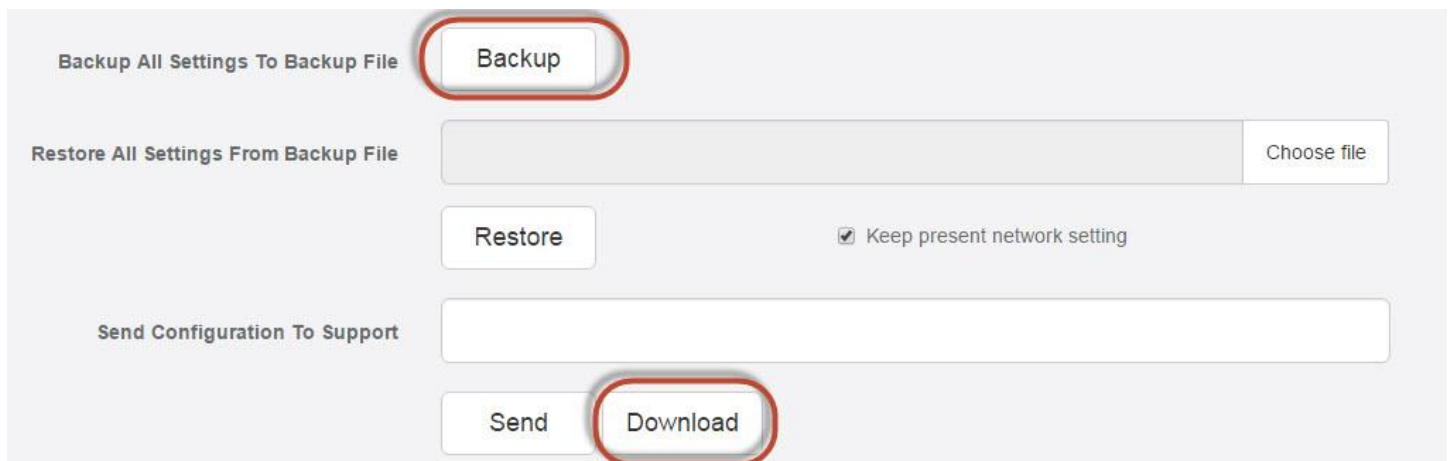
Troubleshooting

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

Please email support@akcp.com 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 web interface with three main sections:

- Backup All Settings To Backup File:** Contains a button labeled "Backup" which is circled in red.
- Restore All Settings From Backup File:** Contains a text input field, a "Choose file" button, a "Restore" button, and a checkbox labeled "Keep present network setting" which is checked.
- Send Configuration To Support:** Contains a text input field, a "Send" button, and a "Download" button which is circled in red.



Please contact support@akcp.com if you have any further technical questions or problems.

Thanks for Choosing AKCP!