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Mini Sensor Controlled Relay Manual

Mini Sensor Controlled Relay (AKCP Product Code MSCR)

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What is the AKCP SP+ Mini Sensor Controlled Relay?

The mini relay can be controlled by a sensors status. You can drive larger third party relays with a low current output from the sensorProbe (S2/4/8), securityProbe (SEC5ES, DCU), or the sensorProbe+ (SP2+ and SPX+ units).

If you have equipment with a relay that you would like to switch based on a sensor input. Use this smaller relay to drive the larger relay on your appliance. This adaptor can drive 5VDC coil relays consuming up to 200mA or higher coil voltage (up to 1A and 24VDC) with an external voltage source.

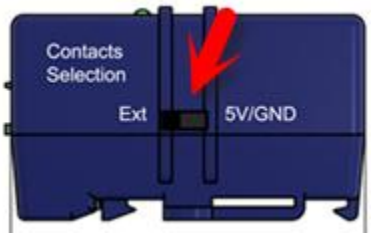
If the Mini Sensor Controlled Relay's specifications (see below) are not sufficient for your voltage applications, you may check our AC or DC Sensor Controlled Relay products which have higher ratings. See the relay specications below.

Advantages:
Control low output voltage and low current loads from a sensor status.
Drive third party external relays with 5VDC coil and up to 200mA of current.

Very Important Note: when providing 5V, this sensor is not isolated (does not have an isolated ground), so you need to make sure there is no voltage potential mismatch on the GND and 5V pins-when connecting to third party equipment, otherwise this could damage both the Control unit and the device.

Types of Configurations for the Mini Sensor Controlled Relay

There are two types of configurations for the MSCR, depending if you need the MSCR to provide 5V/GND or not.
These are determined by using the switch on the side of the sensor shown here:-



When the switch is set to the **Ext (External)** position then the output NC/5V and NO/GND pins *will not be powered*, and the connections would be wired as shown in the wiring diagram below and the example of a 12V coil relay.
When the switch is set to the **5V/GND** position then the output NC/5V and NO/GND pins *will be powered*, and the connections would be wired as shown in the example of the 5V coil relay.
The other example shows how the MSCR connects to the RJ-45 port on the SP+ base unit.

Very Important Note: you need to ensure that the selector switch is set in position before connecting any voltage! If the switch is in 5VDC position and you connect the 12VDC it could have immediate catastrophic effect on the relay and possibly the base unit!

Connecting the MSCR

Using the wiring diagram examples below you will first connect the MSCR to the SP+ units RJ-45 sensor port using the CAT5 extension cable.

Then you will connect the wires to the connections as shown in the diagrams below depending on the third party relay type or device you are connecting to the MSCR. Normal CAT5/6 or other similar gauge wire can be used.

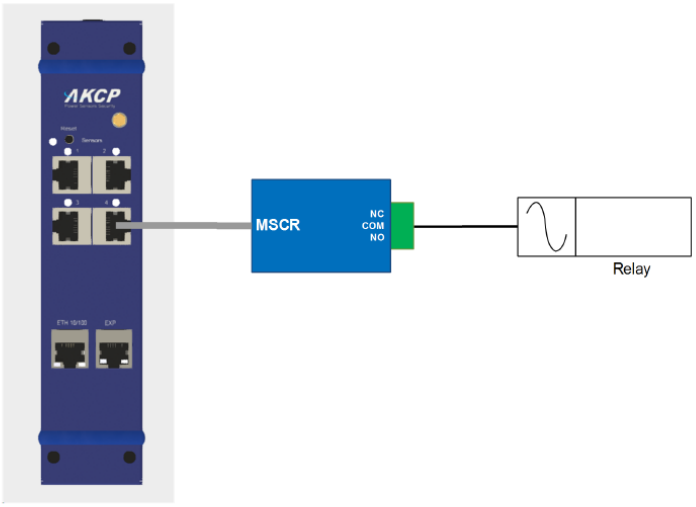
Output pin configurations for the Mini Sensor Controlled Relay (MSCR)

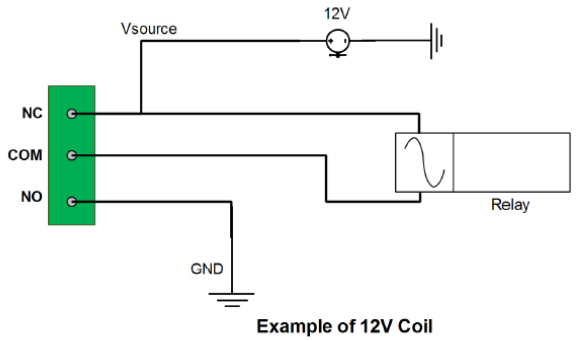
Sensor Type		Mini Sensor Controlled Relay	
Switch Position		**Left**	**Right**
LED ON		Relay ON (closed 2-3)	
Switch Functionality		External	5V/GND
3 PIN Connector	**1**	NC	5V
	2	COM	COM
	3	NO	GND

Important Note: you need to ensure that the selector switch is set in the correct position before connecting any voltage!

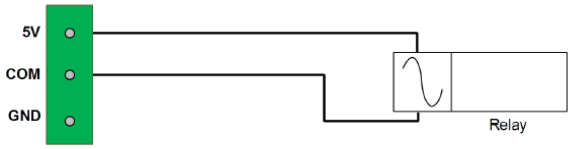
Wiring Diagrams

Examples of wiring diagrams to control a relay.

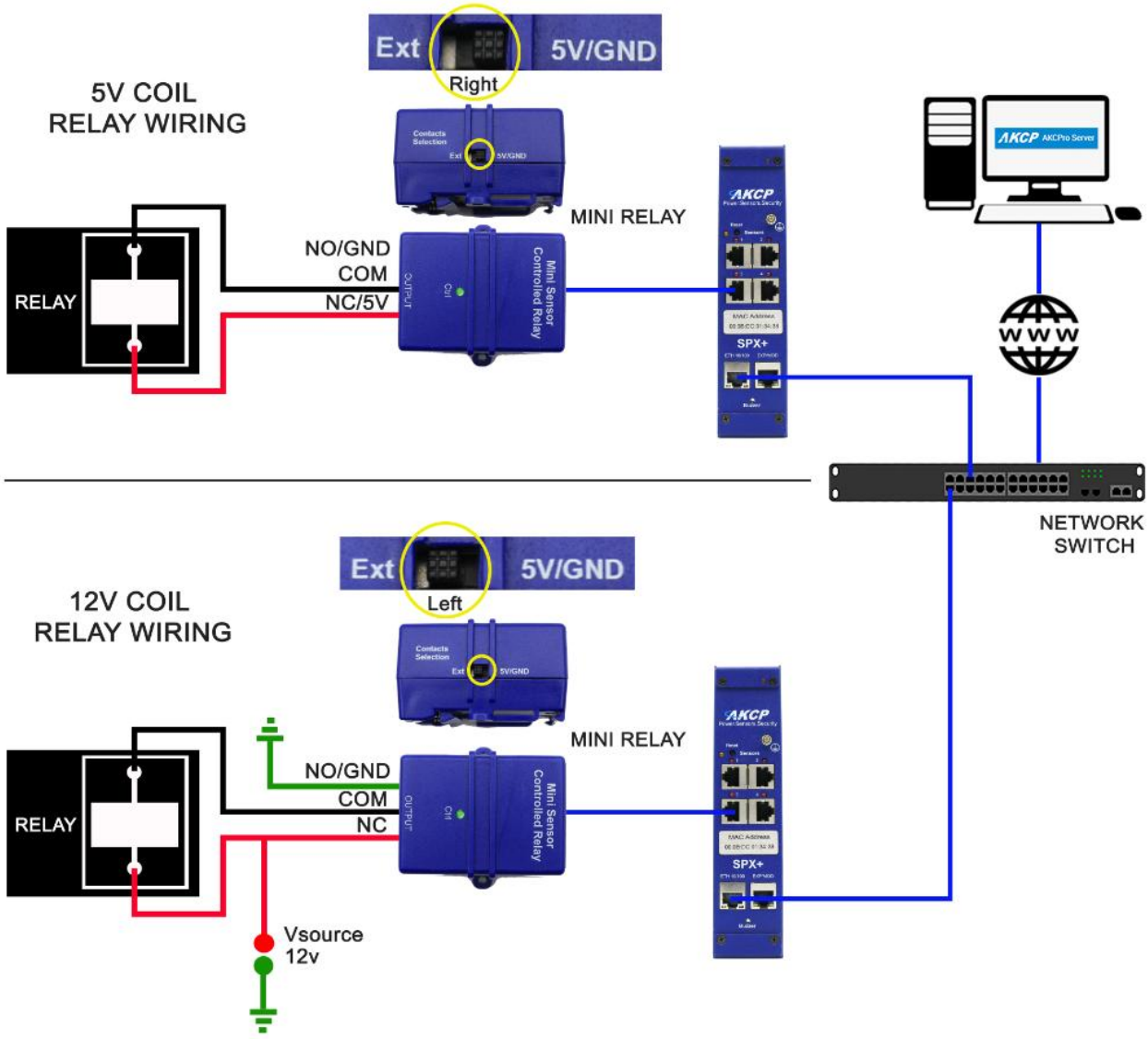




Example of 12V Coil Relay wiring



Example of 5V Coil Relay wiring (powered by SP+)



Additional Notes on Controlling Larger Relays & AC Units

Relay Types

AKCP does not have any recommendations for specific relay brands or relay types. There are plenty if you do some online searching, moreover, you will need to work directly with your end customer or technical team when choosing a relay that meets the requiremtns and is within our MSCR specifications.

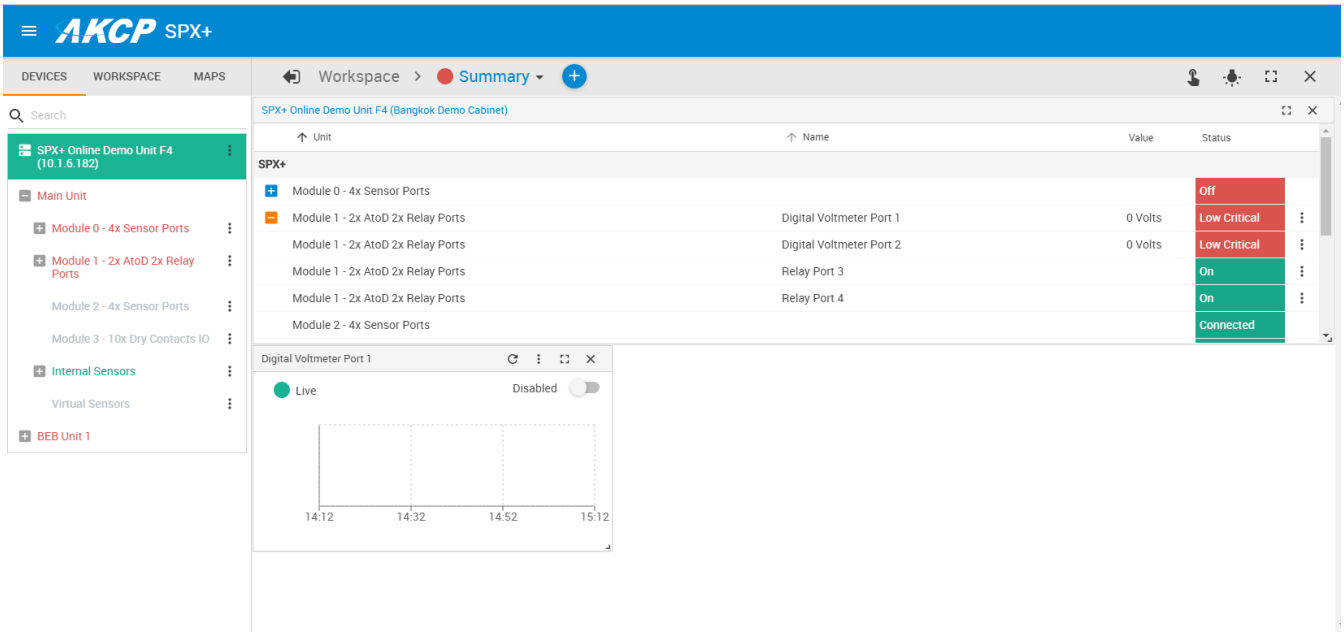
Controlling AC Units

In most cases you should not control split type (compressor & blower) AC or airconditioning units via a relay. Usually aircon systems have a control circuit, so you should always consult an HVAC specialist on their recommended method for controlling the aircon system you plan to interface to. For example, cutting the power to the compressor only could cause problems, or even damage the compressor.

Liability & Responsibilty

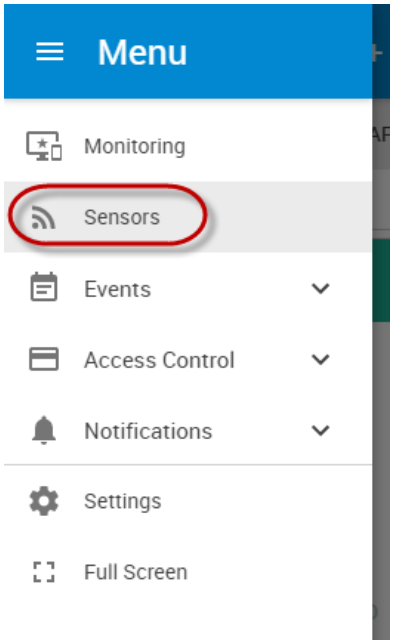
AKCP cannot be held resposible for any injury or damage caused by improper connections to third party (non AKCP) relays or equipment. It is the sole responsibility of our dealers, who are acting as system integrators, to manage integration and liase with the third party equipment providers.

Configuring the Mini Sensor Controlled Relay in the SP+ web UI (both SP2+ and SPX+)

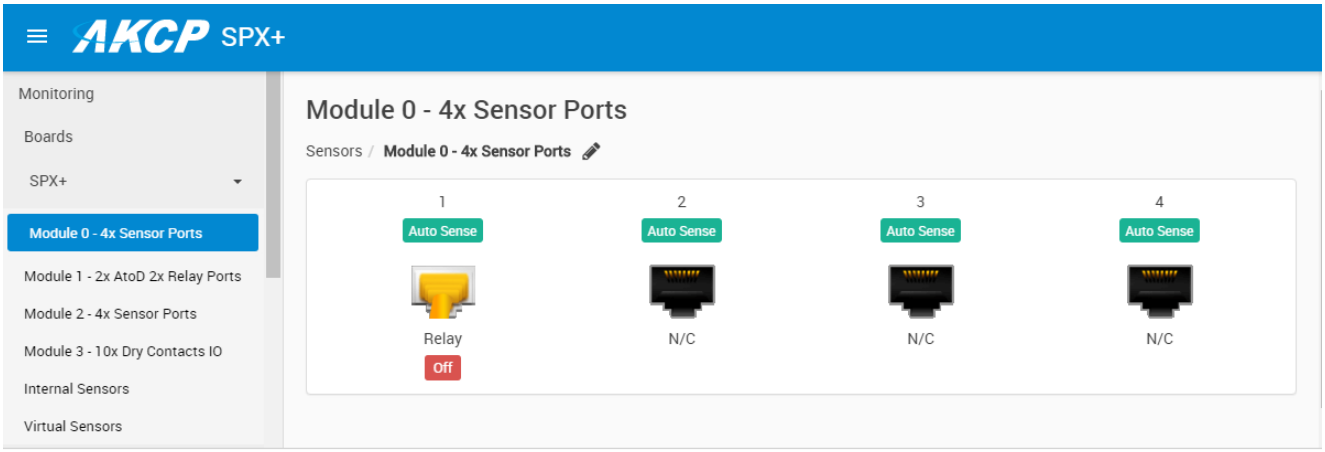


1. First log into the sensorProbe+ units web interface as the Admin as shown in the screen shot above.

Additional Note: for the details regarding logging into and setup details on the SP+ units, please always refer to the SP2+ and SPX+ manuals on our support website in the “All Manuals” section.

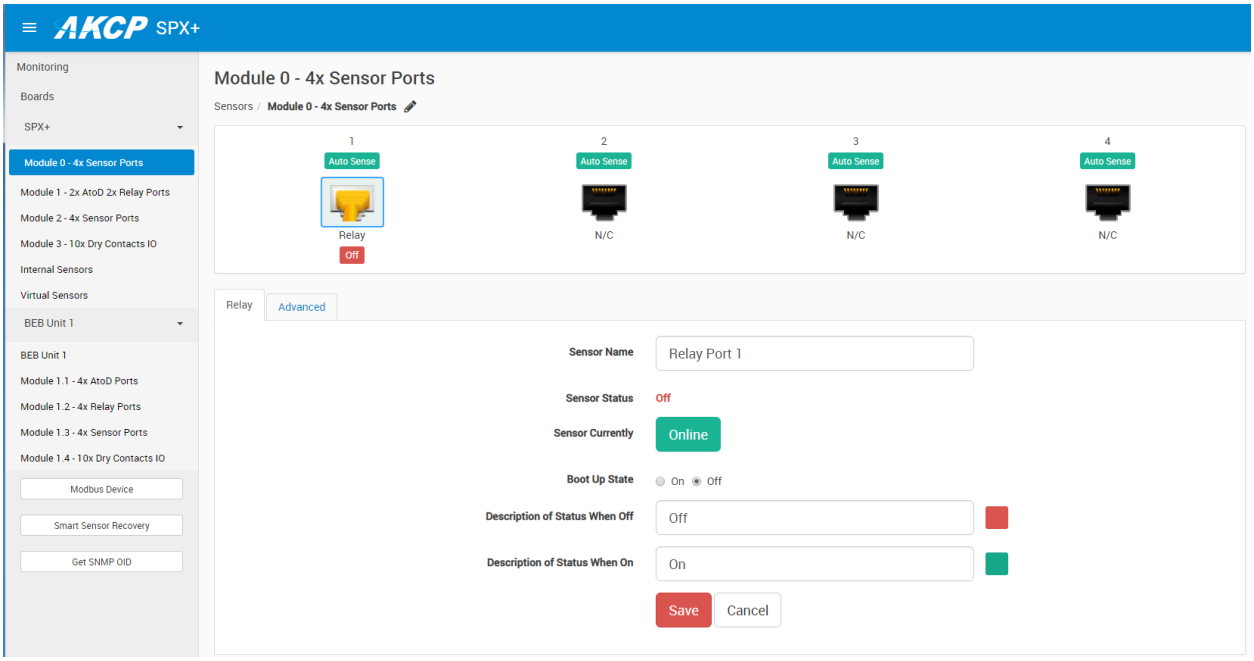


2. After logging into the SP+ units web user interface as the Admin, go to the main Menu and then click on the "Sensors" link as shown on the left.



3. Navigate to the sensor module that you have connected the MSCR to as shown in the screen shot above, then click on the sensor port that the sensor is connected to.

You will note the MSCR sensor status is OFF by default as again shown in the screen shot above.



4. After clicking on the sensor port that the MSCR is connected to, you will see the sensor setting details as shown in the screen shot above in the “Relay” tab page.

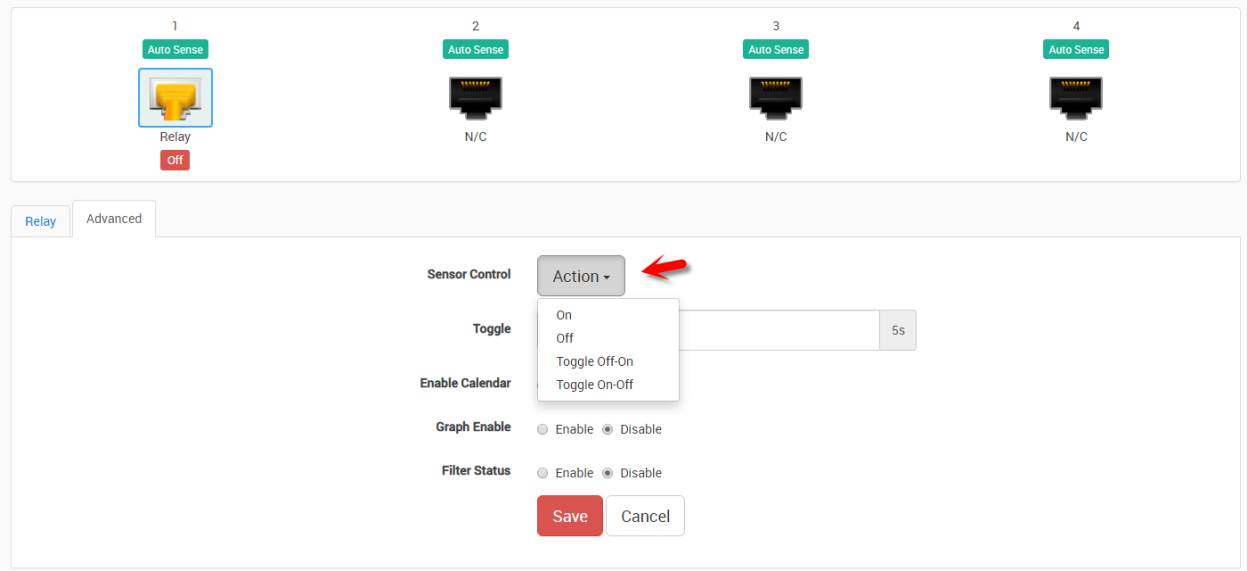
In this page you can edit the following sensor settings:

A. Rename the relay sensor name.
B. Take the sensor offline.
C. Change the boot up state the relay will be in when the base unit has been rebooted, or powered off and on.
D. Change the descriptions of the relay’s status when it is on and off.
E. Please remember to click on the “Save” button after making your changes.

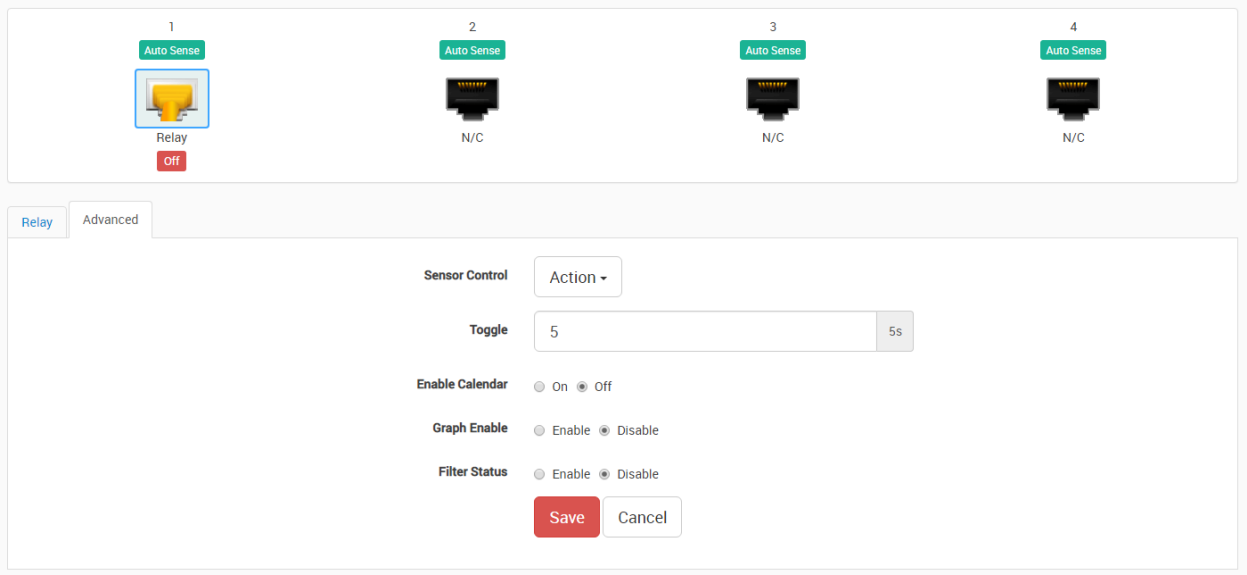
Additional Note: Please also always remember you can use the “Get SNMP OID” button on the SP+ units that will display all of the OID’s related to the sensors you have connected to the sensors ports.

This feature is very helpful if you plan to remotely monitor the sensors connected to the SP+ base units using third party NMS (Network Management Systems).

You can also download our latest MIB file and latest OID manual from these directly links below.
http://www.akcp.in.th/downloads/Manuals/AKCP%20OID/akcp.mib
http://www.akcp.in.th/downloads/Manuals/AKCP%20OID/AKCP%20SNMP%20OID%20Manual.pdf



5. Clicking on the “Advanced” tab, this page allows you to setup the sensors Action in which you require it to perform by clicking on the Action drop down menu. You can choose to turn the relay on or off, toggle it off then on, or toggle it on, then off.



6. Still in the “Advanced” page of the MSCR, you can choose how many seconds you require to toggle the relay. You can enable or disable the Calendar feature, enable or disable the Graphing and the Filter Status of the sensor.

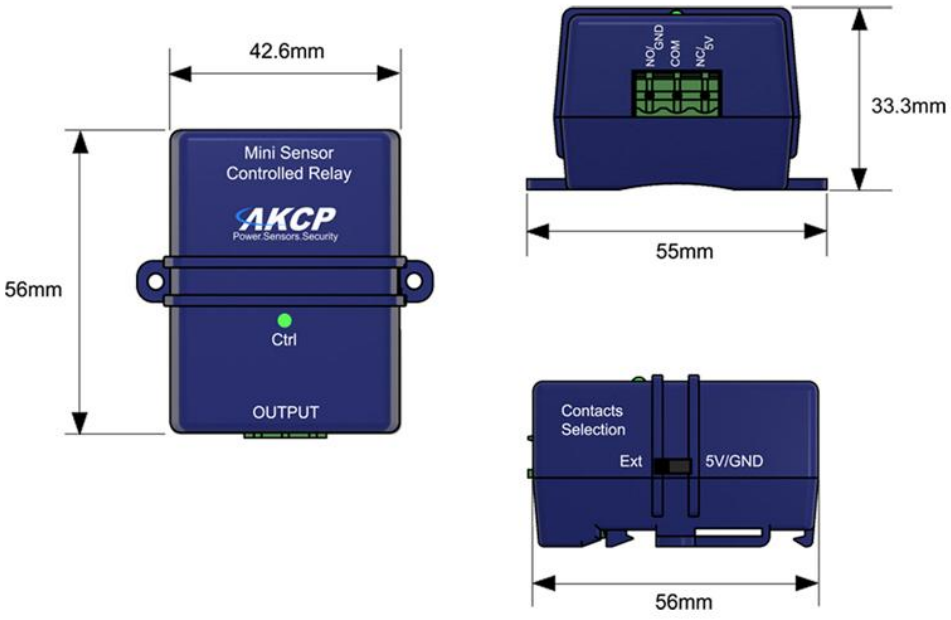
If you are not familiar with the calendar, graphing, or filter status features, please refer to the SP+ (SP2+ & SPX+) product manuals for more details on these features.

Additional Notes: This is the same exact setup on the SP+ web UI as the existing PRB00-DC (Sensor Controlled Relay DC) and also on the securityProbe base units. In other words this new MSCR is an extension or a hardware conversion unit for the PRB00-DC sensor. Please refer to the PRB00-DC manual & securityProbe manuals for these details.

Relay & Technical Specifications

Coil Consumption	150mW
Switching Power	120VA, 24W
Contact Material	AgNi Alloy
Min. Contact Load	1mA @ 1VDC
Initial Contact Resistance	50mΩ at 100mA, 6VDC
Contact Ratings	1A, 120 VAC / 24 VDC
Mechanical Endurance	10x10e6 operations
Electrical Endurance	1A, 120 VAC, resistive, 100x10e3 ops.
Electical Endurance	1A, 24 VDC, resistive, 100x10e3 ops

Dimensions



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

Thanks for Choosing AKCP!