

Airflow Sensor User Manual

Percentage & On / Off Type





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Introduction

There are two versions of AKCP Airflow sensors. A percentage type and an On and Off type. The percentage type was replaced by the On and Off type around August of 2011.

The percentage type, AKCP's first version of its Airflow sensor was a sensor that could measure the amount of airflow in a percentage and will be covered first in this manual. The second type, the On / Off type will be covered after.

Percentage Reading Type Airflow Sensor

The way the percentage type air flow sensor works is there are two thermistors, one internal and one external. A thermistor changes resistance based on air temperature. The internal thermistor is the reference point and the external thermistor changes when the airflow is blown across the top of the sensor, the difference is this raw output reading. Then the raw output reading is calculated into the percentage of airflow.

The calculations are as follows; rawAnalog 550 = 1.375 Volt = 100%rawAnalog 150 = 0.375 Volt = 0%

The sensor will be much more accurate if it is positioned so the air flows across the top of the sensor and <u>this is not a precision sensor</u>. It is basically designed to sense the presence and non-presence of airflow.

The airflow sensor is really designed to sense the presence of air, not to measure the amount of airflow. The best application is to place it near the air source but if you want a reading of less than 100% then you need to place it further away but again it is not designed to be an anemometer. It is best used to send an alert in the case of a fan, or in your case, AC failure.

If you need a more precision sensor then these are much more expensive but can be integrated into the AKCP base units. Please contact support for more information.

The Airflow Sensor is a device that registers airflow in areas where consistent flow is needed; for example, in cabinets and racks where the consistent operation of a fan is critical to the operational safety of electronic equipment.

The Airflow sensor is placed in the air stream, where the user can monitor the status and the amount of flowing air. In addition to an on/off indication, it also graphs the analog values over a period of time. Although this is not a precision airspeed measurement device, it can be used, for example, to indicate if a fan slows down the user will be given an indication of the change over time. This may happen if the fan is close to failure or the air filter is clogged.

The recognized OID for the air flow sensor on RJ45#1 is .1.3.6.1.4.1.3854.1.2.2.1.17.1.3.0

Features:

- On/Off alarm signal of airflow
- Airflow data graphically displayed over time
- Accurate, cost effective flow sensing
- 2 LEDs indicate the status of Airflow and that the sensor is securely plugged into the unit
- Electronics are mounted in a small plastic case



- Power source: powered by the unit. No additional power needed.
- The unit auto detects the presence of the airflow sensor .
- Full Autosense including disconnect alarm

Specifications:

- Data graphically displayed via a web page
- o Data collection possible via any SNMP based network management system
- o Measurement rate: one reading each second, data logging once per minute
- Communication cable: RJ-45 jack to the unit
- Sensor type: Thermistor
- Trap information: Status, Sensor number, Sensor description, Airflow (%) (ONLY on the older type airflow sensor)
- Maximum CAT5/6 Cable Extension Run Length: 60 meters or 200 feet.

Configuring the airflow sensor

a) Plug the sensor into one of the RJ45 ports on the rear panel of the unit.

b) Now point your browser to the IP address of the unit (default, 192.168.0.100). Next you need to login as the administrator using your administrator password (default is "public"). You will then be taken to the summary page.

c) From the summary page you need to select the sensors tab. The layout of the next page will vary depending on your unit so please refer to your units manual.

Now we will cover the settings that are specific to your sensor.

Current Reading: The percentage of airflow is displayed in this field. This is a read-only field. It is an integer SNMP OID field. This value can be polled via SNMP and the data can be used to graph the air-flow. The values range is from 0 to 100 %.

Status: If the sensor is offline, the status shows "No Status". If the sensor is online, the status will be formed by comparing the readings to the low thresholds. If at any time communications with the Airflow Sensor are lost, the status of the Airflow Sensor is changed to "sensorError".

Can I extend the airflow sensor, if yes, how do I do that and how far can I extend it?

Yes, you can extend the airflow sensor using standard CAT5 LAN cable. The total run length of this sensor is 30 meters or roughly 98 feet.

On / Off Type Airflow Sensor

AKCP is only shipping the On / Off type of Airflow sensor.



Configuring the airflow sensor on your sensorProbe unit

a) Plug the sensor into one of the RJ45 ports on the rear panel of the unit.

b) Now point your browser to the IP address of the unit (default, 192.168.0.100). Next you need to login as the administrator using your administrator password (default is "public"). You will then be taken to the summary page.

c) From the summary page you need to select the sensors tab. The layout of the next page will vary depending on your unit so please refer to your units manual.

Now we will cover the settings that are specific to your sensor.

sensorProbe Base Units

Summary	Sensors	Traps	Mail	Network	System
			Sensor Setting	IS	
Environmental			Pleases	select an Airflow Sensor to configu	Ire
Temperature			Sensor D	escription	
Humidity				Description	
Liquid Detector			<u>Airflow2</u>	Description	
(Airflow Sensor)					
Contacts & Drivers					
Dry Contacts & Drivers					
4-20 mAmp					
Dry Contacts (3 - 12)					
Power					
AC Voltage Detector					
DC Voltage Sensor					
Relay					
Security Sensor					
Security					
Motion Detector					
Alarm Security					

After connecting the sensor it will be auto sensed as the Airflow Sensor. After clicking on the Sensors tab you would then click on the sensor settings link as shown in the screen shot above.

s	Traps		Mail	Network	System
		Ser	nsor Settings		
			Airflow (A	irflow1 Description) on Port 1	
Settings	Calibrate Relay Control	Siren Control	Status Filter		
			Dest		
			Port		
			Description	Airflow1 Description	
			Status	Critical	
		Sei	nsor Online/Offline	Online	
			Go Online/Offline	Online 💌	
			Rearm	2	
			Sensitivity	80 (0-100)	
			Normal State	Presence 💌	
				Save Reset	

In the settings tab you first make sure the sensor is online, and then you can re-name your Airflow sensor, adjust the rearm and sensitivity settings and change the Normal State.



You can change the Normal state to be in the normal state when the airflow is present or not present. This is quite convenient in the event you required to be alerted if airflow was moving in a direction that was not desired for example an air sealed clean lab where air flow should only be flowing out of the room and not in.

rs	Traps		Mail		Network	System
		Se	nsor Settings			
			Airflow (Airfl	low1 Des	cription) on Port 1	
Settings	Calibrate Relay Control	Siren Control	Status Filter			
			How to Cali	ibrate:		ronment to match the selected "Air State" below on or off your air conditioner) ate Now" button
			Air	State	At 0% 👻	
				Calibrate	Now	

After clicking on Calibrate tab, you are able to calibrate the airflow sensor. The airflow sensor should be calibrated only if the sensor does not seem to be detecting airflow properly.

To calibrate the sensor follow the instructions on the screen and click on the calibrate b utton as shown in the screen shot above.

		Airflow (Airflow1 De	escription) on Port 1
Settings	Calibrate Relay Control	Siren Control Status Filter	
		How to Calibrate:	 Select Air State Change your environment to match (For example; turn on or off your air Wait 2 minutes Press the "Calibrate Now" button
	The Airflow is set for 0% Be sure there are no air Press the "OK" to run ca	r flow to the sensor and it has been running in	this state for 2 minutes.
			Cancel

After clicking on the Calibrate button, a reminder will be displayed as shown above, then you would click the OK button to begin the calibration of the airflow sensor.

For the Relay Control and Siren Control please see the Dry Contact, Sensor Controlled Relay or the Siren / Strobe user manuals for information on these options.



Settings Calibrate Relay Control	Siren Control		rflow1 Description) on Port 1
Send Trap / Send Mail / Send Tra Send Tr Send Em Continuous time sensor is in a nor Continuous time sensor is in a warning/e	Alert For This Sen Alert For This Sen ap when Status "I ail when Status "I mal state to repoi	sor Port Yes sor Port Yes Normal" Yes Normal" Yes rt (secs) 0 t (secs) 0	
	Day of we	,	
	NO ALERT	DAY	TIME
		Mon Tue	00:00 - 00:00
			00:00 - 00:00
		Wed	00:00 - 00:00
		Thu	00:00 - 00:00
		Fri	00:00 - 00:00
		Sat	00:00 - 00:00
		Sun	00:00 - 00:00
			Save Reset

Clicking on the Status Filters tab we can see now that you can enable or disable the email and traps for this, enable or disable the email or trap when the status returns to a Normal State and also set the Continuous Time settings to elimate false warnings, set the Minimum time between each Email or Trap and also set the Day and Time filter as shown in the screen shot above.

securityProbe Base Units

This page shows the sensor ports and their respective status and state.	Summary		Мар	Sensors	Noti	fication	Access Control	Setting	s	Арр	lications	Help
Sensor Ports Host Name Main Module Expansion Boards Save Reset © Power Meter Image: Save Reset Virtual Sensors Auto Sense Auto Sense Auto Sense Auto Sense This page shows the sensor ports and their respective status and state. Image: Status Image: Save							Sensor Settin	gs				
Sensor Ports r Expansion Boards Save Reset Save Power Meter Virtual Sensors Itelp 1 2 3 4 5 6 7 This page shows the sensor ports and their respective status and state. Auto Sense Itelp 0	Sensors Menu						Host Namo Main	Modulo				
Power Meter Virtual Sensors Inis page shows the sensor ports and their respective status and state. Click on a port o display or configure its settings.	Sensor Ports						HOST Name jinam	module				
Virtual Sensors Help 1 2 3 4 5 6 7 7 This page shows the sensor ports and their respective status and state. Auto Sense Interview	Expansion Boards						Save	set				
Help 1 2 3 4 5 6 7 7 This page shows the sensor ports and heir respective status and state. Auto Sense Auto Sense </td <td>Power Meter</td> <td></td>	Power Meter											
This page shows the sensor ports and their respective status and state. Click on a port to display or configure its settings.	Virtual Sensors							\frown				
Status and their respective status and state. Click on a port to display or configure its settings.	Help			1	2	3	4	5		6	7	8
N/C N/C N/C Dual Sensors Airflow Dry contact I/O N/C Dual S	and their respective status state. Click on a port to display of	s and	Status					•	, T			Auto Sense

After connecting the sensor to the RJ-45 sensor port and logging into the unit as the Admin and navigating to the Sensors page the airflow sensor will be auto sensed and displayed as shown in the screen shot above.



Airflow Sensor User Manual

Sensors	Noti	fication	Access Control	Setting	s	Applications	
			Sensor Setti	ngs			
1	2	3	4	5	6		
Auto Sense	Auto Sense	Auto Sense	Auto Sense	Auto Sense	Auto Sense	Auto	
•	•			•		•	
					$\boxed{}$		
N/C	N/C	N/C	Dual Sensors	Airflow	Dry contact I/O	N	
	Normal Settings Advanced Settings Continuous Time Settings Minimum Time Settings Sensor Name Airflow Port 5 Status Normal Sensor Currently Online Description of Status When Normal Normal Description of Status When Critical High Critical Normal State Presence @ Absence Sensitivity 80 (0-100) Save Reset Calibrate						

After clicking on the Airflow sensor the Normal Settings will be displayed where you are able to then rename the sensor, rename the Status and change the Normal State to the Presence or Absence of airflow.

The sensitivity can be set to a specific number in the event the airflow is a lot or very low.

To calibrate the Airflow Sensor, click in the Calibrate button as shown above.

After clicking on Calibrate button, you are able to calibrate the airflow sensor. The airflow sensor should be calibrated only if the sensor does not seem to be detecting airflow properly.

P N/C	Dual Sensors	Airflow	Airflow Sensor User	Manua
			selected "Air State" b	elow
Air State	At 0%		anoner)	
(Calibrate Now	Cancel		

To calibrate the sensor follow the instructions on the screen and click on the calibrate button as shown in the screen shot above.

The Airflow is set for 0% state calibration. Be sure there are no air flow to the sensor and it has been running in this state for 2 minutes. Press the "OK" to run calibration now.
OK Cancel 1. Select Air State 2. Change your environment to match the selector (For example; turn on or off your air conditioner 3. Wait 2 minutes 4. Press the "Calibrate Now" button
5. Done Air State At 0% 💌 Calibrate Now Cancel

After clicking on the Calibrate button, a reminder will be displayed as shown above, then you would click the OK button to begin the calibration of the airflow sensor.



This concludes the Time Tracking feature user manual.

Please contact <u>support@akcp.com</u> if you have any further technical questions or problems setting up your modem or your alerts.

Thanks for Choosing AKCess Pro!