

## ZPS-H (Zone Presence Sensor for Fume Hood Applications)

 **Please read this entire document to familiarize yourself with the installation and wiring instructions for the ZPS-H Hood Presence Sensor. For additional details, refer to the individual product Submittal Drawings, User Manuals and Job-Specific Requirements.**

## APPLICATION

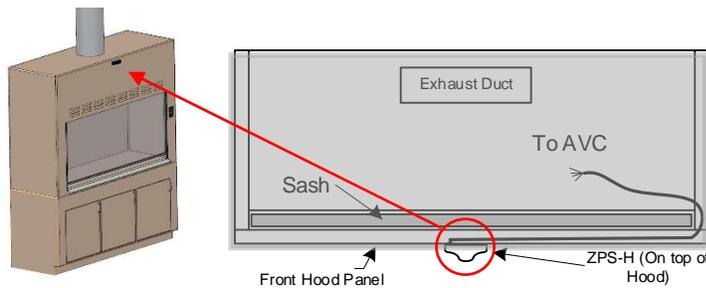
The ZPS-H Zone Presence Sensor is an optional sensor used with the AVC Fume Hood Control System, which will cause the Fume Hood Monitor to revert to the Setback mode when no one is standing in front of the hood thus reducing the exhaust requirements. Upon the return of the occupant to the front of the hood, the ZPS-H will immediately signal the AVC Fume Hood Control System to return to the normal working velocity set point.

## STEP 1: INSTALLATION

 **CAUTION:** Wear eye protection, cut resistant gloves and clothing suitable for working with sheet metal. Failure to do so may result in personal injury.

### 1a. Location

Select a flat surface on the front of the fume hood above the operator. Verify there is enough clearance behind the panel to accommodate the two mounting screws and the cable. If the location is suitable, adhere the mounting template to the surface.

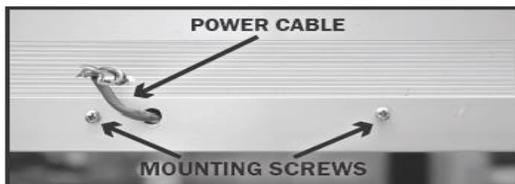


Pictured is the top-down view of the hood showing ZPS-H cable routing. Be sure the sash and any of its moving parts do not interfere with the Zone Presence Sensor Cable.

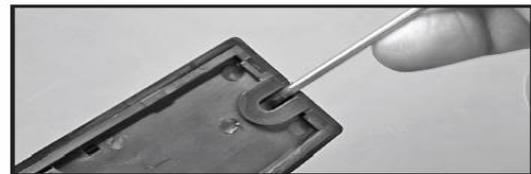
### 1b. Prepare the Area

Using the mounting template as a guide, drill two holes for the mounting screws and one hole for the cable.

 **CAUTION:** Be sure to deburr the cable hole prior to inserting cable through the hole to prevent cable damage. Insert the provided cable through the hole from the front of the hood so that the terminal block is on the front of the panel. Insert mounting screws provided with kit partially, leaving space under the screw heads to slip the sensors slotted holes under.



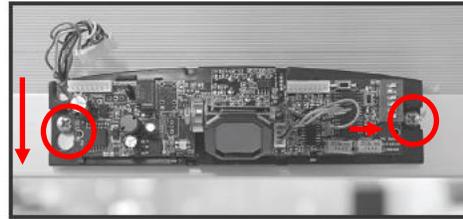
Power Cable and partially installed Screws



Insert Screwdriver and Pry Upwards to Remove Cover

### 1c. Mounting

Install the circuit board under the screw heads shown below. Carefully hand tighten the screws in the position shown.



Slotted holes  
fit over screws

ZPS mounted without cover, Cable Connected

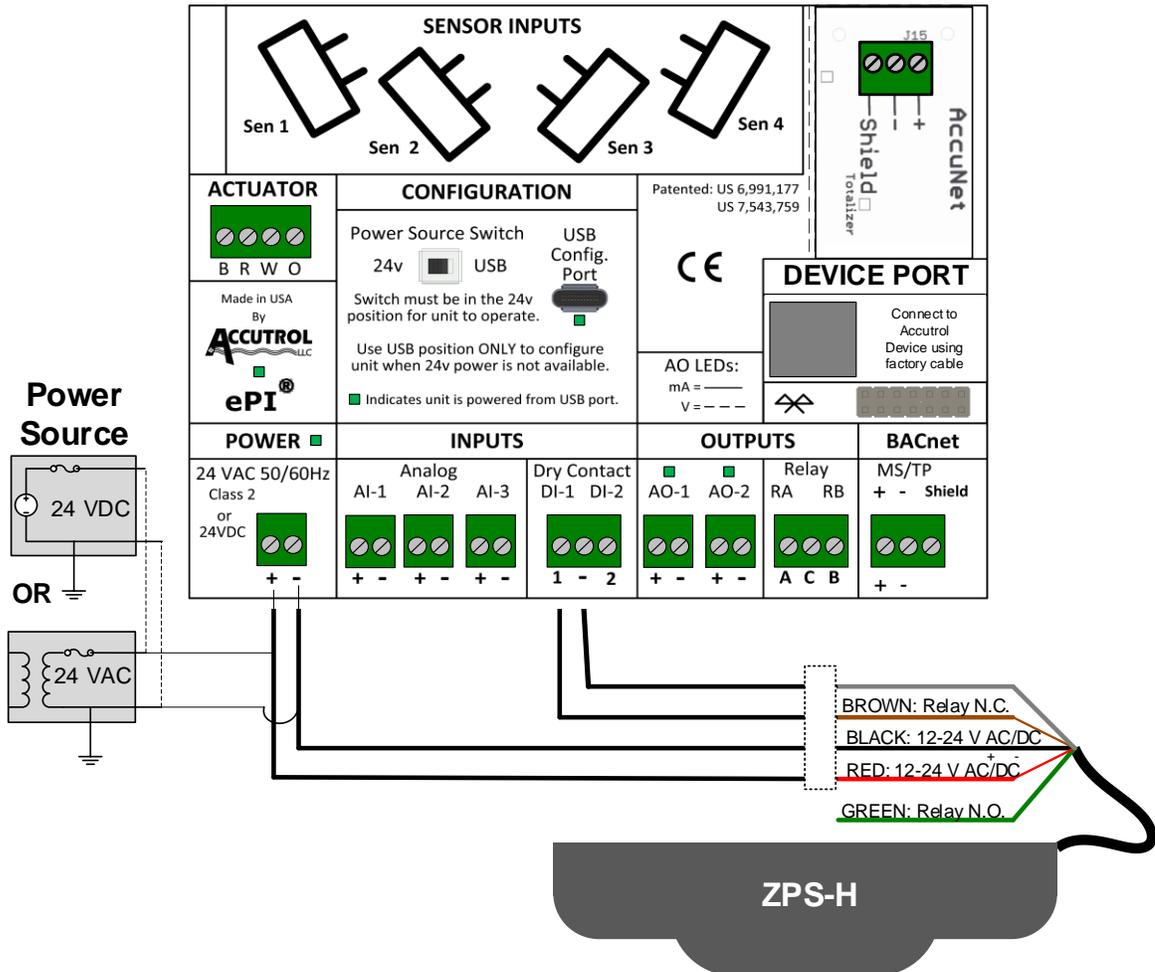
### 1d. Wiring

Connect the cable terminal block to the pins in the upper left corner of the ZPS-H sensor board and pull any extra cable through the hole. Route the cable to avoid moving hood sash components.

Reference the wiring diagram pictured below

Connect the red and black wire from the ZPS-H to the power supply shared with the AVC controller.

Connect the brown and white wires from the ZPS-H to the AVC at DI-1.

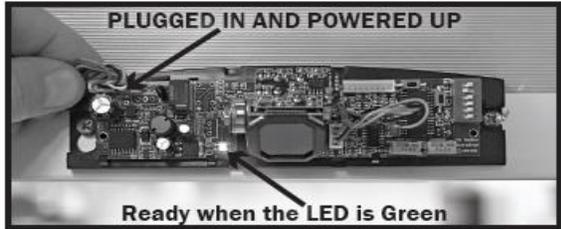


WIRING TABLE	
ZPS-H	AVC
RED	24V (+)
BLACK	24V (Gnd)
BROWN	DI-1 (1)
WHITE	DI (Gnd)
GREEN	No Connection

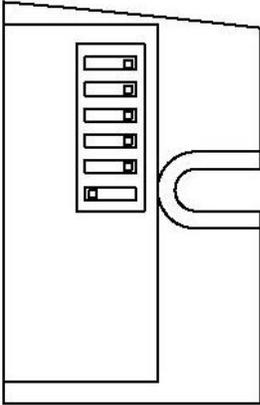
**STEP 2: START UP**

**2a. Power up**

Apply Power to unit and wait for LEDs to illuminate.



LED lights solid (Green = no detection, Red = detection)



SW #	SWITCH POSITION DESCRIPTIONS	
	LEFT	RIGHT
6	NOT USED	NOT USED
5	FAILSAFE OFF	FAILSAFE ON
4	HPR OFF	HPR ON
3	NOT USED	NOT USED
2	DEPART	APPROACH
1	BI-DIRECTION	UNI-DIRECTION

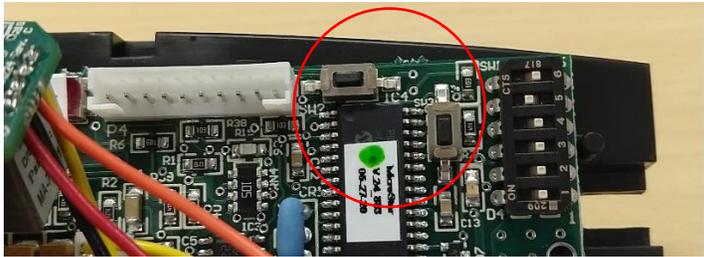
**2b. Adjustment of Switch Positions**

Verify all switch positions are set to factory default as shown to the right.

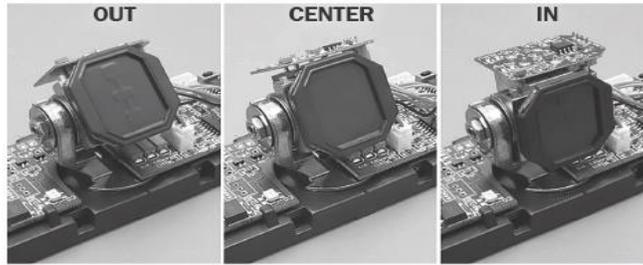
Note: Factory Default Switch Positions are Highlighted grey.

**2c. Adjustment with Cover Off**

To quickly adjust pattern, press and release the **Reset Button on the Right below** and then press and hold the **Install Button on the Left below** 3 seconds (the LED will flash orange to confirm). This puts the ZPS-H into an install mode that is constantly sensing, but not driving the signal to the AVC. Test unit by walking in and out of the area in front of the hood, watch the LED and it will turn RED when it senses a person.



The sensor should be activated regardless if the person walks towards or away from it. If the unit does not sense presence appropriately, tip the sensor head in or out until it does. Walk in and out of the area several times to test.



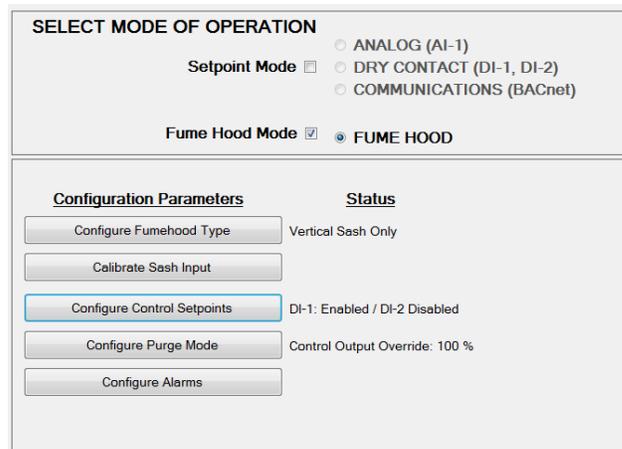
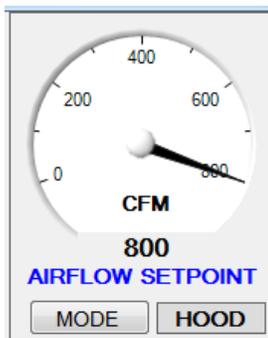
## 2d. Sensitivity Adjustment

If you need to increase the sensitivity of the ZPS-H, turn the pot on the right marked “range” clockwise. When you are satisfied with the sensitivity of the unit, depress the **Reset Button** again and the ZPS-H will go into Normal Operating mode.

## 2e. Adjusting the Set Points and Delays using *Insight*

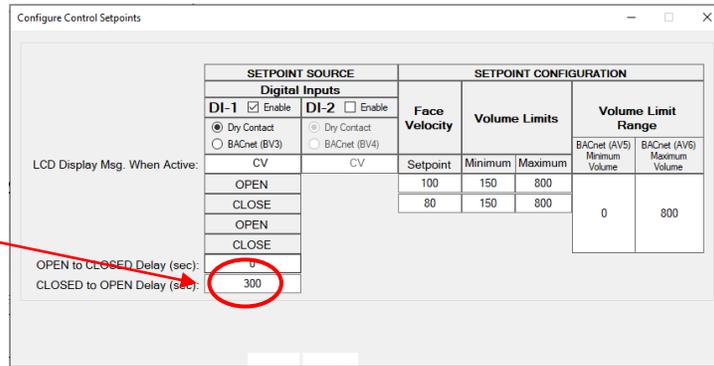
After the controller is tuned and operating at normal velocity set point, the technician should configure DI#1 as Normally Closed, and set the delay period so the AVC as a fume hood controller switches set points safely according to the customer’s requirements.

These adjustments are made in the *Insight* software by pressing the MODE button in the AIRFLOW SETPOINT window as shown below.



When the next Window comes up select Configure Control Setpoints

**CAUTION:** Be sure to have a sufficient time delay to prevent the valve from entering unoccupied mode while the hood is in use.



In the Configure Control Setpoint window, Select Enable next to DI-1 and a drop-down table will appear. This is where you select which velocity setpoints are used for each position of Digital Input #1. Since we are only using DI #1, there are only two conditions to be concerned about, open and closed.

In the instructions on the previous page, we have wired to the Normally Closed contacts of the ZPS-H using the Brown and White wires which are “closed” when there is not a person in the area. For the “open” position of DI#1 we have selected 100 fpm as our velocity setpoint, and 150 to 800 cfm as being our minimum and maximum volume limits.

When there is a person in the area, the contacts on the ZPS-H will open. The setpoints need to be configured to the higher of the two velocity setpoints, and we have chosen 100 fpm as our normal velocity setpoint, with 150 to 800 cfm being our minimum and maximum volume limits. (Please adjust these values to suit the requirements of your project site.)

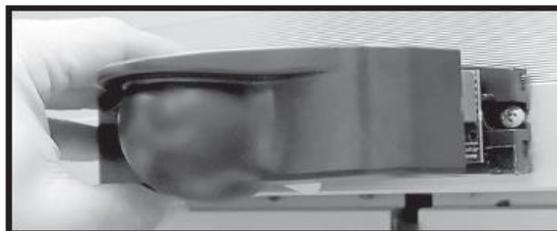
Note the 300 second out delay prevents the Fume Hood Controller from changing its face velocity setpoint to 80 fpm until five minutes after the ZPS-H detects no movement.

## 2f. Verification

Once the ZPS-H is set up, verify that the Digital Input of the AVC is configured to trigger the setback to lower flow and test entire system by walking in front of the hood to verify that the hood responds appropriately. Repeat walking test to verify proper operation. (You may have to stand out of the area in front of the hood to give time for the AVC Fume Hood Controller to revert to the Setback of the reduced velocity setpoint.)

When you are satisfied with the operation of the sensor, replace cover by engaging the cover on left side first then snap down. Be careful not to change the position of the swivel sensor and move the sensor wires out of the way so they are not pinched. The cover will not change the sensitivity of the ZPS-H.

## Replacing the Cover



For additional technical support please call Accutrol at 203-445-9991.