Quick Start Guide

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

Note: 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.
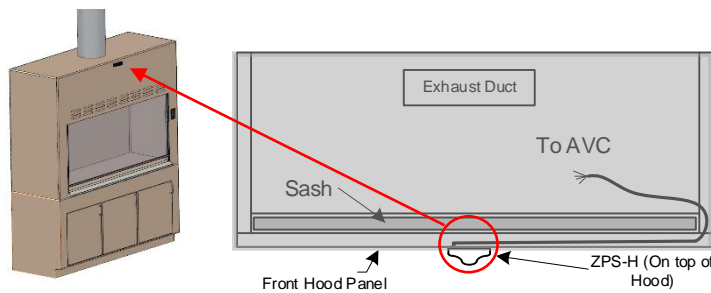
OVERVIEW

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.
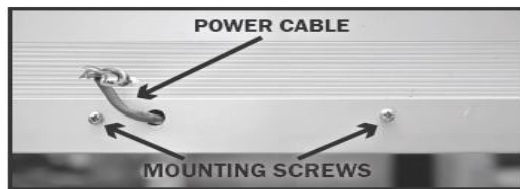

Pictured is the top-down view of the hood showing ZPS-H cable routing. Be sure the sash and any of its moving parts do not interfere with the Zone Presence Sensor Cable.
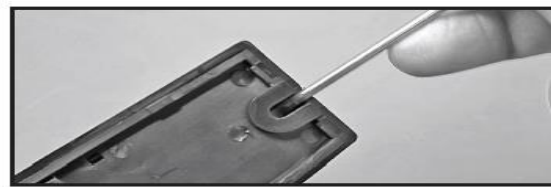
1b. Prepare the Area

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.
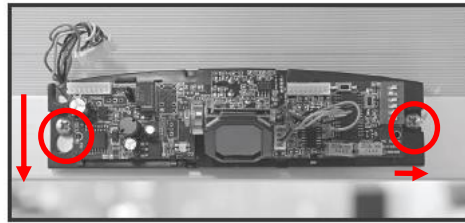

Power Cable and partially installed Screw

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.

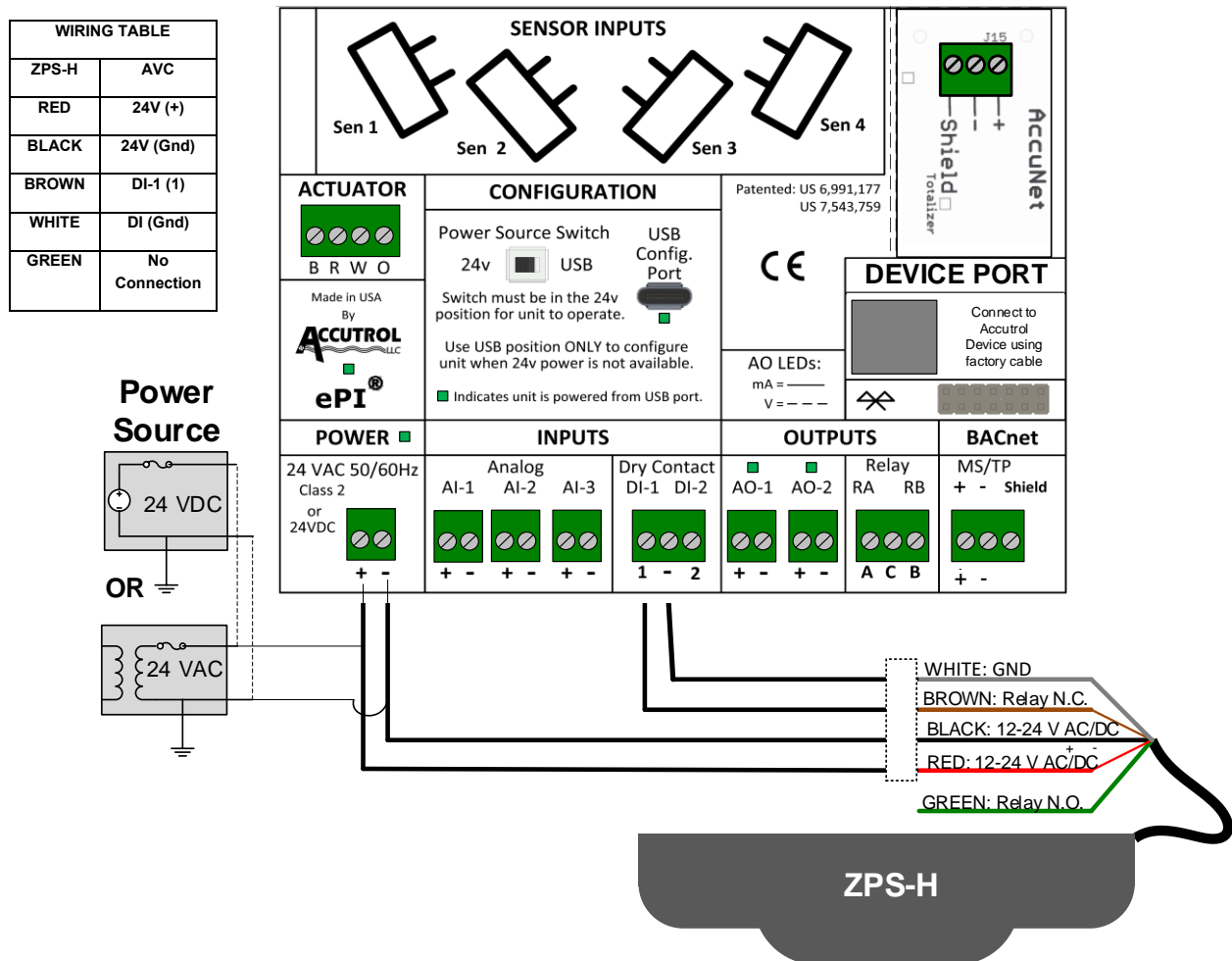Slotted holes fit over screws

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

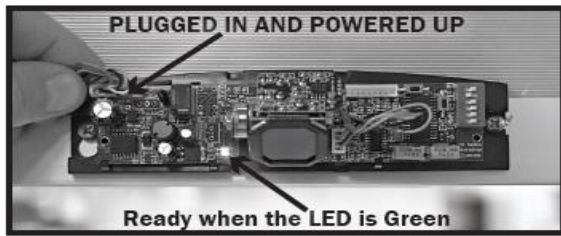Connect the red and black wire from the ZPS-H to the power supply shared with the AVC controller.

Connect the brown and white wires from the ZPS-H to the AVC at DI-1.
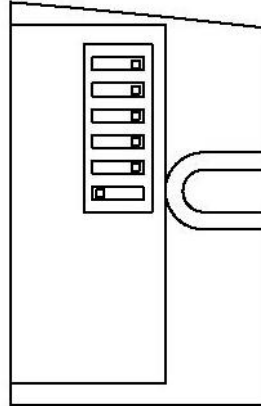
WIRING TABLE	
ZPS-H	AVC
RED	24V (+)
BLACK	24V (Gnd)
BROWN	DI-1 (1)
WHITE	DI (Gnd)
GREEN	No Connection

STEP 2: START UP

2a. Power up

Apply Power to unit and wait for LEDs to illuminate.

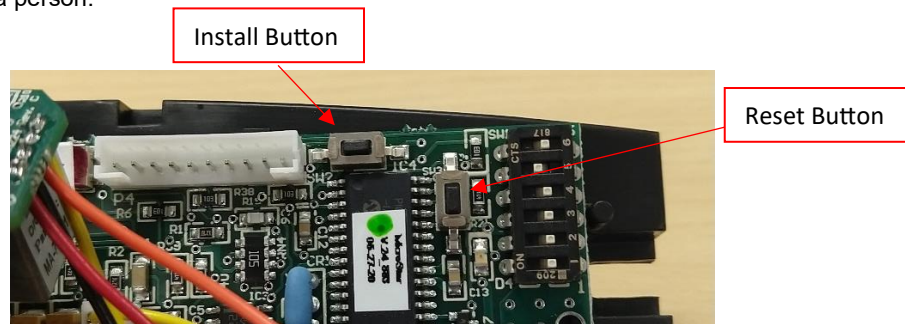LED lights solid (Green = no detection, Red = detection)

2b. Adjustment of Switch Positions

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

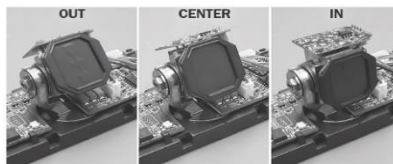📝*Note: Factory Default Switch Positions are Highlighted grey.*

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

2c. Adjustment with Cover Off

To quickly adjust pattern, press and release the Reset Button and then press and hold the Install Button for 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.
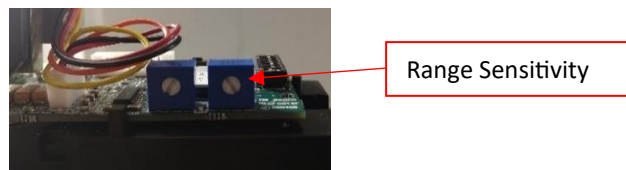

The sensor should be activated regardless if the person walks towards or away from it. If the unit does not sense presence appropriately, tip the sensor head in or out until it does. Walk in and out of the area several times to test.

2d. Sensitivity Adjustment

If you need to increase the sensitivity of the ZPS-H, adjust the knob 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 on the Airflow Setpoint gauge and then select "Configure Control Setpoints" as shown below.

⚠️*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.

Based on the wiring instructions provided in the previous section, the ZPS-H contacts will be closed when presence is not detected in front of the fumehood and open when presence is detected. For this example, the Face Velocity Setpoints will change from 100 FPM to 80FPM when presence is no longer detected at the fume hood.

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.