Quick Start Guide

ZPS-F (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-F Hood Presence Sensor. For additional details, refer to the individual product Submittal Drawings, User Manuals and Job-Specific Requirements.

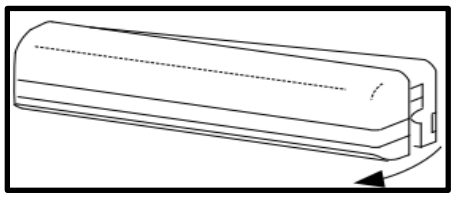
OVERVIEW

The ZPS-F Zone Presence Sensor is an optional accessory for the AVC Fume Hood Control System. When no occupant is detected in front of the hood, the sensor signals the Fume Hood Controller to switch to Setback mode, thereby reducing exhaust demand. Once an occupant returns, the ZPS-F immediately triggers the system to restore the normal working velocity setpoint.

STEP 1: INSTALLATION

1a. Remove the cover

Remove the cover of the ZPS-F unit and locate the 2 mounting screws stored in the unit.

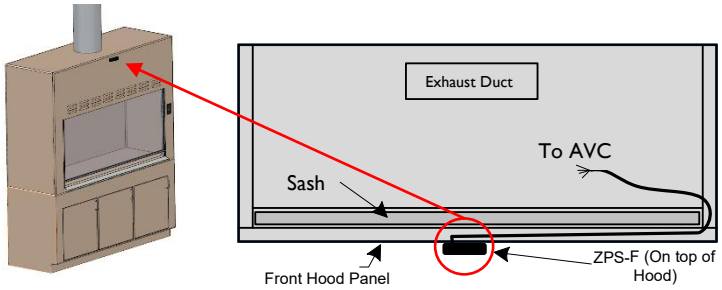


Remove the cover from the unit

Locate the 2 mounting screws

1b. Select 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.



Mounting Location

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

Note: If your sensor is not mounted at a height between 9.8ft and 11.5ft adjustment to the settings are required (Refer to Appendix A: Mounting Height Adjustment).

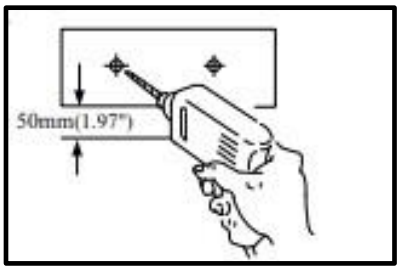
1c. Prepare the Area

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

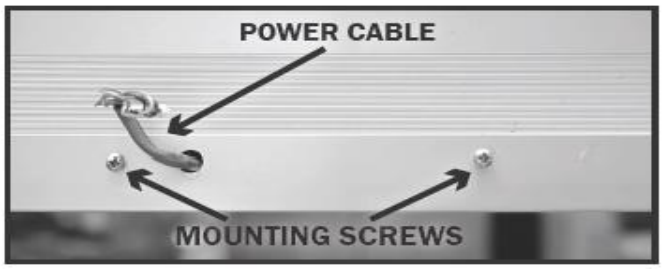
Using the mounting template as a guide, drill two holes for the mounting screws and one hole for the cable. Be sure to deburr the cable hole prior to inserting cable through the hole to prevent cable damage.

Insert the provided cable through the hole from the front of the hood so that the connector is on the front of the panel. Pull any extra cable through the hole. Route the cable to avoid moving hood sash components.

Install the mounting screws, leaving enough space beneath the screw heads to slide the sensor's slotted holes underneath.



Drill holes using Template



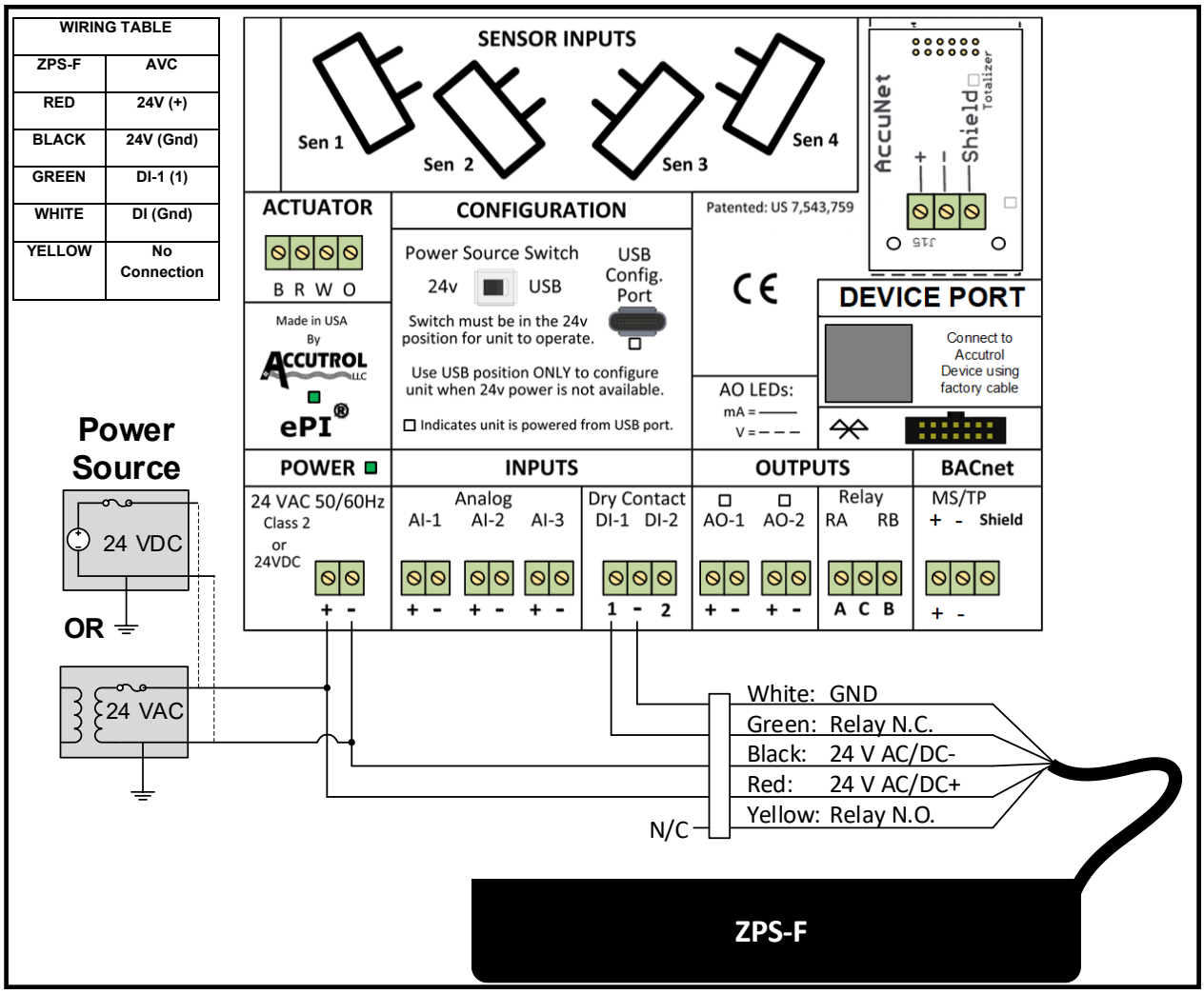
Power Cable and partially installed Screws

1d. Wiring

Connect the Red and Black wires from the ZPS-F to the power supply shared with the AVC controller.

Connect the Green and White wires from the ZPS-F to the AVC at DI-1.

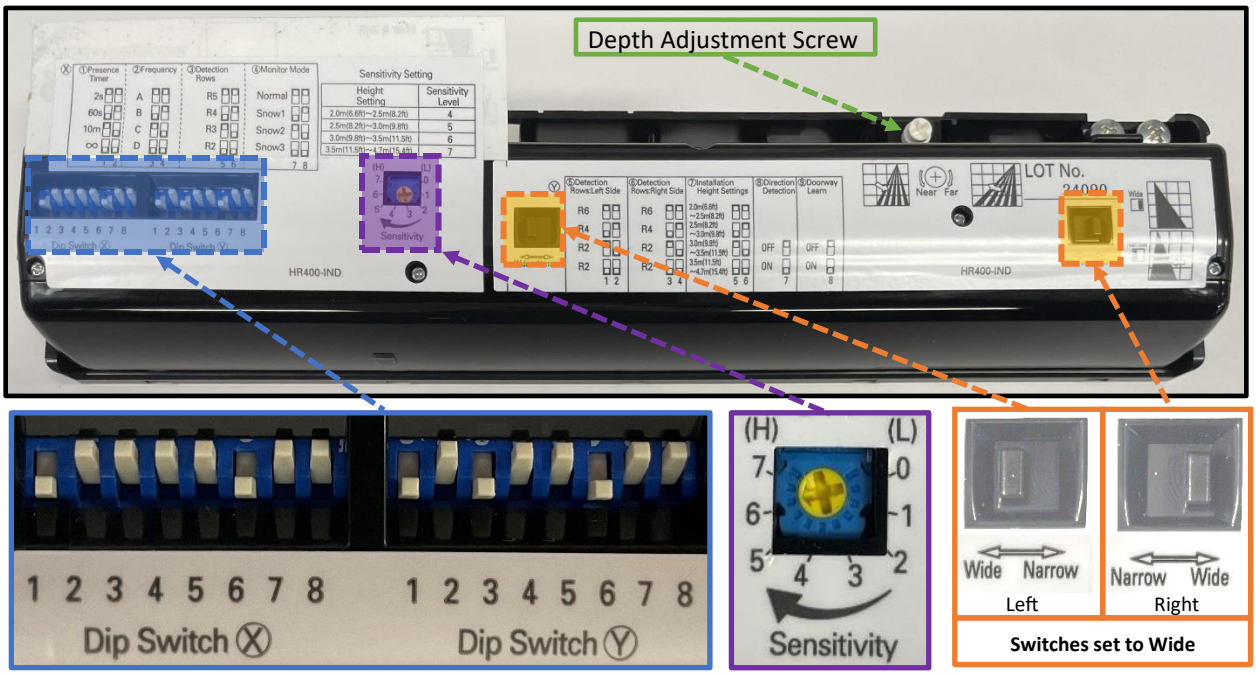
WIRING TABLE	
ZPS-F	AVC
RED	24V (+)
BLACK	24V (Gnd)
GREEN	DI-1 (1)
WHITE	DI (Gnd)
YELLOW	No Connection



Wiring Diagram

1e. Configuring the device.

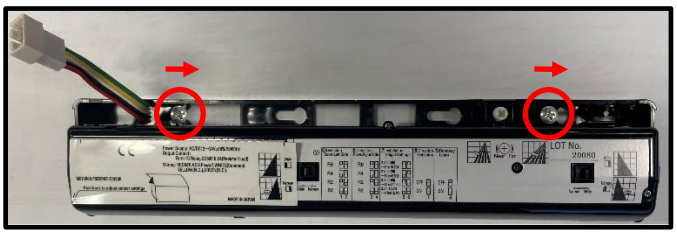
Lift the lower-left corner of the device's label to reveal the switches. Verify that they match the settings shown in the images below. These factory faults are optimized for general use and should serve as a good starting point. System-specific adjustments may still be required (see Step 2b).



Default Switch Settings

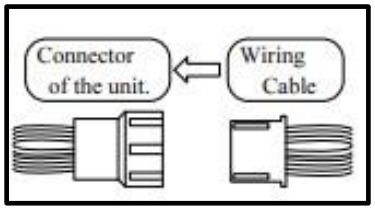
1f. Mounting and Connect Wire

Install the ZPS-F unit under the screw heads shown below. Carefully hand tighten the screws in the position shown.



Mounting the Sensor

Attach the connector at the end of the cable to the connector on the ZPS-F sensor.



Connecting the Cable

STEP 2: START UP

2a. Power up

Apply Power to unit and wait for the LED to illuminate. It takes 10 seconds after power up for presence sensing to start. LED lights solid (Green = no detection, Blue = detection - outer rows, Red = detection - inner rows).

2b. Test the Detection

Walk in and out of the area several times to test. The sensor should be activated regardless of whether the person walks towards or away from it. If you need to increase the sensitivity or area of detection of the ZPS-F refer to Appendix A to make the necessary adjustments.

Note: If using two or more sensors in close proximity to each other select different frequencies to prevent cross interference (Refer to Appendix A: Setting the Frequency).

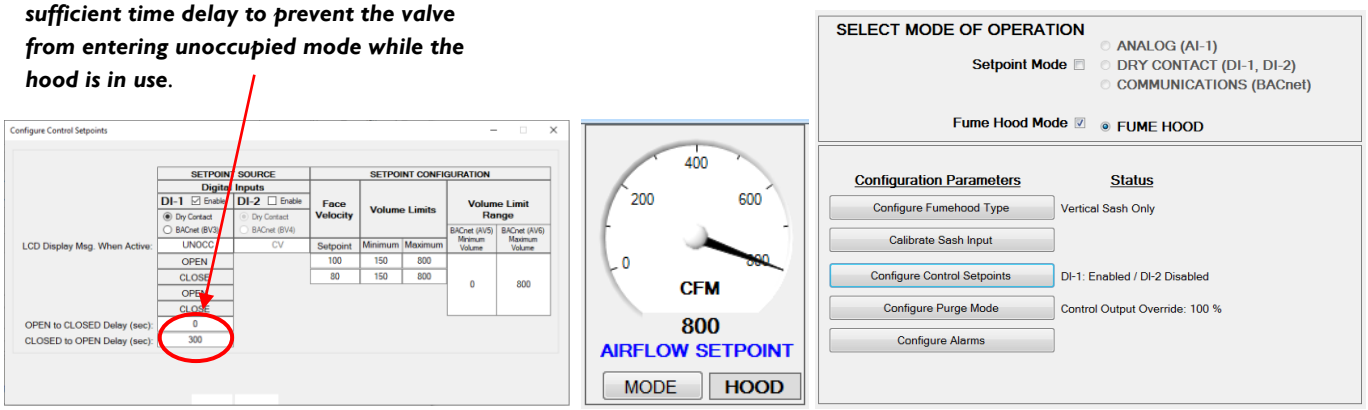
2c. Adjusting the Set Points and Delays using Accuvalve Insight Software

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.

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-F contacts will be closed when presence is not detected in front of the fume hood and open when presence is detected. For this example, the Face Velocity Setpoints will change from 100 FPM to 80 FPM when presence is no longer detected at the fume hood.

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



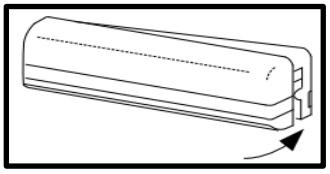
Note: the 300 second delay prevents the Fume Hood Controller from changing its face velocity setpoint to 80 FMP until five minutes after the ZPS-F detects no movement.

2d. Verification

Once the ZPS-F 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.)

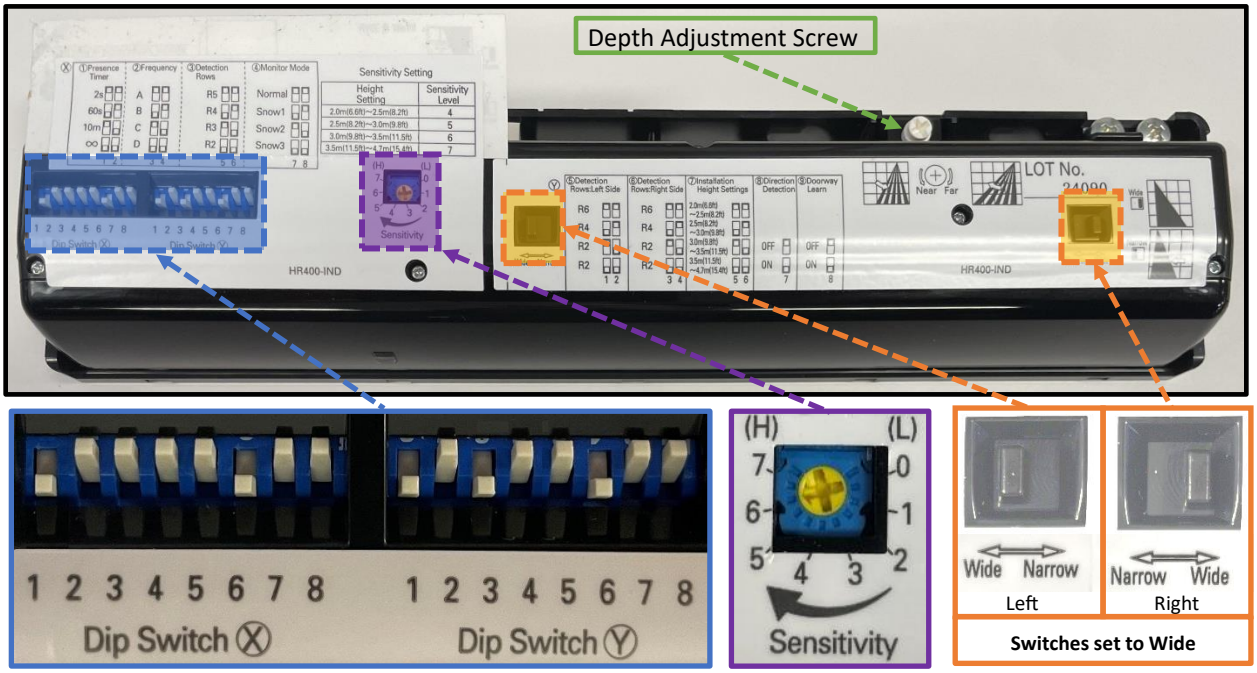
When you are satisfied with the operation of the sensor, replace cover by engaging the cover on left side first then snap down. Be careful not to change the position of the swivel sensor and move the sensor wires out of the way so they are not pinched. The cover will not change the sensitivity of the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

Replacing the Cover



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

Appendix A - Sensor Adjustment



Default Switch Settings

Depth Adjustment: Use Dip Switch X
Decrease Depth - change position 5 Down
Increase Depth - change position 5 Down & 6 Up

Left Side Width Adjustment: Use Dip Switch Y
Decrease Width – change position 2 Down
Increase Width – change position 1 Up

Note: To make a fine decrease adjustment, change the Left Width Switch setting from Wide to Narrow.

Right Side Width Adjustment: Use Dip Switch Y
Decrease Width – change position 4 Down
Increase Width– change position 3 Up

Note: To make a fine decrease adjustment, change the Right Width Switch setting from Wide to Narrow.

Setting the Frequency: Use Dip Switch X
When using multiple ZPS-F sensors, set position 3 & 4 differently on each.

Mounting Height Adjustment: Use Dip Switch Y & Sensitivity Rotary Switch

Default Mounting Height - 9.8ft to 11.5ft (3.5m to 4.0m)
Mounting Height - 8.2ft to 9.8ft (2.5m to 3.0m):
change position 5 Down, position 6 Up & change sensitivity rotary switch to position 5
Mounting Height - 11.5ft to 15.4ft (4.5m to 4.7m)
change position 5 Down & change sensitivity rotary switch to position 7

Depth Adjustment: Depth Adjustment Screw

To adjust the detection Window back from the Fume Hood turn Clockwise.

To adjust the detection Window toward the Fume Hood turn Counterclockwise.