

**To:** Site Technicians responsible for verifying system operation.

**Subject:** Verifying the operation of the AIRSYS Air Filter Protection Device (AFPD)

**Related Products:** All ASLLC Series Controllers (ASLLC.2, ASLLC.2.48, ASLLC.2A, ASLLC.2A.48)

**Background:** The AIRSYS AFPD senses dust or other particulates in the air and will automatically close the free cooling damper when the concentration reaches a preset amount. This bulletin provides instructions for verifying that the sensor is installed and operating correctly. This bulletin is only applicable when the unit is actively free cooling.

## Instructions

**Note:** A particulate source must be provided to verify system operation. Sources include canned smoke, cigarette smoke, and dirt.

**Note:** Verification must be conducted when the **outdoor temperature is < 65°F**. This will help ensure that free cooling conditions are met.

### I. Verifying AFPD Installation

Before verifying operation, verify that the AFPD has been installed at the site. An AFPD may not be installed on all units, but at least one **per controller** should be present. To access it, the front-bottom panel of the HVAC must be removed by taking off the four screws securing it. The AFPD is a white box that should be mounted below the filters. If it is not present in the first of a lead/lag pair then check the second unit. If neither unit has an AFPD mounted, then verification is not necessary.



### II. Verifying AFPD Operation

1. The system should be free cooling upon arrival at the site if the **outdoor temperature is <65°F**. Free cooling operation can be verified in one of two ways:
  - i. Shutting off the lights at the site and looking into the return (top) hole of the unit from the inside. If free cooling is active (damper is open), it should be possible indirect sunlight.
  - ii. Looking above the filter and checking the damper position (see below for pictures).



Free Cooling Inactive (Vertical)



Free Cooling Active (Horizontal)

2. If free cooling is not active, open the controller box and reset the **QF1** breaker inside. Free cooling should start soon after the controller reboots and displays the indoor temperature.
3. Introduce a particulate source near the AFPD to simulate a protection event.

**Caution:** When testing use short bursts/small amounts of smoke to avoid setting off fire suppression systems within the shelter. It is best practice to have the fire suppression system in bypass or test mode to avoid any chance of accidental discharge.

4. The dampers of the unit and any other units connected to the same controller should begin closing. If this is not the case, proceed to **Section III**.
5. Once all dampers on units connected to the same controller have closed, verification is complete, and the panels can be replaced on the unit.

### III. Troubleshooting

Use the instructions below to verify that the controller settings are correct, then re-attempt the verification process outlined in **Section II**. If free cooling is still unavailable and AFPD is present on the units, contact a service contractor to verify hardware installation.

1. Press **Up** and **Down** buttons together to reach the indoor temperature display.
2. Press **Up** until  $5\ 2\ 1$  is displayed.
3. Press the **Up** and **Select** buttons together. The screen should display  $1\ 1\ 5$  (if unit off) or  $5\ 2\ 1$  (if unit on). If unsuccessful, return to step 1.
4. Press **Up** until  $R\ F\ P$  is displayed and then press **Sel**.
5. Press **Up** to change  $n\ a$  to  $P\ E\ 5$  and then press **Sel**, the screen should be back to  $R\ F\ P$ .
6. Press **Up** and **Down** together to return to indoor temperature display.
7. Press **Up** until  $5\ 2\ 1$  is displayed.
8. Press **Down** and **Sel** together, the screen should display  $0$  (if unsuccessful, return to step 6).
9. Press **Up** until  $6$  is displayed, press **Sel**. The screen should display  $1\ 0\ 1$ .
10. Press **Up** until  $1\ 0\ 5$  is displayed, press **Sel**. The screen should display  $F\ 0\ 1$ .
11. Press **Down** until  $F\ 0\ 3$  is displayed, press **Sel**. The screen should display  $P\ E\ 5$ . If this is not the case, press **Up** to change  $n\ a$  to  $P\ E\ 5$ . Press **Sel** to confirm.
12. Press **Down** until  $F\ 0\ 4$  is displayed, press **Sel**. The screen should display  $P\ E\ 5$ .
13. Press **Down** until  $n\ a$  is displayed, press **Sel**. The screen should display  $F\ 0\ 4$ .
14. Press **Down** until  $F\ 2\ 3$  is displayed, press **Sel**. The screen should display  $1\ 0$ .
15. Press **Down** until  $0$  is displayed, press **Sel**.
16. Press **Up** and **Down** together to return to the L menu and **Up** and **Down** together a second time to return to the indoor temperature display.