CS Bulletin

Configuring Two Controllers on Sites with 3 WPUs

8-Dec-17

To: Cell Technicians and Service Contractors responsible for installation and repair.

Subject: Configuring 2 AIRSYS Lead Lag Controllers for sites with 3 WPUs.

Associated Products: Controller models ASLLC.2A and ASLLC.2A.48. All Cat 5 equipped WPUs.

Background: 3 unit configurations require two AIRSYS Lead/Lag Controllers to operate. For optimal efficiency and reliability, system runtime should be distributed among all three units by configuring one controller for single unit operation.

Sites with 3 WPUs require two controllers, where one controller controls two units and the other controls the third unit (Figure 1).

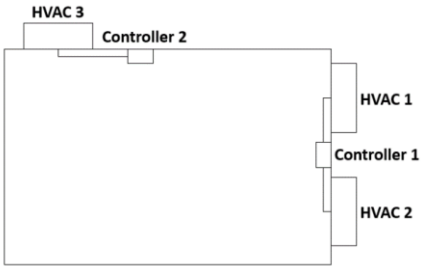

Figure 1: 3 Unit System Layout

3 Unit Site Configuration

Instructions:

I. Place the indoor temperature sensors (rt1) for **both** controllers at the same location. Care should be taken to ensure that supply or exhaust air is not blowing directly or indirectly (reflected) at the sensors.

II. On the single unit controller, verify that the WPU is wired to the controller using two ethernet cables connected at the top two ports (Figure 2).

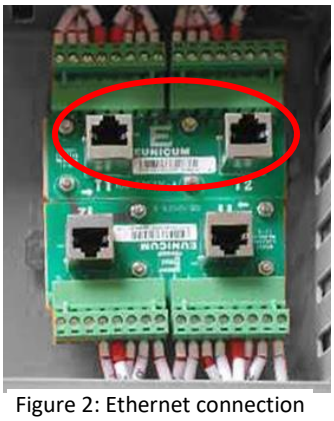
Figure 2: Ethernet connection to HVAC for single unit

III. On the single unit controller, change "System Number" from 2 to 1

1. On the PLD, Press **Up <u>and</u> Down** together (Figure 3) to return to the main menu. The indoor temperature should be displayed.
2. Press **Up** to scroll to SEt.
3. Press **Down <u>and</u> Sel** together. The screen should display a flashing **0**. If not, return to step 1.
4. Press **Sel**, the screen should display StP.
5. Press **Down** until SYS is displayed. Press **Sel**. The screen should display 2.
6. Press **Down** to change 2 to 1. Then press **Sel** to confirm.
7. Press **Up <u>and</u> Down** together to return to the main menu.

Figure 3: PLD User Interface

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IV. Open the single unit controller box and disconnect the pLAN cable (J6) on the controller module labelled HVAC 2 (Figure 4). After disconnecting the pLAN cable, restart the controller by turning off the QF1 breaker (lower left section of controller box) and turning it back on after 10 seconds.

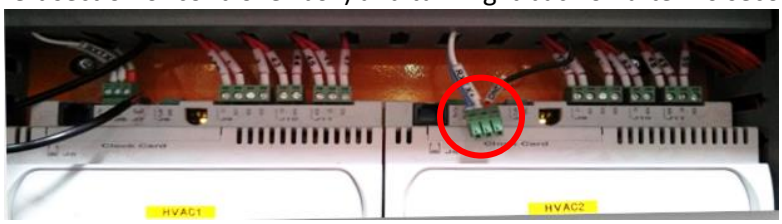

Figure 4: Disconnect the pLAN Cable

V. Change the lead offset on the single unit controller

To evenly distribute runtime between all three units, the lead offset on the **single unit controller** should be changed to 4°F by the following steps:

1. Press **Up <u>and</u> Down** together to return to the main menu if it is not already displayed.
2. From the main menu (indoor temp display) press **Up** to scroll to SEt.
3. Press **Down <u>and</u> Sel** together. If done correctly, the screen should display a flashing **0**. If not, return to step 1.
4. Press **Sel**, the screen should display StP.
5. Press **Down** until C02 is displayed. Press **Sel**. The screen should display 2.0.
6. Press **Up** to increase the lead offset to 4.0. Then press **Sel** to confirm.
7. Press **Up <u>and</u> Down** together to return to the main menu.

VI. Verify indoor temperature readings and calibrate if necessary

1. On **both** controllers, press **Up <u>and</u> Down** together to return to the main menu. The indoor temperature should be displayed.
2. Verify that the indoor temperatures (main menu) displayed on both controller screens are within 0.5°F of each other. If this is the case, no further action is needed. Otherwise, proceed to step 3 to calibrate the single unit controller.
3. On the **single unit controller**, press **Up** to scroll to SEt.
4. From SEt press **Sel**, the screen should display StP.
5. Press **Down** until nCAL is displayed, then press **Sel** to display the current calibration (default 0).
6. Press **Up** or **Down** until the desired calibration is achieved, then press **Sel** to confirm. The calibration offset directly correlates to the temperature reading, meaning that an offset of +1.0 will increase the temperature reading by 1.0 °F/C depending on the temperature unit settings. Sample calibrations are given below.

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7. Press **Up and Down** together to return to the main menu. Verify that the displayed indoor temperature for both controllers is within 0.5°F of each other. If this is the case, no further action is needed. Otherwise, repeat steps 2-7.

Sample Calibrations:

Example 1. If the two unit controller displays a room temperature of 70°F and the single unit controller displays 71.2°F, the calibration value (Step 6) on the **single unit controller** should be **decreased** by 1.2 from the existing value (default 0). The single unit controller should then display a room temperature of 70°F.

Example 2. If the two unit controller displays a room temperature of 75°F and the single unit controller displays 72°F, the calibration value (Step 6) on the **single unit controller** should be **increased** by 3.0 from the existing value (default 0). The single unit controller should then display a room temperature of 75°F.

VII. Verify temperature setpoint and change if necessary

Ensure that the main setpoint on **both** controllers is the same (Default 79°F). To verify the setpoint, perform the following steps:

1. Press **Up and Down** together to return to the main menu. The indoor temperature should be displayed.
2. From the main menu (indoor temp display) press **Up** to scroll to SEt.
3. Press **Sel**, the screen should display SEP.
4. Press **Sel**, the screen should display the current setpoint (Default 79°F). If the setpoints on **both** controllers are the same, no further action is required. Otherwise, proceed to step 5.
5. Press **Up** or **Down** until the screen displays the desired setpoint and press **Sel** to confirm the new setting, the screen should display SEP.
6. Press **Up and Down** together to return to the main menu.

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VIII. Average temperature sensor readings (Optional)

For sites utilizing hot and cold aisle containment averaging multiple temperature sensors may be necessary for the controller to have an accurate picture of the overall site temperature.

The 5 analog input points (all ASLLC temperature sensors are analog resistive type) are individually monitored but can only accept one input each. To average the indoor temperature inputs (rt1), 4 sensors can be wired in a network as shown below.

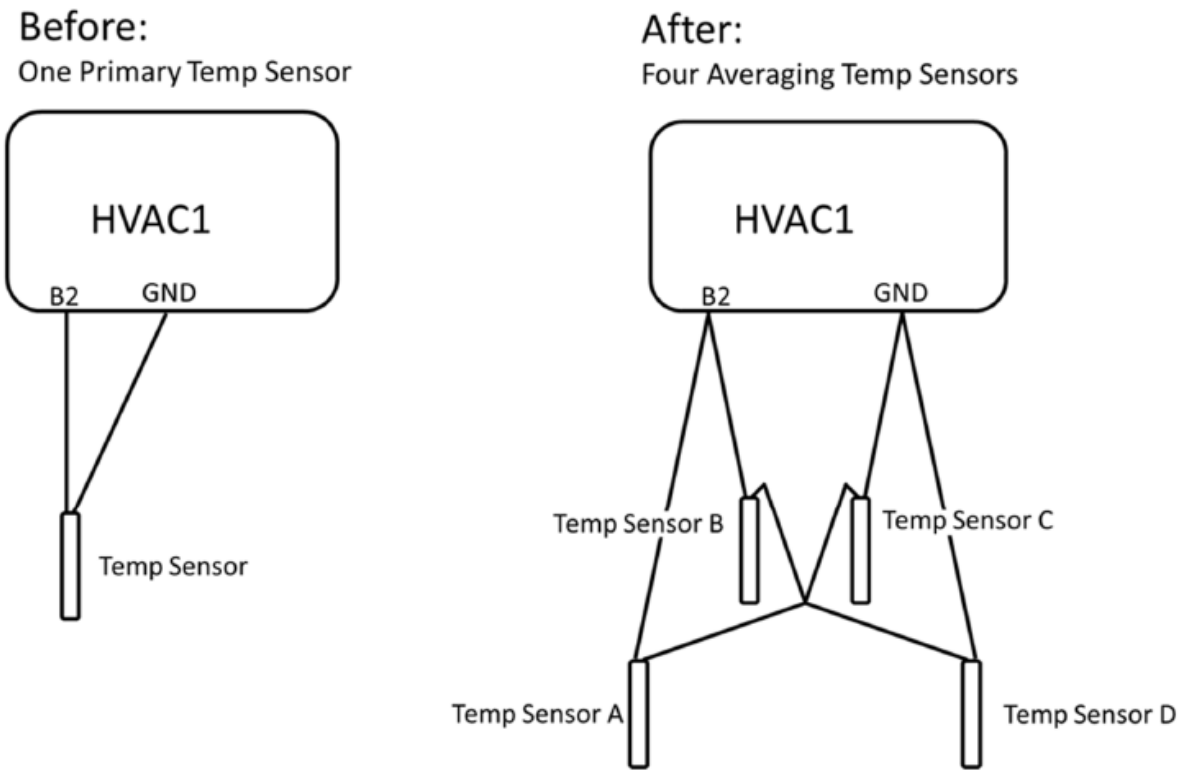

Figure 5: Averaging Temperature Sensors

For more information on setting up multi-controller systems, refer to the AIRSYS white paper which can be found at https://support.airsysnorthamerica.com/solution/articles/6000137904.

For questions, contact AIRSYS support at 855-874-5380 or ASNSupport@air-sys.com.

For a list of available training courses, go to https://airsysnorthamerica.com/webinars