

CS Bulletin

Changing Fan Speed, Humidity Settings, and Damper Tolerance

25-Jun-14

To: Cell Technicians and Service Contractors responsible for PM Service and Repair

Subject: Changing Fan Speed, Humidity Settings, and Damper Tolerance

Background:

Fan Speed Setting: In earlier versions of the operational software (rev.13B46 and lower) the supply fan of the lead unit was set to continue to operate at a low speed even after the site reached the bottom of the control range (typically 73°F). This was to ensure the air is constantly being circulated in order to minimize “hot spots” in the shelter. Whenever outside temperature drops below freezing this constant air circulation also brings cooler air into the site due to the WPU being a large, cold sink. For sites that are “lightly loaded” (heat loads < 4kW) this can continue to drop the indoor site temperature to the point where the heater needs to turn on (typically at Tinside = 50°F). This is a waste of electricity and detracts from the operational efficiency the AIRSYS WPUs are trying to deliver. We recommend changing the minimum fan speed settings so the fan will NOT circulate once the bottom of the control range has been achieved.

A19: Humidity Sensor Defective Alarm: A19 is an informational alarm that indicates the indoor relative humidity has reached the upper control limit (typically ~90%). In some lightly loaded sites (< 4kW), the natural decrease in temperature at night will cause the humidity to continue to rise, triggering this alarm. Reducing the maximum humidity setting allowed for Free Cooling (FC) increases the tolerance for humidity change due to environmental conditions. Please note that the higher this control point limit is set, the more hours during the year that the system will be able to FC instead of Mechanical Cooling (MC). The ideal configuration would be to set the humidity control point just below the point where the site could experience water condensation developing on the equipment. This way you are protecting the site equipment from harmful condensation and optimizing the annual FC time. If you do get an occasional A19 alarm, verifying that the humidity sensor cable is firmly plugged into the humidity sensor is also recommended.

NOTE: Controller software rev.13B46 and higher (47, 48 etc.) will only display A19 when there is a faulty or incorrectly installed humidity sensor.

CS Bulletin

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A24/25: Damper Failure Alarm: During periods of Free Cooling (FC) the AIRSYS controller verifies outside air damper functionality by comparing the indoor and outdoor temp sensor measurements to the supply air temperature sensor reading. For example, if the air damper is closed the supply air temperature should be the same as the indoor temperature within a few degrees. Similarly, if the air damper is 100% open then the supply air temperature should be the same as the outdoor reading within a few degrees. Depending on the temp sensor placement there is some susceptibility to errant damper failure alarms (A24 or A25). Two examples of this are 1) the outdoor temperature sensor box is installed in a location where it is exposed to direct sun (oven effect) and 2) shelter equipment blowing exhaust air on indoor temperature sensors. Increasing the temperature tolerance for validating the damper function minimizes the likelihood of an errant alarm. Evaluating the site configuration and sensor placement is also recommended. Controller software rev.13B46 and higher (47, 48 etc.) will have this setting change pre-installed.

Refer to page 3 for step-by-step instructions.

CS Bulletin

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Instructions:

To see what software revision is installed:

1. Press **UP** and **DOWN** together to return to main menu (indoor temperature displayed), press **UP** for **SE**
2. Press **SEL**, the screen should display **SE**
3. Press **Down** until the screen display **UE** and hit **SEL**, this is the current software revision
4. Press **SEL** to return to **UE**, then press **UP** and **DOWN** together to return to **indoor temp**

To change fan speed (*only change for very lightly loaded sites, <4kW*):

1. Press **UP** and **DOWN** together to return to main menu (indoor temperature displayed), press **UP** for **SE**
2. Press **DOWN** and **SEL** at the same time, the screen should display **0**
3. Change to **6** and press **SEL**, the screen should display **LO**
4. Go to **LOS** and hit **SEL**, the screen should display **FO**
5. Press **DOWN** until the screen displays **FI** and hit **SEL**, should display **5.1 (or current setting)**
6. Change to **1.5** and press **SEL**, the screen should display **FI**
7. Press **UP** and **DOWN** together to return to the main menu.

To change humidity setting:

1. Press **UP** and **DOWN** together to return to main menu (indoor temperature displayed)
2. Press **UP** for **SE**
3. Press **DOWN** and **SEL** at the same time, the screen should display **0**
4. Change to **6** and press **SEL**, the screen should display **LO**
5. Go to **LO4** and press **SEL**, the screen should display **UO**
6. Press **DOWN** for **UO4** and hit **SEL**, the screen should display **90 (or current setting)**
7. Change to **80** and hit **SEL**, the screen should be back at **UO4**
8. Press **UP** and **DOWN** together to return to the main menu.

To change damper tolerance: (For software revision 39 and 40 only)

1. Press **UP** and **DOWN** together to return to main menu (indoor temperature displayed), press **UP** for **SE**
2. Press **DOWN** and **SEL** at the same time, the screen should display **0**
3. Press **SEL**, the screen should display **SE**
4. Press **UP** until the screen display **FE** and hit **SEL**, the screen should display **3.6 (or current setting)**
5. Change **3.6** to **10** and hit **SEL**, the screen should be back at **FE**
6. Press **UP** for **FE** and hit **SEL**, the screen should display **3.6 (or current setting)**
7. Change **3.6** to **10** and hit **SEL**, the screen should be back at **FE**
8. Press **UP** and **DOWN** together to return to **indoor temp**