# COMMISSIONING A SIMPLICITY SMART EQUIPMENT CONTROL BOARD

# FOR VAV OPERATION

These instructions are intended to help you commission the SSE control when replacing a board or confirming settings in the existing board already installed. Location of commissioning parameters in the SSE Board will vary with firmware version. These instructions apply to version 4.0 and higher firmware. Procedures similar on earlier versions however the location of specific parameters vary.

*Review NOTES before proceeding.

**Notes:** These instructions are not intended to replace the manufactures instruction which also should be used when commissioning any unit with Simplicity Controls.

- All safety requirements specific to the manufactures unit also need to be reviewed and followed when working with any unit.
- This information is provided by US Air Conditioning Distributors Customer Assurance Department and is intended to add to your understanding of commissioning a Simplicity Smart Equipment controller.
- If there are any questions at all, please contact US Air Conditioning Distributors Customer Assurance Technical Support. usacdtech@us-ac.com or call 866-437-5730

## Variable Volume Units

For all VAV sequences the fan control type (**FanCtl-Type**) must be set to variable speed, not Fixed Variable.

### Commissioning:

### *Before powering the unit, disconnect the red jumper between the R to OCC terminal on the SSE control located at the thermostat connection. This should keep the unit from operating while configuring and verifying parameter settings.

Power unit on. if you have replaced the board with one having newer firmware. It may take up to 20 minutes + to load all firmware into additional boards if installed in unit. Note: Replacement SSE boards have ability to load its firmware into other boards if the firmware is a higher firmware version than the other boards. While loading firmware you will see various files referenced in the display with a reboot of the board in between completion of loading. Once you see the word **IDLE** on the display wait an additional 3 minutes to see if the replacement will load its firmware into other boards.

Once you see the word **IDLE** not change on the display the control is ready for commissioning. Use the Joystick and joystick down to the parameter called "**Update**", with the arrow on update push the **ENTER** button. The first line should say **view version**, push **ENTER** to view firmware. Make note of version number for the future. Example version 4.3.1.24

**Verifying common settings:**

After you have noted the Firmware version. Push the **CANCEL** button multiple times to start from the beginning, **IDLE**. Now Joystick down to **Commission**. With the arrow on **Commission** push **ENTER**, then with arrow pointing to **Quick Start**, Push **ENTER**. Arrow should now be on **#ClgStgs**, push **ENTER**. Here is where you will set the number of cooling stages. The number should match the number of compressors in unit. You can always check Plug P10 on the SSE board if you are not sure how many stages you have. If you have output wires on both C1 & C2 of plug 10 you have 2 stages. If you have a unit with 3 or 4 compressors there will be an additional 4 stage board with a plug 8 with a C3 and C4 output. Joystick left or right or up and down to make changes. Push **ENTER** if changes are made to accept and confirm.

If cooling stages have been set, you may continue joy sticking down to the Heating Stages. **#HtgStgs**: press **ENTER** to verify or make changes. You can check your Schematic or Plug P3 on the SSE board to see your outputs on H1, H2 terminal's. Joystick left or right or up and down to make changes. Push **ENTER** to accept and confirm. Joystick down to **#Heat Pump Stages**, this should always be zero if the unit is a gas electric or cooling only unit. VAV is not currently allowed on Heat Pump Units

Now Joystick down to **#RefrigSys, push enter.**

**#RefrigSys**, this is the number of Refrigerant circuits in the unit. There could be up to four refrigerant circuits. To make changes, with the arrow on **#RefriSys**, push **ENTER**. Joystick Left or right or up and down to make changes, push **ENTER** to accept and confirm. Now Joystick down to **FanCTL-Type, push enter.**

**FanCTL-Type** This where you will select the type of Fan operation, For VAV units this setting should be set to **Variable Speed**. Push **ENTER** to accept and confirm. Now Joystick down to **Tstat-Only, push enter.**

**Tstat-Only**, VAV units, this parameter should be set to "**NO**". VAV units' control their operation temperatures by using a space sensor field wired to SSE board or controlled by network communication via BACnet. If there is no space sensor or communication through building controls, then the unit will default to its **return air sensor**. To make a change, with the arrow on **Tstat-only**, press **ENTER**, then Joystick left or right to make setting **NO** then press **ENTER** to confirm. Now Joystick down to **FanonOcc, push enter.**

**FanonOcc**, Fan on when unit is occupied, this is your choice if you select "**yes**". the fan will run 24-7. This setting is generally set to **YES** with VAV systems however it is optional. After making the selection **YES** or **NO** push ENTER to confirm. Now joystick down to the last parameter under Quick Start which is **Unique Equipment Identifier**. From **fanonOcc** position you will joystick down eight to nine times to get to **Unique Equipment Identifier** parameter, with arrow on **Unique Equipment Identifier** parameter press **ENTER**. You will need to select an option based on unit's compressor configuration. "**Standard**" will always work however there maybe other option depending on the model of unit. Joystick Left or right to make changes, push **ENTER** to accept and confirm.

## For units Configured as VAV the fan VFD is controlled by Supply Duct Static Pressure. Continue commissioning with steps below.

From **IDLE** on display Joystick down until you get to the Parameter **Details**, with the arrow on **Details**, push **ENTER**, joystick down to " sub menu "**FanVFD**" push **ENTER**. then "**Setup**" push ENTER.

The first parameter you will see is **FanCtl-Type**, push **ENTER** and make sure it says, " **Variable Speed**". Joystick down next to **Duct Pressure Setpoint**, push **ENTER**, factory default is 1.50"wc, your choice, **this is the set point where you want to control the supply duct static pressure**. Make any changes and Push **ENTER** to accept and confirm any changes.

Now joystick down to **DutShutDown SP**, factory default is 4.5"wc maximum supply duct pressure set point. Make changes if needed and push **ENTER** to confirm.

***The next three parameters have to do with compressor staging during cooling operation.**

Joystick down to your next parameter **SATUp-SP**, (supply air upper setpoint). Factory setpoint is 60. Select a temperature and push **ENTER** to accept and confirm.

Next joystick down to **SATLo-SP**, (supply air lower setpoint). Factory setpoint is 55. Select a temperature, must be lower then the upper setpoint, push **ENTER** to confirm.

Next joystick down to **SATRst-SP** (supply air reset setpoint). Factory default is 72 space temperature. This is the temperature where if above +2 degrees the compressor staging to the lower setpoint and if below controls to the upper setpoint. **Note if there is no space temperature sensor connected or communicated through a BAS network to the SSE controller it will default to the return air sensor in the unit.**

Joystick down to **VAVCLGUNOCC-SP** (VAV Cooling Unoccupied Setpoint) Factory default 85. Make changes as needed, push ENTER to confirm.

Joystick down to **MORNW-EN** (Morning Warmup Enabled). Select **YES** or **NO** and push **ENTER** to confirm. If **YES** joystick down to **VAVHTGOCC-SP** (VAV Occupied Heating Setpoint). Select a temperature in which space or return air sensor is below the heating will come on to warm the building up to that temperature.

Push **CANCEL** button multiple times to get back to **IDLE**. The basic settings you checked above should allow the unit to operate. Additional commissioning setting changes or parameter setting verifications depends on what **other options or accessories are installed**. Refer to the Units **Quick Start Guide** for the location of other parameters. **Quick Start Guide** parameters are usually at the back of the installation manual that came with the unit. They vary depending on firmware version in the SSE board. If a copy is needed visit www.us-ac.com website, Training tab, Technical Literature to find a **Quick Start Guide** for your version firmware or email usacdtech@us-ac.com and request a copy. You will need to supply the firmware version number. The version number can be found under parameter **Update** sub-menu **Few Version** - push enter to view.

Your now ready to test operation of the unit. Reconnect the **RED** jumper wire between the **R** and **OCC** terminals on the SSE control board. This should start the indoor blower and cooling or heating depending on your selected parameter setting's. Make changes if needed to parameter settings.

*If satisfied with the parameter settings and operation of the **unit,** we recommend performing a **BACKUP** of the parameter settings. This is done to save the settings to the **EPROM** on the board and or -

to a USB Flash Drive. To perform a **BACKUP** to the EPROM on the board, joystick down to the parameter **UPDATE**, push **ENTER**. Joystick down to **BACKUP**, push **ENTER,** and you should see the backup occurring in percent (%) of progress. Wait until you see 100%. The backup is now completed. Push the **CANCEL** button several times to get back to the beginning operational display.

*To save a **backup to a USB flash drive**, insert the USB flash drive into the USB plug on the SSE board then perform the same procedure as above. This will now save the parameter to the flash drive which can be used to reload the parameter settings into the same control board or a replacement board.

## CLONING A BOARD REPLACEMENT OR FROM ONE UNIT TO ANOTHER

### Cloning a Backup file from one board to another board.

If replacing a SSE board and your original board is still operationally as far as being able to maneuver with the joystick to the parameter **UPDATE** you can copy the parameter settings from the old board by doing a **BACKUP** and then **CLONE** them into the replacement board using a USB flash drive. **Recommended is a 16 gigabit flash drive or smaller.**

With the board powered, but unit not operating, insert the USB flash drive into the USB plug on the board. Joystick down to the parameter **UPDATE**, push the **ENTER** button. Joystick down to **BACKUP,** push **ENTER**. You should see in the display data loading onto the flash drive, indicated by an increasing % number in the display. Wait until it says **100%**. You may now pull the flash drive from the board.

When the board your cloning is ready plug the USB flash drive into the USB plug on the board. Joystick down to **UPDATE**, push **ENTER**. Joystick down to **FULL CLONE**, push **ENTER**. You should now see data loading into the board. When finished the board will reboot and enter its two-minute startup delay. Once in the two-minute delay you may pull the flash drive from the board.

SSE Board should now be ready to test operation of unit with the cloned parameter settings. Use commissioning parameters if needed to verify settings are as correct for your unit operation.