

COMMISSIONING A SIMPLICITY SMART EQUIPMENT CONTROL BOARD FOR CONSTANT VOLUME

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

Constant Volume Units with or without VFD for Indoor Blower

Confirm thermostat is not calling or unplug thermostat inputs at board.

Power unit on, get a cup of coffee 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

After you have verified 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.

With the arrow on **#HtPumpStgs** and push **ENTER** to verify the number of stages, (typically matches the number of cooling stages), joystick left or right or up and down to make changes, push **ENTER** to accept and confirm.

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

#RefrigSys, this is the number of Refrigerant circuits in the unit. 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. There could be up to four refrigerant circuits. Now Joystick down to **FanCTL-Type**, push enter.

FanCTL-Type This where you will select the type of Fan operation, if you have a VFD, this setting should be set to **Fixed-Variable**. if NO VFD, "**Single Speed**" should be selected. Push **ENTER** to accept and confirm. Now Joystick down to **Tstat-Only**, push enter.

Tstat-Only, this parameter should be turned to "Yes" if unit is controlled by a Thermostat, "NO" if unit is controlled by a space sensor field wired to SSE board or controlled by BACnet. To make a change, with the arrow on **Tstat-only**, press **ENTER**, then Joystick left or right to make selection 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. Set this setting to "**No**" if a thermostat is controlling the unit's indoor fan. press **ENTER** to confirm. After making the selection **YES** or **NO** you can 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 ensure it says "**Standard**". Left or right to make changes, push **ENTER** to accept and confirm.

This concludes the most common commissioning parameters for a **Constant Volume, Single speed fan** units with (**No VFD**) or (**Fixed Variable**) with a VFD controlled fan. Push the **CANCEL** button multiple times to get back to the **IDLE** setting. If unit does not have a VFD, the unit is ready for you to test operation. Use jumper at thermostat inputs or plug thermostat plugs back onto the board and set thermostat to cooling or heating to test unit operation.

For units with VFD controlling the fan continue commissioning with steps below

For **constant volume units** with VFD fan control the **Fan Control type parameter** should be set to (**Fixed Variable**). Continue commissioning further the % of fan speed settings used with the different thermostat inputs. (G, Y1, Y2, Y3, Y4, W1, W2)

If any changes are made to the following parameters remember to then push **ENTER** to accept and confirm the new setting.

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 "**Fan**" push **ENTER**. then "**Setup**" push ENTER.

The first parameter you will see is **FanCtl-Type**, push **ENTER** and make sure it says, "**Fixed Variable**". The next setting down is **FanOnOcc**, your choice, **yes** for continuous fan or **no** for thermostat control "G" input from thermostat. Push **ENTER** to accept and confirm any changes.

Now joystick down through the heating and cooling fan time delay settings. Adjusted timing as needed. Continue to the parameter **FanOnly%Command**, this is the speed setting for a fan only input "G" from the thermostat and is generally set to 50% speed. You can change if needed but must always be set less than the cooling and heating speeds.

Joystick down to your next parameter **First Stage Cooling % command**, (Y1) typically set to 70 %, Joystick left or right or up and down to make changes, push **ENTER** to accept and confirm.

Joystick down to **Second Stage cooling percent Command**, (Y2), typically set at 100 % on two stage cooling units. To make a change depending on the firmware you may need to add another digit number by joy sticking left or right up or down to create a two or three-digit number. Make your changes and then push **ENTER** to accept and confirm setting. On a four-stage cooling unit you will have a Third and Fourth cooling % speed setting, (Y3&Y4). If the # of cooling stages (**#ClgStgs**) is set to two, then the Third and Fourth stage % fan speed settings are ignored. Otherwise set your Third and Fourth % speed setting changes as needed.

Next Joystick down to **first and second heat stages % speeds**, (W1&W2), typically set at 100%, please verify. Setting can be lower than 100% if required to get your air temperature rise (delta T) to be within temperature rise range on unit name plate.

This concludes the commissioning (Setting)of the fan speeds. 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.

*If satisfied with the parameter settings and operation of the **unit**, we recommend performing a **BACKUP** of the parameters 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.