SSE SIMPLICITY BOARD BASIC 2023

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INSTALL CONFIDENCE

1

Ducted Systems Technical Services Monthly Webinar

SSE Ver. 4.0

SMART EQUIPMENT Johnson Controls

SSE VERSION RELEASES

1.0.0.1101	OCTOBER 2013	CDR A/C, T-STAT FUNCTIONS
3.0.0.1072	AUGUST 2014	FULL LAUNCH, ALL PRODUCTS
3.0.0.1124	AUGUST 2015	DEFROST CURVE 6, CDR
3.1.0.0128	DECEMBER 2015	AUTO-UPDATE
3.2.0.0138	JANUARY 2017	AUTO-TUNING IMPROVED, NEW HGR MODE
3.3.1.186	AUGUST 2018	**NEW MENU STRUCTURE, DOWN-VERSION BLOCKER**
3.4.1.447	JANUARY 2019	NEW SINGLE ZONE VAV, **AUX. DOWN-VERSION BLOCKER**
4.0.0.1051	**JANUARY 2020**	CONVERSION TO MATLAB® DEVELOPMENT SYSTEM
		NEW MIDAS ALGORITHMS

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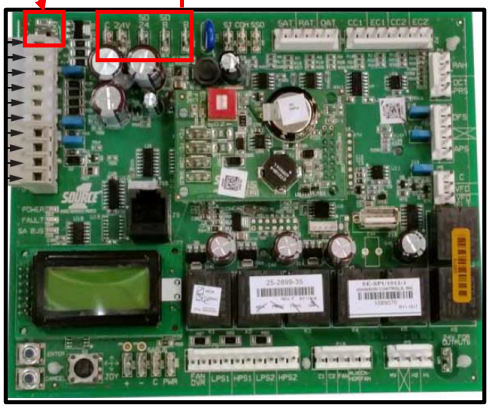
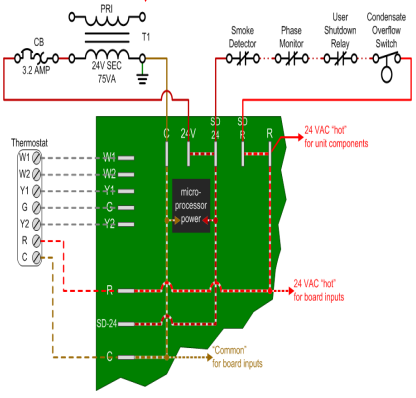
SSE Board and Navigation

3

Limit Terminal





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Optional Inputs
ST=Space Temperature Input **10 K sensor at 77 degrees Reverse Acting.**
SSO= Space Sensor Offset 0-20K ohm Potentiometer Input

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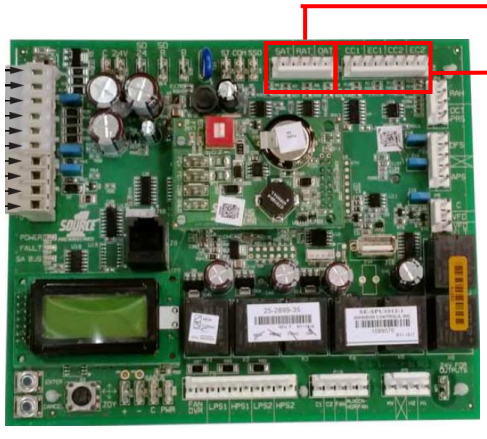
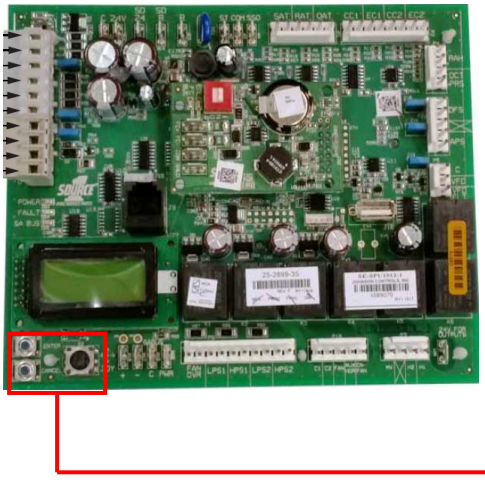


SAT=Supply Air Temperature
RAT= Return Air Temperature
OAT=Outside Air Temperature
Sensors are 10K Ohms @77 Degrees Reverse Acting

CC1= Condenser Coil Sensor #1
EC1= Evaporator Coil Sensor #1
CC2= Condenser Coil Sensor #2
EC2= Evaporator Coil Sensor #2
Sensors are 10K Ohms @77 Degrees Reverse Acting

6



Up and down movement of Joystick will toggle between menus. Two selections will be on the screen. Cursor will be next to one of the menus. Side to side movement of Joystick will change selections within the parameter.
Enter button will enter selected menus and save changes.
Cancel button will move back one menu screen. May need to press multiple times to get back to home screen.

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Joystick/Enter/Cancel Buttons

- Up and down movement of Joystick will toggle between menus. Two selections will be on the screen. Cursor will be next to one of the menus. Side to side movement of Joystick will change selections within the parameter.
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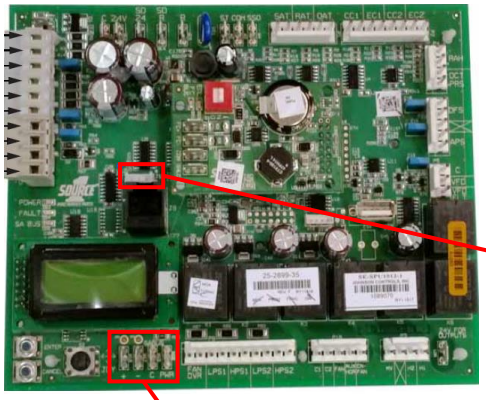

J15 Factory installed economizer communicatio ns bus

S/A Bus (Sensor/Actuator). Field install Expansion board(s)-Economizer communications bus

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Terminal SA BUS[1] connections on at left on lower edge and center of UCB		
PWR	Power for SA ("Sensor-Actuator") BUS devices	Also incorporated in the J8 6-pin phone jack connector at the left-center of the board. Positive of the 15 VDC (reading to C) circuit for powering an optional netstat and/or Multi Touch gateway
C	Common for SA BUS power and communication circuits	Also incorporated in the J8 6-pin phone jack connector at the left-center of the board. Negative of the SA BUS circuits
-	Communication for SA BUS devices	Also incorporated in the J8 6-pin phone jack connector at the left-center of the board. Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to C; at least 0.25 volts lower than +) SA BUS communication circuit to optional economizer board, 4-stage board, fault detection & diagnostics board, netstat and/or Multi Touch gateway
+	Communication for SA BUS devices	Also incorporated in the J8 6-pin phone jack connector at the left-center of the board. Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to C; at least 0.25 volts higher than -) SA BUS communication circuit to optional economizer board, 4-stage board, fault detection & diagnostics board, netstat and/or Multi Touch gateway

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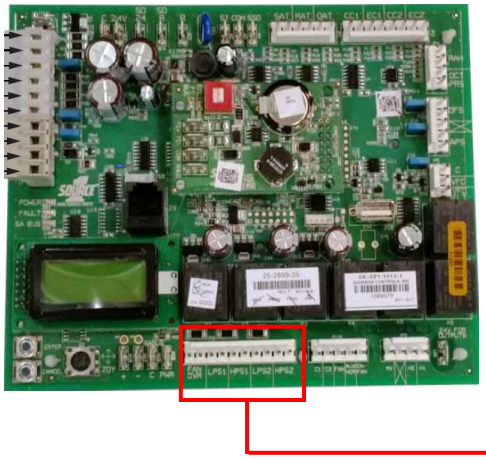

Fan OVR= Fan Overload Safety
LPS1= Low Pressure Safety Circuit 1
HPS1= High Pressure Safety Circuit 1
LPS2= Low Pressure Safety Circuit 2
HPS2= High Pressure Safety Circuit 2
24VAC

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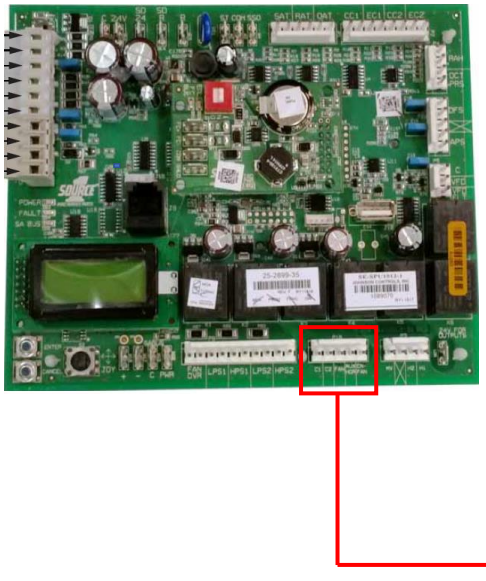

C1= Compressor #1 Contactor Output
C2= Compressor #2 Contactor Output
Fan= Fan Contactor Output or Signal to VFD Relay
AUX HGR= Hot Gas Re-Heat Output. Only on Magna Dry Units (ZR series)
Cn-Fan= Condenser Fan Contactor Output
24 VAC

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MV= 24 Volts from gas valve thru ignition module to report that the valve has 24 volts to open
H1= Output for Heating Stage #1/Reversing Valve on Heat Pumps
H2= Output for Heating Stage #2
24 VAC

24 Volts for Output= 24 volts to power the output relays. May be from a separate transformer or from low volt connections on top of board for singe transformer systems

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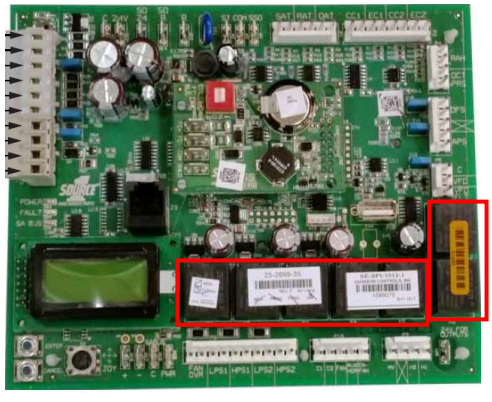

Output Relays

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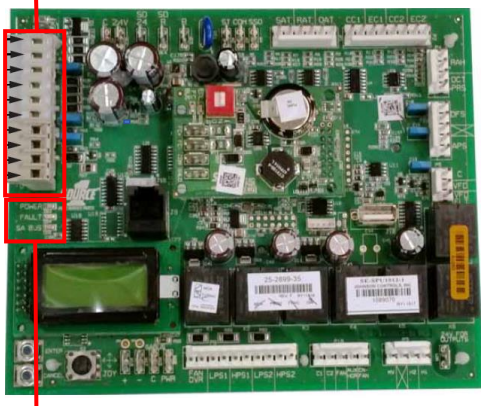

Low Volt Thermostat Terminal Blocks. They can be removed for easier connections or use stay con connectors directly to SSE board.

Green Power Indicator Light
Red Fault Indicator Light
Green SA Bus Indicator Light

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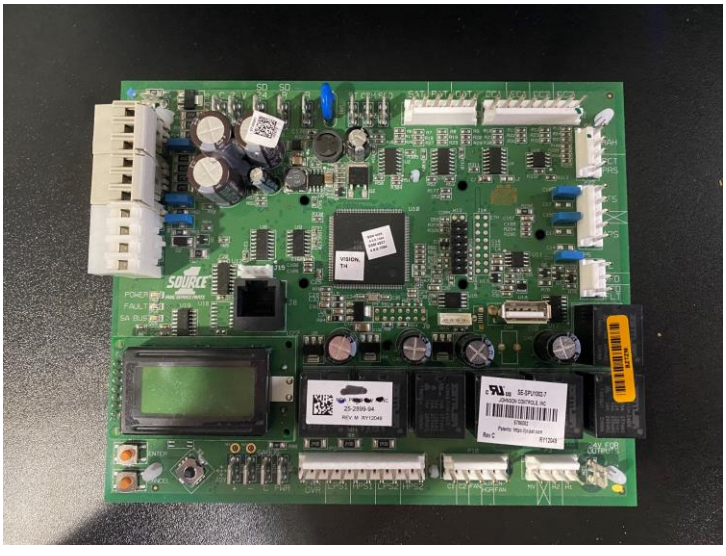

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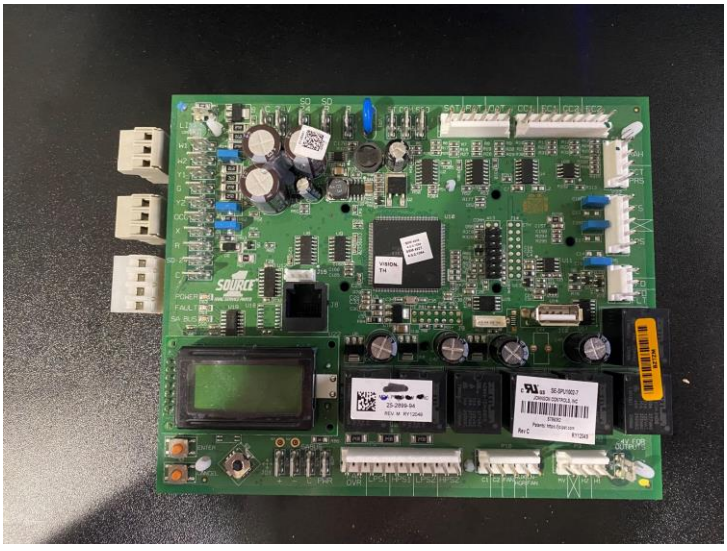

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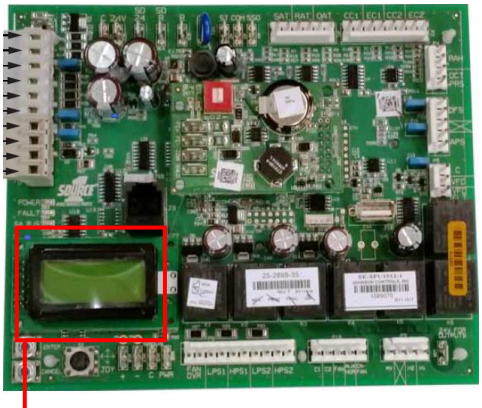

SSE Board Display Screen. 8 Characters 2 Line Display
> Will be next to parameter that can be entered and/or changed

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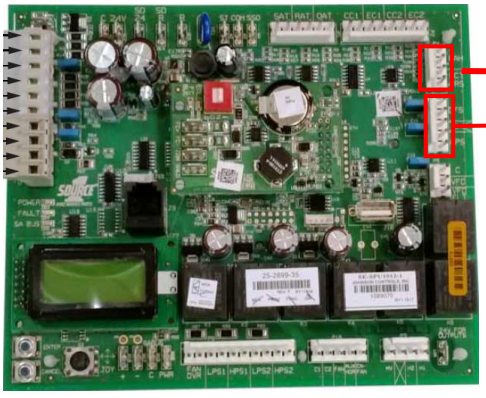

RAH= Return Air Humidity Sensor Input **0-10 VDC**
DCT PRS = Duct Pressure Sensor Input. VAV systems will require this connection **0-5 VDC**

DFS= Dirty Filter Switch Input 24VAC
APS= Air Proving Switch Input. Optional Switch for accessories that needs air proving status **24VAC**

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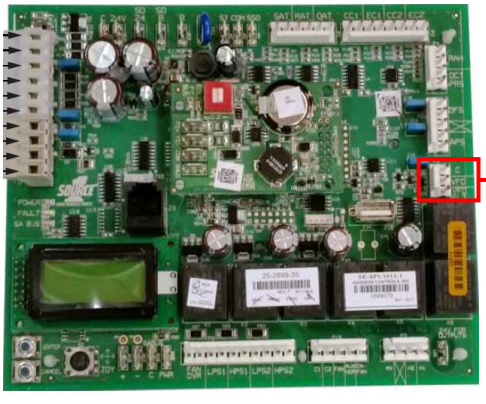

C=Common to VFD drive
VFD= The **2-10 VDC** signal to VFD drive
VFD FLT= **24 VAC** from the VFD to the SSE board to display a VFD alarm

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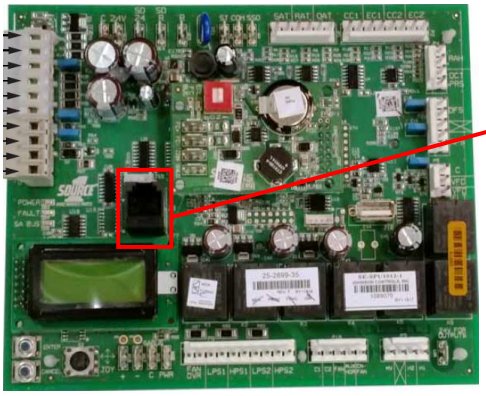

6 pin phone style connector. Map Gateway connection point

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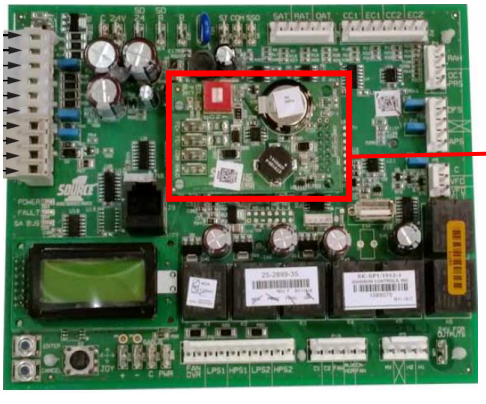

Communication sub board for. Must be present for external control of unit from BMS type systems. F/C Bus

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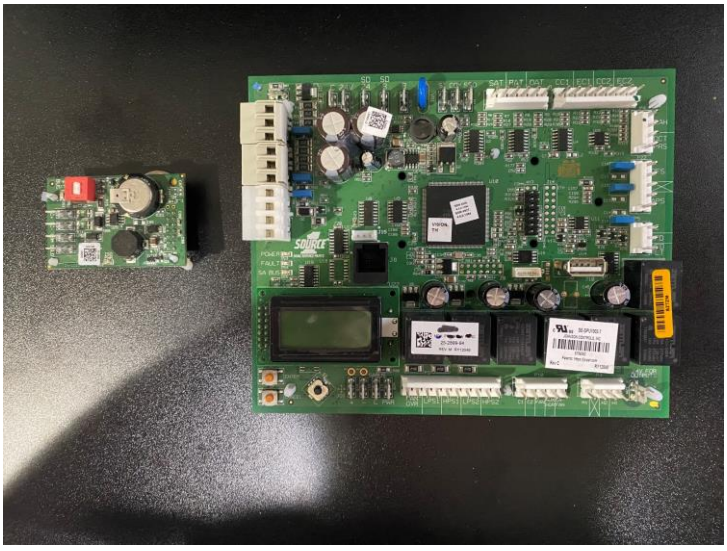

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Terminal FC BUS[1] connections on left edge of the communication board		
FC+	FC ("Field Connected") BUS BACnet MSTP communication	Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to COM; at least 0.25 volts higher than –) FC bus BACnet MSTP communication circuit
FC–	FC ("Field Connected") BUS BACnet MSTP communication	Positive of the VDC (typically, a fluctuating 1.5 to 3.5 volts reading to COM; at least 0.25 volts lower than +) FC bus BACnet MSTP communication circuit
COM	Common for the FC ("Field Connected") BUS BACnet MSTP communication circuit	Negative of the VDC FC bus BACnet MSTP communication circuit
SHLD	Shield for the FC ("Field Connected") BUS BACnet MSTP communication circuit	Earth ground reference of the cable to prevent interference on the FC bus BACnet MSTP communication circuit
Item Selector in red housing at left on top edge of the communication board		
EOL switch	End Of Line selector switch for the FC BUS BACnet MSTP communication circuit	ON selected only for the UCB that is the terminus of the FC bus BACnet MSTP communication cable to prevent signal "bounce-back"

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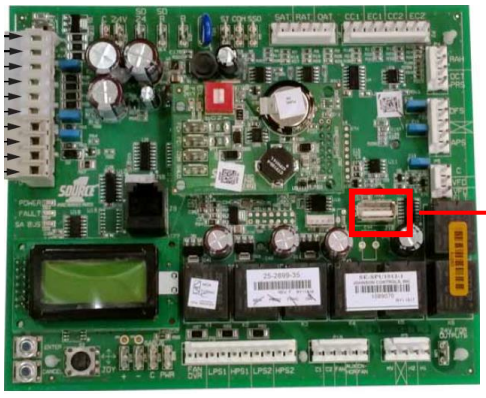

USB Connections. Used to back up the SSE board onto a USB Stick Used to restore files from USB stick to board. Used to SSE board firmware upgrading.

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Joystick/Enter/Cancel Buttons

- 3.4 and older firmware number values adjustment procedure
- Use joystick to navigate to a number value parameter
- Click joystick to the left to decrease
- Click joystick to the right to increase
- Press enter to save value
- Press cancel back to main menu

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Joystick/Enter/Cancel Buttons

- 4.0 and newer number value adjustment
- Use joystick to navigate to a number value parameter
- Press the enter button. Value will move to the right of the LCD screen
- Use joystick to move adjustable value(s) between the one/tens/hundred column. Left or Right movement
- Once the column you wish to change is blinking move the joystick down to decrease and up to increase.

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Joystick/Enter/Cancel Buttons

- Press enter when all columns are changed to the settings desired
- Press enter to confirm once prompted.
- Press cancel back to main menu

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Control Parameter Navigation and Access Summary
UCB Display vs. MAP Gateway

Item of Difference	UCB Display	MAP Gateway
Menu Navigation	through 2-line x 8-character display, ENTER button, CANCEL button and JOYstick	through a web browser using a Wi-Fi connected computer, tablet or smartphone
Parameter terms used	abbreviated "short names"	full text "long names"
Password protection and access limitations	No	Yes
Setting change initiation	JOYstick	browser pop-up window slider or keyboard
Unit Name, Model and Serial edits	No	Yes, in browser pop-up window using keyboard
Update and restoration	Yes	No
Schedule access	No	Yes
Alarms access	Up to the 5 most recent Active Alarms	Up to the 50 most recent Active Alarms occurrences, up to the 150 most recent occurrences of All Alarms
Trending	Export trend data to flash drive only	Graphically view trend data in browser
Access multiple networked units	No	Yes – if BACnet is selected for the FC Comm Mode

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SSE navigation 3.0 thru 3.2

- Status- Where status is viewed
- Alarms- View active alarms. To view alarm history a MAP device is required.
- Summary- Summary of commands the SSE is receiving
- Commissioning- Where most of the set-up menus will be. Fan control type will be in Summary
- Controller- SSE Controls location. ReLearn is in this menu selection.
- Details- Unit info M/S. Temp Sensor values ETC. Reset Lockouts is here.
- Update- Firmware version Setting/ time and day. NOT SEEN ON MAP GATEWAY
- Clone- Full Clone/Partial Clone. Want to set up multiple units the same way.
- Bacnet Objects- Units with Comm boards connected to Management systems
- Self Test/ Self Test Results- Self Test is viewed on SSE Only. Self Test and Results are viewed on both SSE and MAP device.
- Trend Views- Trends of equipment operation. NEED MAP GATWAY
- Set Schedule Set Occupancy and Un Occupied Schedules. DONE FROM MAP GATEWAY

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SSE navigation 3.3 thru 3.4

- Status- Where status is viewed
- Alarms- View active alarms. To view alarm history a MAP device is required.
- Summary- Summary of sensor values and unit info. Re-set Lockouts is here
- Commissioning- Base commissioning of the unit.
- Controller- SSE Controls location. ReLearn is in this menu selection.
- Details- Where most of the parameter set ups are located.
- Update- Firmware version Setting/ time and day. NOT SEEN ON MAP GATEWAY
- Clone- Full Clone/Partial Clone. Want to set up multiple units the same way.
- Bacnet Objects- Units with Comm boards connected to Management systems. Comm board required
- Self Test/ Self Test Results- Self Test is viewed on SSE only. Self Test Viewed on Both SSE and MAP device.
- Trend Views- Trends of equipment operation. NEED MAP GATWAY
- Set Schedule Set Occupancy and Un Occupied Schedules. DONE FROM MAP GATEWAY

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SSE navigation 4.0/4.1/4.2/4.3

- Status- Where status is viewed
- Alarms- View active alarms. To view alarm history a MAP device is required.
- Summary- Summary of sensor values and unit info. Re-set Lockouts is here
- Commissioning- Base commissioning of the unit. Commissioning mode for start up
- Controller- SSE Controls location. ReLearn is in this menu selection.
- Details- Where most of the parameter set ups are located.
- Update- Firmware version Setting/ time and day. NOT SEEN ON MAP GATEWAY
- Clone- Full Clone/Partial Clone. Want to set up multiple units the same way.
- Bacnet Objects- Units with Comm boards connected to Management systems. Comm board required
- Self Test/ Self Test Results- Self Test is viewed on SSE only. Self Test Viewed on Both SSE and MAP device.
- Trend Views- Trends of equipment operation. NEED MAP GATWAY
- Set Schedule Set Occupancy and Un Occupied Schedules. DONE FROM MAP GATEWAY

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Boot Up Sequence

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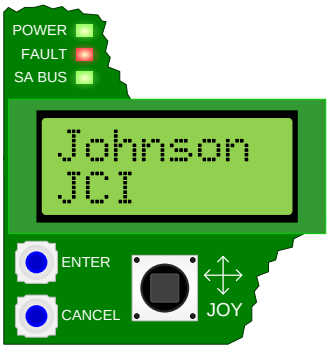
SSE Boot-up Sequence



- The green POWER LED is lit
  - Remains lit with 24 VAC at C & 24V
- The red FAULT LED will be lit, go off briefly and then flash at a rate of ½ second on / ½ second off throughout the boot-up sequence
- The green SA BUS LED will be briefly lit and go off
- The display backlight is lit
  - Other than during adjustment of settings, remains lit with 24 VAC at C & 24V
- The display will briefly show side-scrolling "Johnson Controls" text on the top line and "JCI" text on the bottom line
- Throughout the boot-up sequence, Joystick actions and presses of the ENTER and CANCEL buttons have no effect

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SSE Start Up Sequence

- After the countdown reaches 35 on the top line of the display:
  - The display will briefly show a countdown on the top line and "Operational" on the bottom line
  - The boot-up sequence is complete, and the Startup Delay Sequence is initiated

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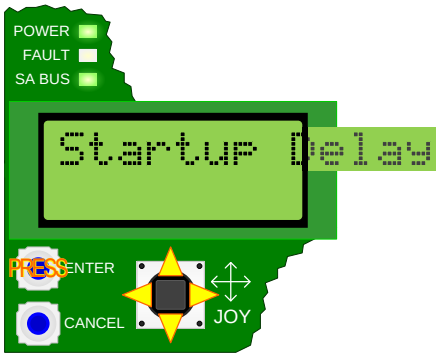
SSE Start up Delay Continued



- The display will show Level 0 of the display parameter menu with a Unit Status of "Startup Delay" throughout the Startup Delay Sequence
  - If there are no alarms in the Active Alarms register, the display will show only the Unit Status of "Startup Delay" on the top line throughout the Startup Delay Sequence
  - Any Joystick actions or press of the ENTER button will begin navigation of the display parameter menu at Level 1
  - From this point forward the indication of the red FAULT LED remains active and will be either:
    - Off to indicate that there are no alarms in the Active Alarms register
    - Flashing at a rate of ½ second double-flash / 2-½ seconds off to indicate that there is one or more alarm in the Active Alarms register

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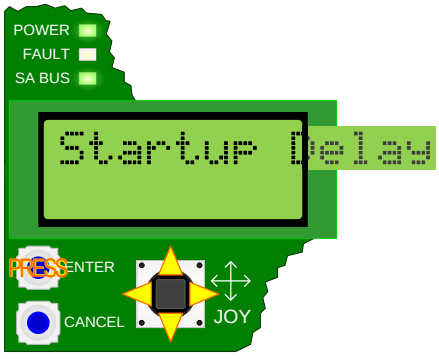
SSE Start up Delay Continued



- As the Startup Delay Sequence continues
  - Indoor blower operation is available 8 seconds after the initiation of the Startup Delay Sequence
  - Heating operation is available 2 minutes after the initiation of the Startup Delay Sequence
  - Compressor operation is available 5 to 7 minutes, depending on the Compressor Random Start feature, after the initiation of the Startup Delay Sequence
- The Startup Delay Sequence ends when the above expire

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Compressor Random Start

- Compressor Random Start feature is only effective during the Startup Delay Sequence
  - Prevents simultaneous compressor starts following a power outage on sites with multiple units
- The Compressor Random Start feature adds a varying 0 to 120 seconds to the 5-minute compressor Anti-short Cycle Delay timer
  - The combination of the Compressor Random Start and compressor Anti-short Cycle Delay begins timing from the initiation of the Startup Delay Sequence

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Pushing Firmware on Boot Up

- Once the SSE board is communicating to any accessories (Economizer, Expansion boards) it will immediately start pushing the firmware to that device
- Board firmware and Accessory firmware(s) MUST match.
- May take up to 10-20 minutes longer.
- Once Firmware is pushed the SSE board will do another re-boot.
- If factory installed accessory, then firmware most likely will match.
- **This will happen on a board replacement too.**

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Circuits and Thermistors

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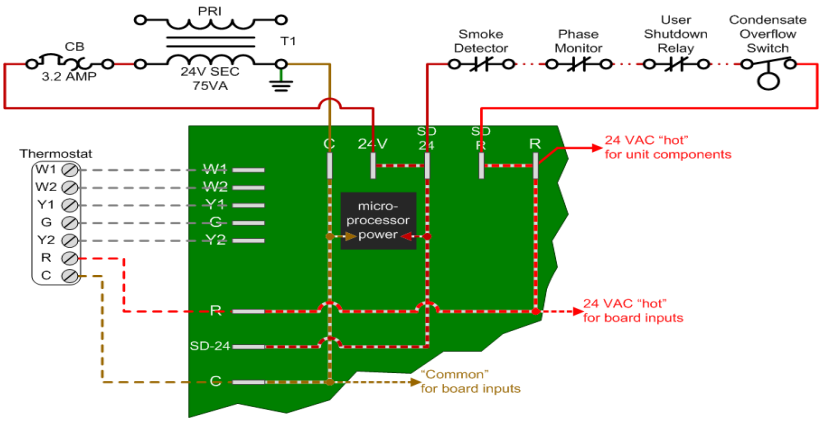
Control voltage and Smoke detector circuit



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SSE Voltage Monitoring

- UCB "24V" terminal
  - Less than 18 volts – all outputs turned off, reboot when voltage returns
- UCB "24V FOR OUTPUTS" terminal (may be sourced from a 2nd transformer)
  - Less than 20.4 volts – additional outputs prevented
  - Less than 18 volts – all outputs turned off
- Prevents contactor/relay chatter due to
  - Reduced line voltage
  - 208/230-volt transformer tap left "as shipped" in 230-volt applications
  - 24-volt shorts/overload

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SSE Voltage Monitoring

- Binary inputs
  - ≈ 12 VAC or more to pin / terminal is “On”
  - ≈ 8 VAC or less to pin / terminal is “Off”
- Analog inputs
  - 0.05 VDC or less to pin / terminal is too low
  - 5 & 10 VDC inputs: nominal max + 0.05 VDC or more to pin / terminal is too high
  - Thermistor inputs: 3.620 VDC or more to pin / terminal is too high (cold)
    - Open circuit: 3.625 VDC

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Thermistors

- OAT
  - Used in all applications of SSE
- RAT
  - Used in package unit applications of SSE
  - “Relearned away” (no thermistor connected) in split system applications of SSE
- SAT
  - Used in package unit applications of SSE
  - “Relearned away” (no thermistor connected) in split system applications of SSE
    - SAT input required when Thermostat Only Control is set to No
- EC#
  - Thermistor used in package unit applications of SSE
  - 10,000 Ω resistor used in split system applications of SSE
- CC#
  - Required for SSE heat pump defrost

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Thermistor Values

SSE Thermistor Sensor Temperature vs. Volts DC vs. Resistance

Note for Field usage: expect reading variances up to ±5% due to inherent accuracy tolerances of test instruments

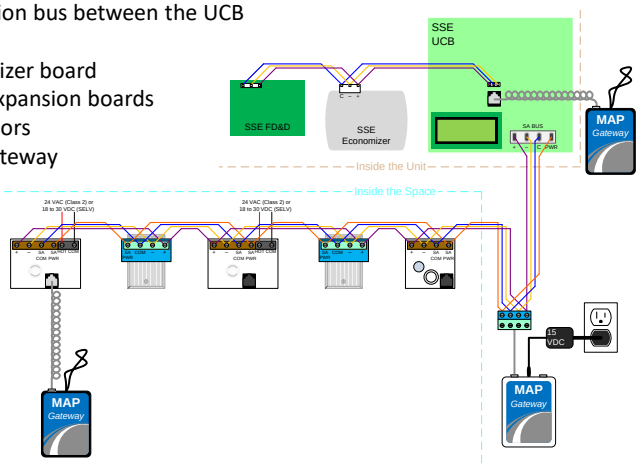
Temperature °F	Volts DC	Resistance Ω	Temperature °F	Volts DC	Resistance Ω
? out of range high	open circuit	infinite	75	1.51	10501
	3.625		80	1.41	9298
-40	3.41	330073	85	1.32	8250
-35	3.38	276915	90	1.23	7332
-30	3.34	232613	95	1.14	6530
-25	3.30	195716	100	1.06	5827
-20	3.25	164994	105	0.99	5209
-15	3.19	139404	110	0.91	4665
-10	3.13	118050	115	0.85	4184
-5	3.07	100260	120	0.78	3759
0	3.00	85398	125	0.73	3382
5	2.92	72950	130	0.67	3048
10	2.84	62495	135	0.62	2751
15	2.75	53685	140	0.57	2488
20	2.66	46240	145	0.53	2252
25	2.56	39929	150	0.49	2042
30	2.46	34565	155	0.45	1855
35	2.36	29998	160	0.42	1686
40	2.25	26099	165	0.39	1535
45	2.14	22763	170	0.36	1399
50	2.03	19900	175	0.33	1277
55	1.93	17435	180	0.31	1168
60	1.82	15309	185	0.29	1070
65	1.71	13472	190	0.27	980
70	1.61	11881	? out of range low	0.00 short circuit	0

- Type III – 10,000 Ω @ 77°F Negative Temperature Coefficient
- Thermistor Chart of Tech Training materials

45

SA BUS

SA = “Sensor/Actuator”
Communication bus between the UCB and…
- Economizer board
- Other expansion boards
- NetSensors
- MAP Gateway



46

Service Tip

- Check SA BUS wiring polarity, 24 VAC power phasing of UCB and expansion boards if
  - SSE expansion board or NetSensor is not recognized within ≈30 seconds
  - There is “phantom” operation – the output indicates On but is not
  - In-range sensor input(s) indicate failure
  - Closed switched (binary) inputs indicate open
  - There are low voltage alarms with sufficient 24 VAC power present
- These symptoms could be caused by the SA BUS communication signal being “pulled down” by wiring errors

YORK

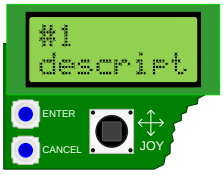
47

Using Board level Navigations

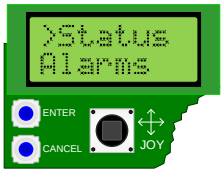
YORK

48

SSE Display Menu Navigation

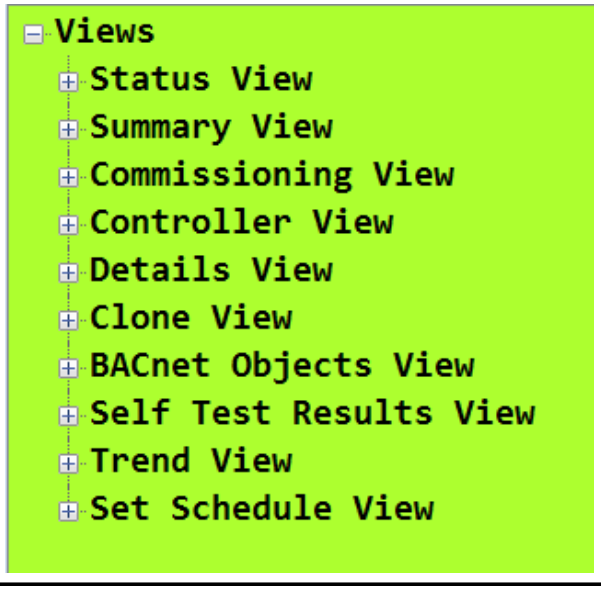


- Display at navigation Level 0 of the parameter menu
  - Repeat presses of the CANCEL button returns to Level 0
- ENTER button press or JOYstick movement goes to navigation Level 1 of the parameter menu



- Display at navigation Level 1 of the parameter menu

Sample View of SSE 3.3-4.3 Menu Structure



Sample view of SSE 3.3-4.3 Menu Structure

51

Demons are in the Details

- 3.3/3.4/4.0/4.1/4.2/4.3 Firmware Details sub-Menu is where most of your set-ups will be
- Once entered the Details Menu the equipment sub menus are the next level.
- Occupancy Status (OCC) /Cooling (Clg) /Heating (Htg) Indoor Fan (FAN) / Economizer (ECON) /FanVFD /Hot Gas Reheat (HGR) /24 Load Shed (T24LoadShed) ETC.

*** Fan VFD is for VAV style fan control ONLY*****

Fan - Is for single speed applications and Fixed Variable units with VFDs**

52

Demons are in the Details

- The options in the Details sub menus will be determined by the unit file.
- Examples is if unit doesn't have Hot Gas ReHeat(HGR) that sub menu will not be available.

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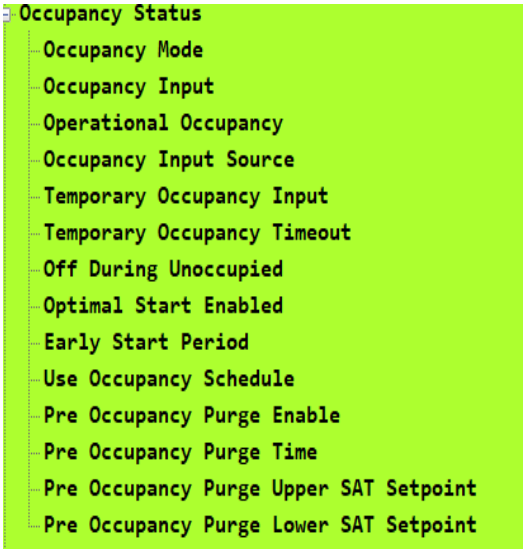
53

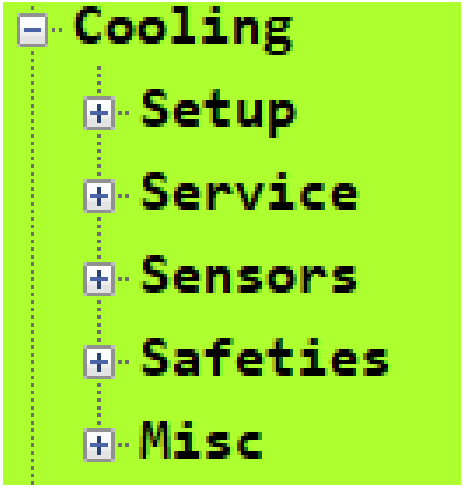
Details > Occupancy



YORK

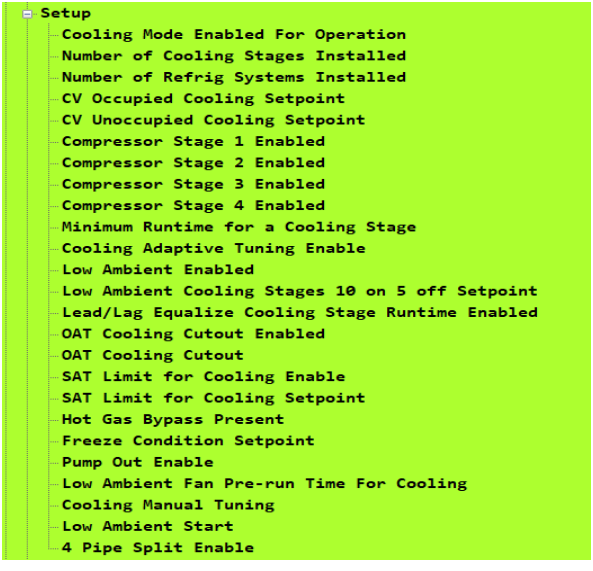
54

Details>Cooling



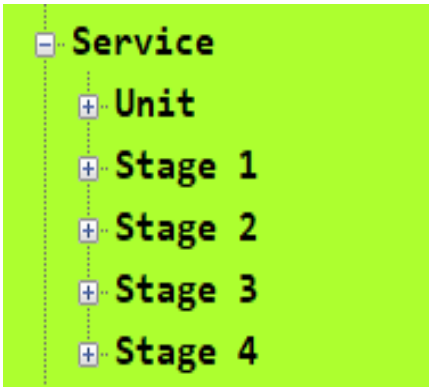
55

Details>Cooling>Set-up



56

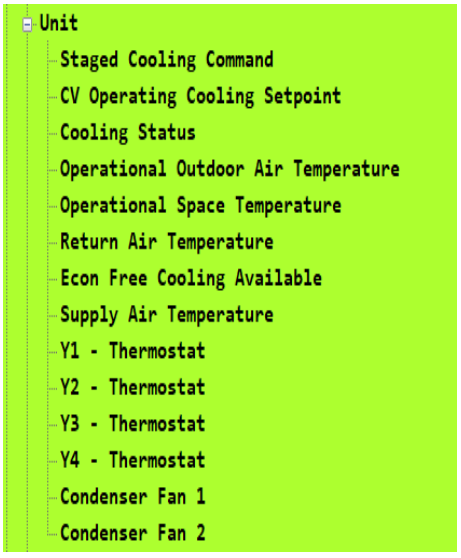
Details>Cooling>Service



YORK

57

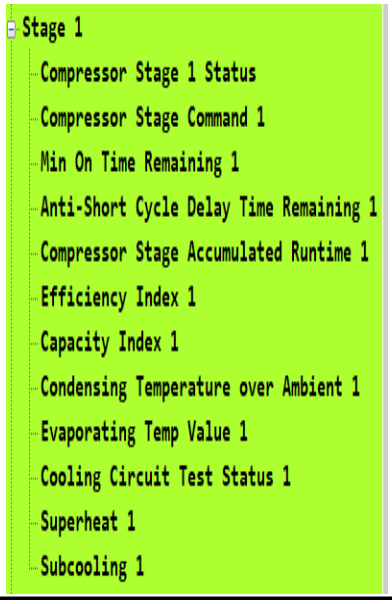
Details>Cooling>Service>Unit



YORK

58

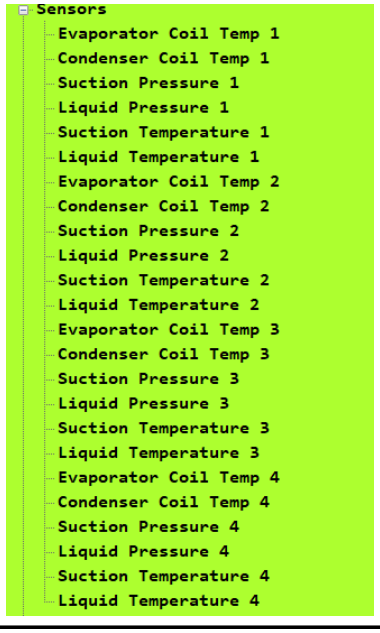
Details>Cooling>Service>Stage 1-4



YORK

59

Details>Cooling>Sensors



YORK

60

Details>Cooling>Safeties

- Safeties
  - High Pressure Limit 1
  - High Pressure Lockout 1
  - Low Pressure Limit 1
  - Low Pressure Lockout 1
  - Freeze Condition 1
  - Freeze Condition Lockout 1
  - High Pressure Limit 2
  - High Pressure Lockout 2
  - Low Pressure Limit 2
  - Low Pressure Lockout 2
  - Freeze Condition 2
  - Freeze Condition Lockout 2
  - High Pressure Limit 3
  - High Pressure Lockout 3
  - Low Pressure Limit 3
  - Low Pressure Lockout 3
  - Freeze Condition 3
  - Freeze Condition Lockout 3
  - High Pressure Limit 4
  - High Pressure Lockout 4
  - Low Pressure Limit 4
  - Low Pressure Lockout 4
  - Freeze Condition 4
  - Freeze Condition Lockout 4

YORK

61

Details>Cooling>Misc

- Misc
  - Maximum Temperature / Humidity Setpoint Offset
  - Temperature/Humidity Setpoint
  - Temperature/Humidity (Return) Control Enable
  - Operational Space Humidity
  - CV Occupied Cooling Setpoint
  - CV Operating Cooling Setpoint
  - Temperature / Humidity Value per Degree Offset

YORK

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Details>Heating>Set Up

- Setup
  - Heating Mode Enabled For Operation
  - Number of Heating Stages Installed
  - Heating Control Type
  - CV Occupied Heating Setpoint
  - CV Unoccupied Heating Setpoint
  - Heating Adaptive Tuning Enable
  - SAT Air Temp Limit for Heating Enabled
  - SAT Air Temp Limit For Heating Setpoint
  - Outdoor Air Temp Heating Cutout Setpoint
  - Number of Gas Valves Installed
  - Number of Limit Switches
  - Low Limit Enable
  - Low Limit Upper SAT Setpoint
  - Low Limit Lower SAT Setpoint
  - Heating Manual Tuning

YORK

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Details>Heating>Service

- Service
  - Staged Heating Command
  - CV Operating Heating Setpoint
  - Heating Status
  - Operational Outdoor Air Temperature
  - Operational Space Temperature
  - Return Air Temperature
  - W1 - Thermostat
  - W2 - Thermostat
  - W3 - Thermostat
  - G - Thermostat
  - Heating Stage 1 Status
  - Heating Stage Command 1
  - Heating Stage 1 Min On Time Remaining
  - Heating Stage 1 Anti-Short Cycle Delay Time Remaining
  - Heating Stage 1 Accumulated Runtime
  - Heating Stage Command 2
  - Heating Stage 2 Status
  - Heating Stage 2 Min On Time Remaining
  - Heating Stage 2 Anti-Short Cycle Delay Time Remaining
  - Heating Stage 2 Accumulated Runtime
  - Heating Stage Command 3
  - Heating Stage 3 Status
  - Heating Stage 3 Min On Time Remaining
  - Heating Stage 3 Anti-Short Cycle Delay Time Remaining
  - Heating Stage 3 Accumulated Runtime

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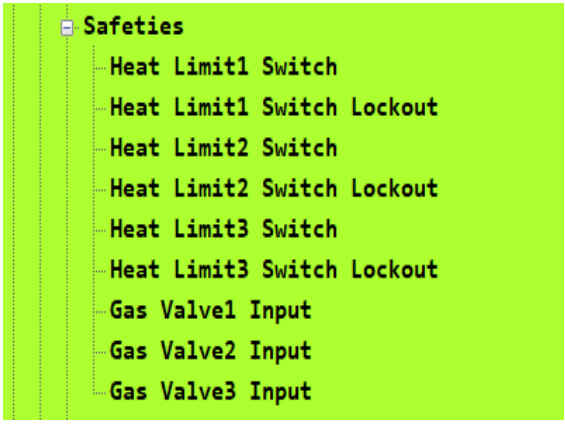
64

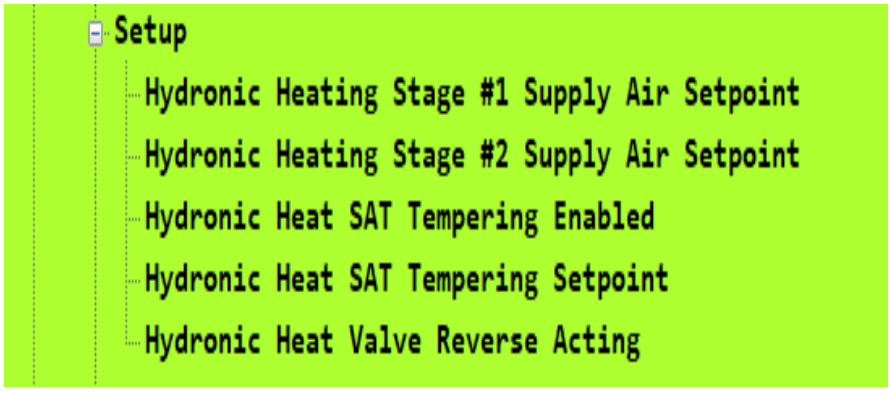
Details>Heating>Safeties



YORK

65

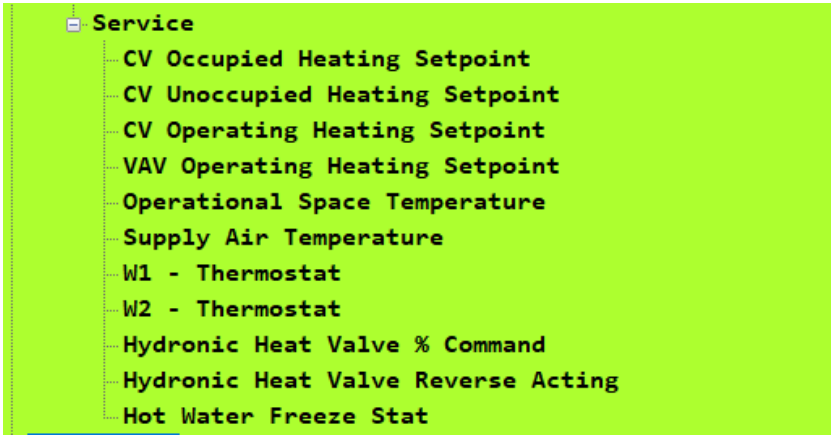
Details>Heating>Proportional>Set up



YORK

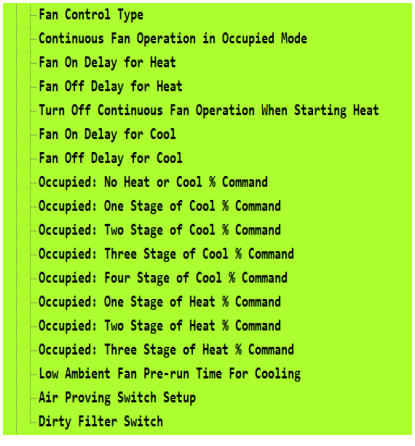
66

Details>Heating>Proportional>Service



67

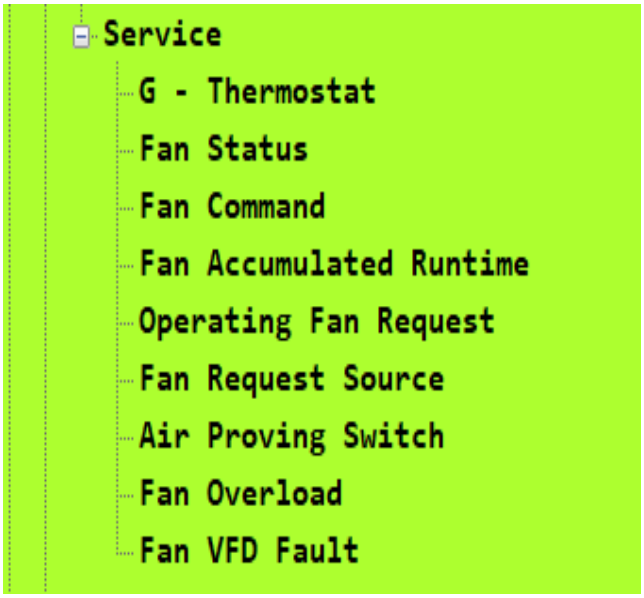
Details>Fan>Set Up



- Fan Control type selections are:
- Single Speed
- Fixed Variable
- Variable Speed
- Not Used
- For Split systems, the fan control type needs to be changed from Single Speed to FIXED VARIABLE

68

Details>Fan>Service



YORK

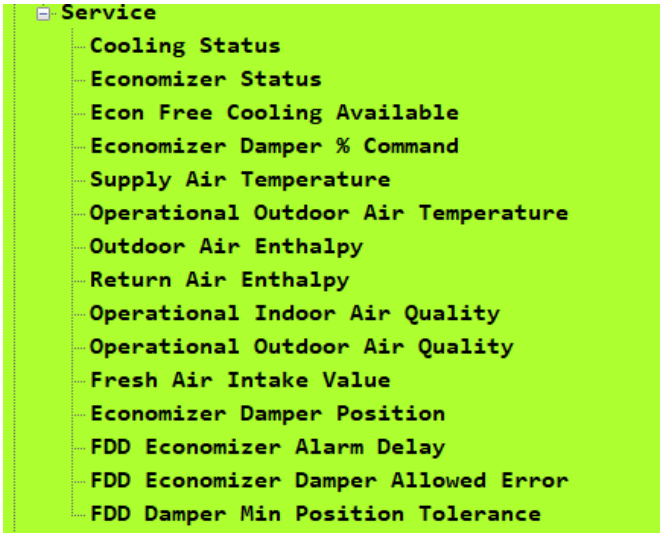
69

Details>Economizer>Set Up

YORK

70

Details>Economizer>Service



YORK

71

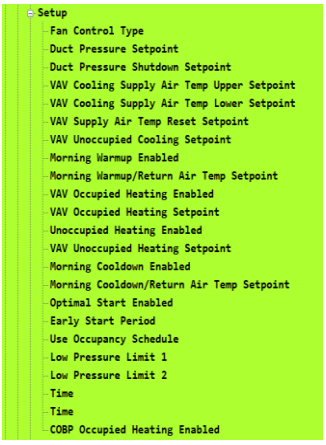
Details>Economizer

- Testing the damper can be done by changing min position from 0% to 100% for firmware 3.4 and earlier
- If unit has 4.0-4.3 testing economizer can be done thru commissioning mode.

YORK

72

Details>Fan VFD>Set Up

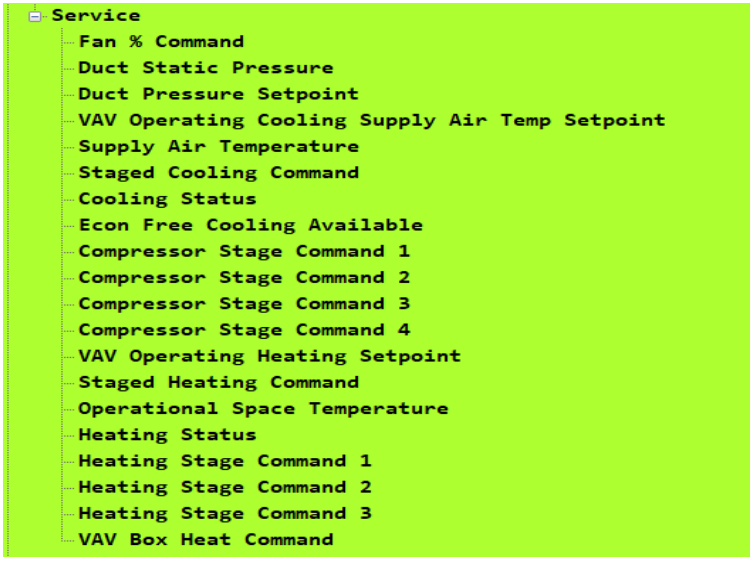


- This is for VAV style systems
- Accessory(s) needed are air proving switches, pressure transducers etc.
- Transducer is shipped with unit.
- Hose and tips are field supplied.

YORK

73

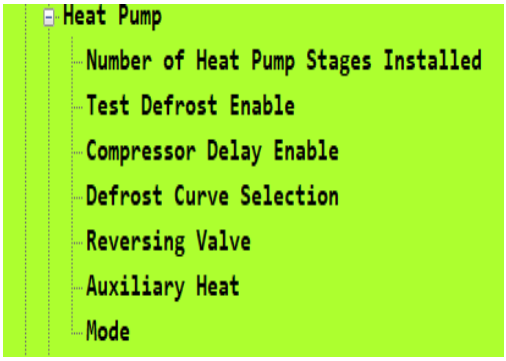
Details>Fan VFD>Service



YORK

74

Details>Heat Pump



- Defrost Curves are 1-6.
- Curve 1 is least aggressive.
- Curve 6 is most aggressive
- Factory setting is Curve #1
- May have to increase in colder areas
- Curve 5 has the longest run time logic before defrost.

YORK

75

Updated 4.0-4.3 Firmware

Commissioning Mode

YORK

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4.0-4.3 Firmware Quick Start Menu

- Commissioning>Quick Start
- A quick view of unit set ups.
- Cooling/heating enabled, cooling/heating stages,# of refrig systems, T-Stat only, Fan control type, SAT/RAT/OAT temp values, Cooling/Heating Status, Unique Equipment Identifier

YORK

77

4.0-4.3 Commissioning Mode

- Commissioning>Commissioning Mode
- Where you can start up the unit without any Tstat or BMS control
- Compressor Stages, Heating Stages, Indoor Fan, Condenser Fans, HGR, Economizer, Power Exhaust can all be tested from the unit location.
- This mode must be enabled and there is a time limit. If more time is needed, you can extend the time
- 60 minutes is the time limit.

YORK

78

Heating Limit Cooling Operation

- This is a new parameter in 4.0/4.1/4.2/4.3 firmware
- Will allow cooling operation if the heat limit circuit is open
- Factory setting is disabled.
- Previous firmware versions when the heat limit circuit opened the cooling would lock out.
- Saves on running a no cool call for heating safety issue. Just the heat will be disabled until heat limit circuit is addressed.

YORK

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Updates

YORK

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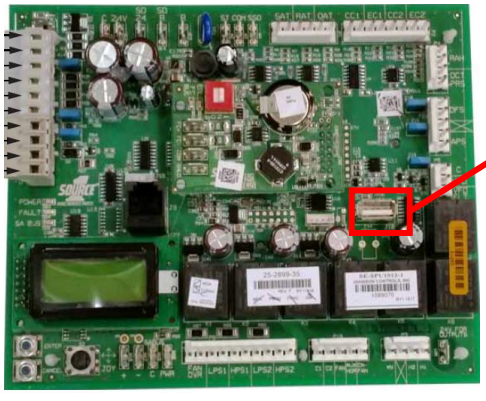
Update Sub Menus

- View Version Firmware
- Load Firmware
- Back Up
- Restore
- Full Clone
- Partial Clone
- Factory
- **Time**
- Export Trend

81



USB Connections. Used to back up the SSE board onto a USB Stick Used to restore files from USB stick to board. Used to SSE board firmware upgrading.

82

Update>View Firmware

- Scrolling on the screen will be the firmware version on the top line of display
- Bottom line will be “Firmware O.K”.
- If corrupt it will display an error message.
- Version number moves quickly. May have to watch the pattern.
- The first 2 numbers is usually all we need. But the complete number may also be required in some situations

YORK

83

Update>Load Firmware>Enter

- Firmware must be on an USB Stick
- Firmware can not be in a folder. If “no package present” error is displayed the firmware is in a folder
- File name will resemble 3.4.1.477.upgade.secusb.pkg with no folder icon with it.
- When confirm appears on screen press enter
- Process may take up to 20 minutes. Once SSE board is up graded then the firmware must be pushed to other accessories.
- FWU wait will appear with % of completion
- SSE Board will re-boot
- Perform a back up before doing upgrade

YORK

84

Update>Back Up

- Back up can only be done to an USB Stick
- Back Up name will be the serial number of unit with .csv at the end
- Multiple unit files can be stored on an USB stick. 10 files max.
- Process may take up to 5-10 minutes but generally shorter than that.
- Good practice to back up all new unit start ups. Keep USB stick in a secure location.

YORK

85

Update>Restore

- Must be restored from an USB Stick
- Restore files can be either from a backup or from York Service Manager. It is available to download from Solution Navigator.
- Restoration file MUST match unit model and serial number.
- If multiple files are on one USB be certain the > is beside file, you want to restore to the SSE board.
- Process only takes a few minutes
- SSE Board will Re Boot

YORK

86

Update>Full Clone

- Intended for Multiple similar units
- Serial numbers CAN mismatch
- Process is like doing a restore

87

Update>Partial Clone

- Intended for Multiple Unit set up
- Serial numbers CAN mismatch
- Process is like doing a restore

88

Update>Factory Reset

- Resets board to factory settings

89

Update>Time

- Where to set date/time in board
- Will need this set up if planning on using an occupancy schedule
- Will reset to default time after power outage/loss. 12:00 a.m. 1/1/2000.

90

Update>Time

- Toggle down to Update press enter
- Toggle down to Time press enter
- Hour will be first selection. Toggle the joystick left to decrease number or right to increase. Press enter to save selected value
- Move joystick down to minute. Same procedure to change value.
- Same procedure for day/month/year.
- Remember to press enter after each selection.

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Economizer

YORK

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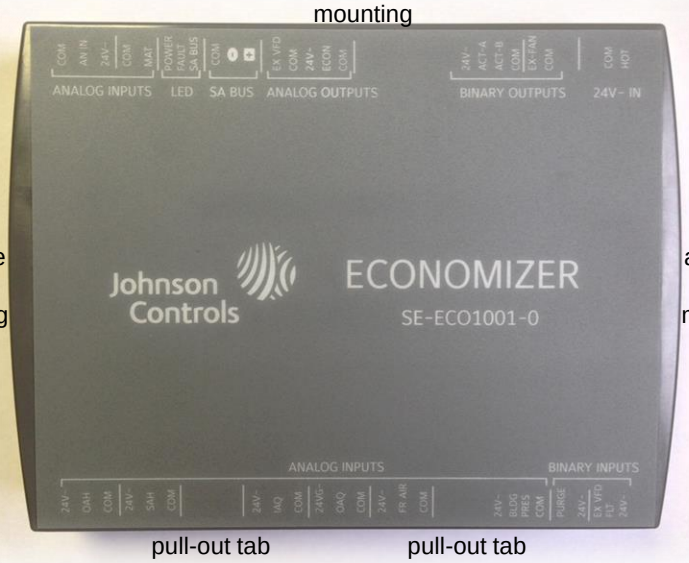
the same economizer board is used with single- or two-compressor stage UCBs

pull-out tab mounting



alternate DIN rail mounting

alternate DIN rail mounting

pull-out tab mounting

pull-out tab mounting

93

Required connection SA BUS

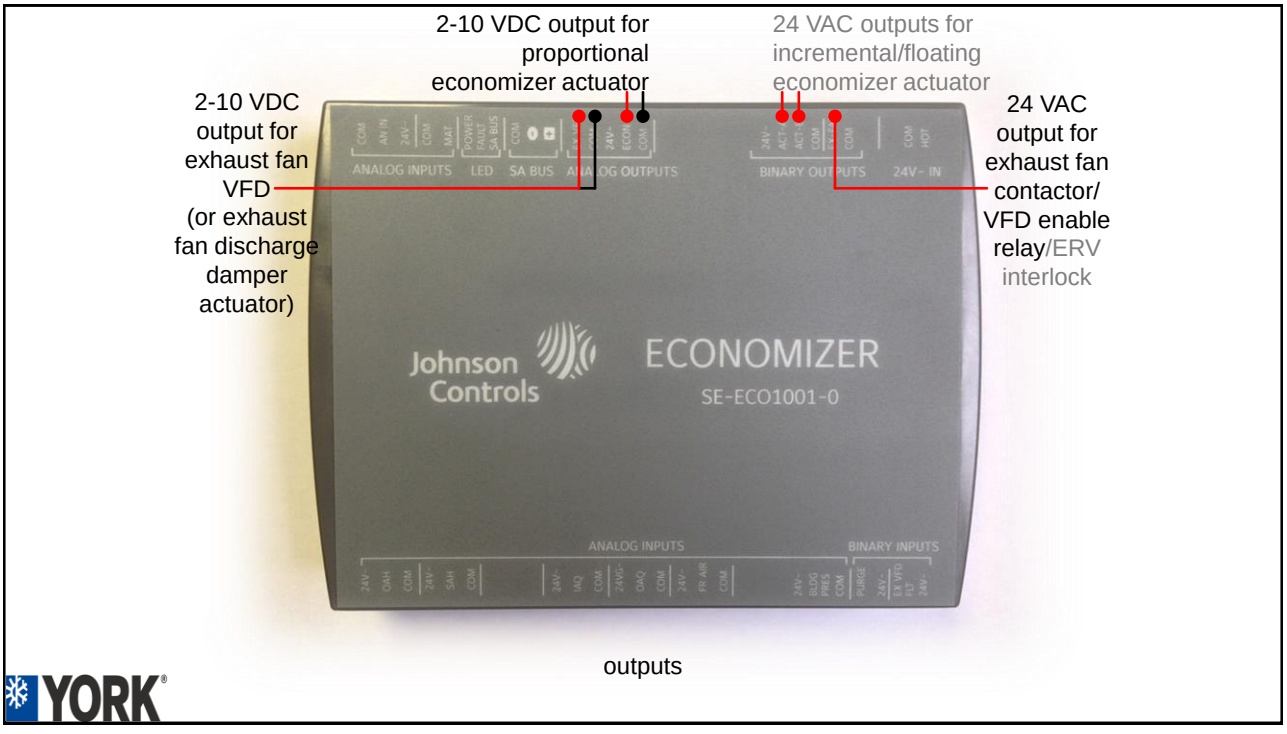
24 VAC power connections

COM must reference cabinet ground

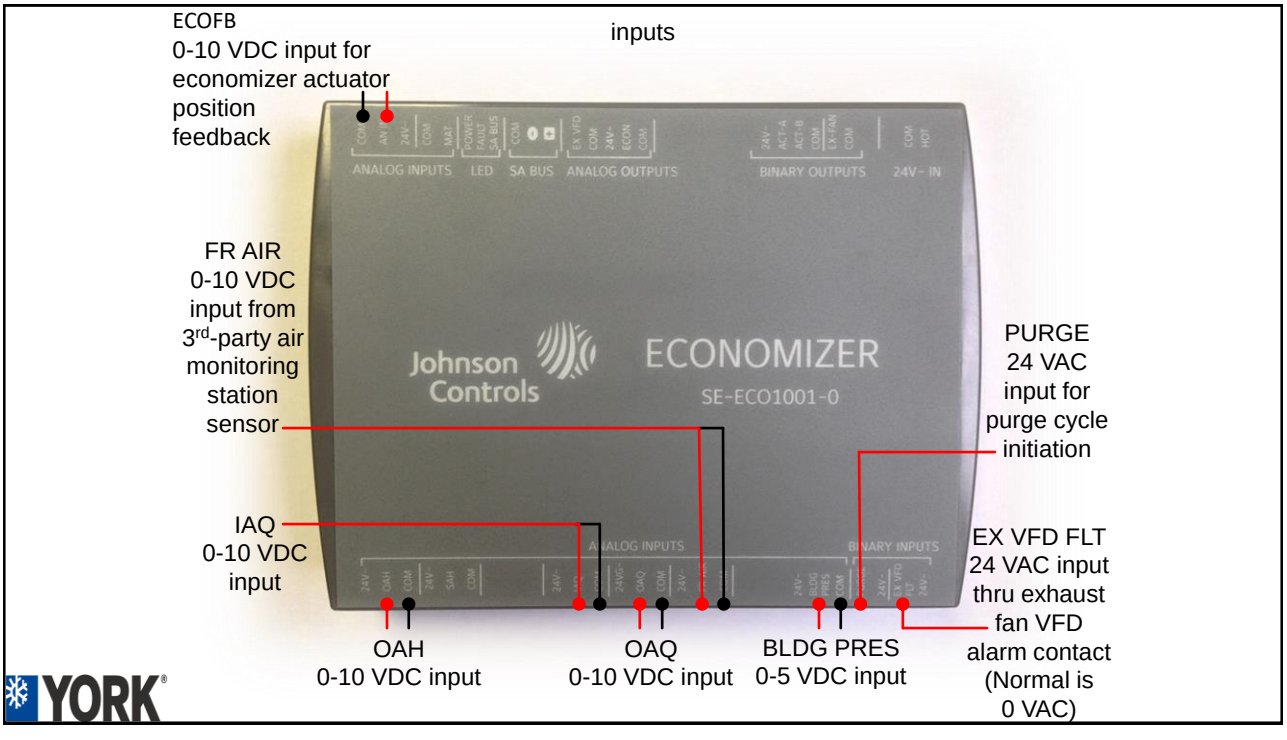
LEDs below cover

24 VAC power distributed for economizer input & output devices

94


2-10 VDC output for proportional economizer actuator
24 VAC outputs for incremental/floating economizer actuator
2-10 VDC output for exhaust fan VFD (or exhaust fan discharge damper actuator)
24 VAC output for exhaust fan contactor/ VFD enable relay/ERV interlock
ANALOG INPUTS
LED
SA BUS
ANALOG OUTPUTS
BINARY OUTPUTS
24V~ IN
Johnson Controls
ECONOMIZER
SE-ECO1001-0
ANALOG INPUTS
BINARY INPUTS
outputs

95


ECOFB
0-10 VDC input for economizer actuator position feedback
inputs
FR AIR
0-10 VDC input from 3rd-party air monitoring station sensor
PURGE
24 VAC
input for
purge cycle
initiation
IAQ
0-10 VDC
input
EX VFD FLT
24 VAC input
thru exhaust
fan VFD
alarm contact
(Normal is
0 VAC)
OAH
0-10 VDC input
OAQ
0-10 VDC input
BLDG PRES
0-5 VDC input
ANALOG INPUTS
LED
SA BUS
ANALOG OUTPUTS
BINARY OUTPUTS
24V~ IN
Johnson Controls
ECONOMIZER
SE-ECO1001-0
ANALOG INPUTS
BINARY INPUTS

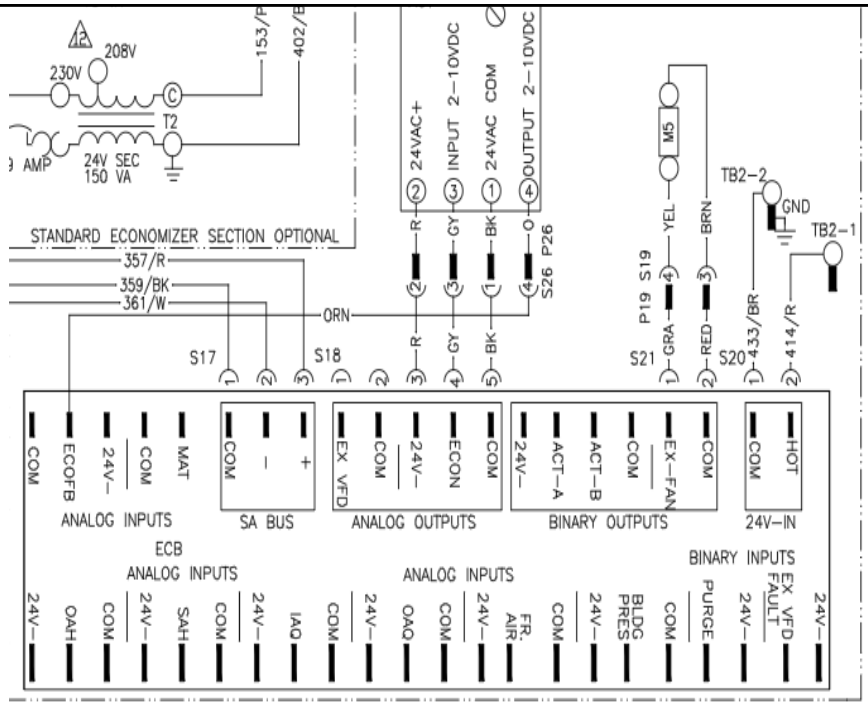
96

valid inputs without associated function in current revision

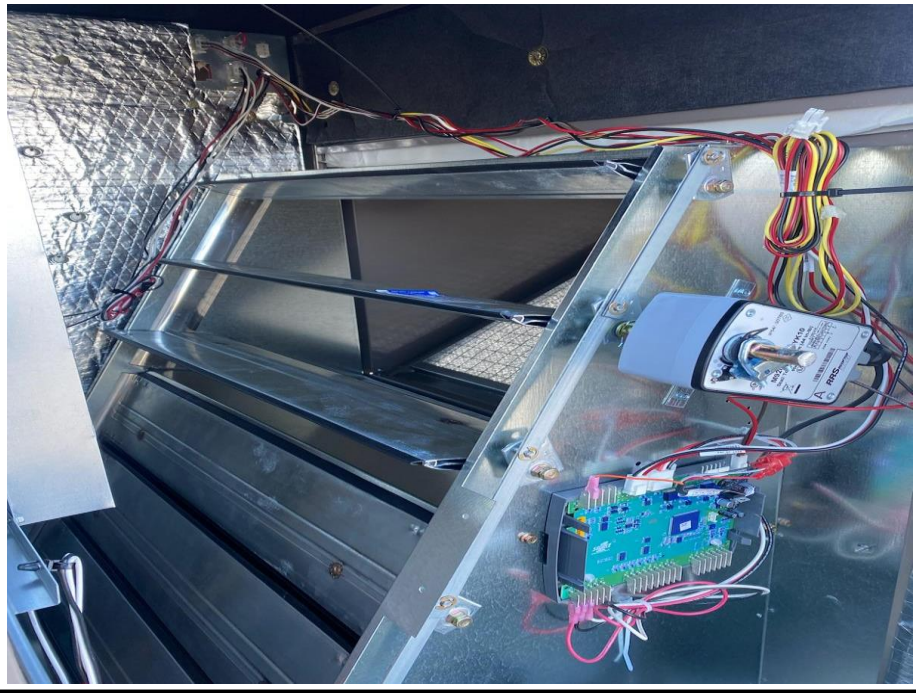
Mixed Air Temperature thermistor input

Supply Air Humidity 0-10 VDC input

97



98



99

Map Gateway

100

Map Gateway

MAP Gateway LEDS

LED	Indication	Description
POWER	On	15 VDC power supplied by SA BUS or separate "wall wart" power
	Off	15 VDC power not present
FAULT	Off	no faults, normal operation
	On steady	MAP hardware fault, firmware fault or reset in progress
	Slow flicker	MAP boot-up sequence in progress
	Medium flicker	MAP firmware update in progress
	Rapid flicker	MAP fault
SA/FC BUS	Off	receiving SA BUS data
	On	sending SA BUS data
	Flicker	SA BUS data transmission
ETHERNET (not active in early release)	Off	ethernet communication not established
	On	ethernet communication established
	Flicker	ethernet data transmission
Wi-Fi	Off	no Wi-Fi signal
	Scrolling	awaiting Wi-Fi connection
	On	number of LEDs on indicate signal strength of Wi-Fi connection established

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Map Gateway

- Allows remote access to SSE board from 300’ line of sight of outdoor
- Powered from SSE “phone jack connection/Field Controller Bus/External power supply/Micro USB connector
- Two configurations portable and stationary. Portable is the most used.
- Will need a computer/tablet or smart phone
- Connects thru a web browser (Safari/Google Chrome/Amazon Silk Etc.)
- Multiple sub menus on the same screen.

YORK

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New Map Re-set

- We have had reports of the factory password not allowing access into the Map Device
- A password re-set is required to change it back to the factory password
- Then a new password is required to complete initial log in.

YORK

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Map Device Re-Set

Table 2: Reset Button Operation and Descriptions

Reset Function	Reset Operation[1]
Reset Wi-Fi and Ethernet Settings	1. 1.Press and hold the reset button for 2 seconds. The Fault LED displays Slow Flicker behavior. 2. 2.Release the reset button within 3 seconds. The Fault LED continues Slow Flicker behavior. 3. Within 5 seconds, press the reset button again, and then immediately release it to confirm that you wish to reset Wi-Fi and Ethernet settings. (If you do not press the reset button to confirm within 5 seconds, the reset operation is canceled.) The Wi-Fi (SSID and pass-phrase) and Ethernet settings are reset to factory defaults. The LEDs stop flickering for 2 seconds, and then the LEDs return to normal operation, based on the current state of the device.
Reset to Factory Defaults[2]	1. 1.Press and hold the reset button for 6 seconds. After 2 seconds the Fault LED displays Slow Flicker behavior. This changes to Fast Flicker behavior after an additional 4 seconds of holding the reset button. 2. 2.Release the reset button within 3 seconds of seeing Fast Flicker behavior. The Fault LED continues Fast Flicker behavior. 3. 3.Within 5 seconds, press the reset button again, and then immediately release it to confirm that you wish to reset to factory defaults. (If you do not press the reset button to confirm within 5 seconds, the reset operation is canceled.) 4. All unit settings are reset to factory defaults. The LEDs stop flashing for 2 seconds, and then the LEDs return to normal operation, based on the current state of the device.

1. For information on LED designations and flicker behavior, see Table 3.
2. Resets all unit settings, including user profiles.

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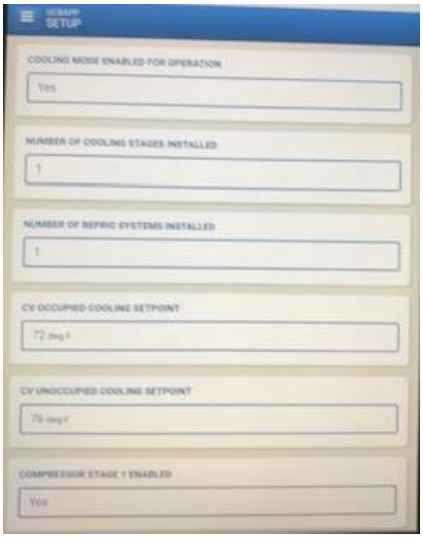
Map Device ScreenShot



YORK

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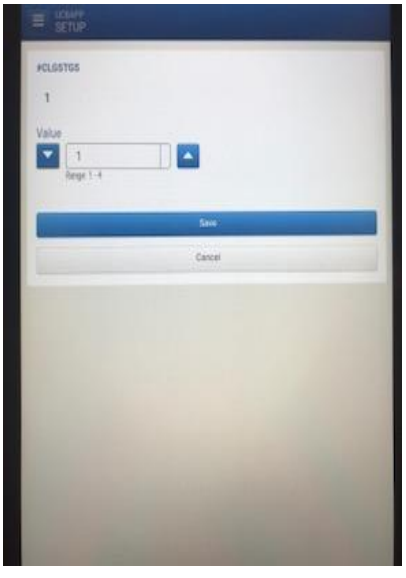
Map Device Screen Shot



YORK

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Question or Comments?

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