Surveillant Evaporator Control

Alarm Troubleshooting Guide

HT-ALA-0313A

Alarms Status Menu

Parameter Name (V02.026 -V02.029)	Parameter Code (V 02.028 R15)	Alarm Description	Corrective Action
NO ALARM	**NOAL**	No alarms active, everything is running correctly	No action necessary
PRESSURE SENSOR	**PRSA**	**Suction pressure sensor is shorted, open or pressure is out of range** • Controller is reading a short in the sensor. • Controller is reading an open in the sensor. • Pressure read by the controller is above 150* psia	• **Verify the connector is inserted in the proper position in the board.** • **Verify the pressure transducer is properly attached to the pressure transducer cable.** • **Verify the voltage between the Black and Red input to the board is +5 VDC. Measure the voltage between the Black and Green positions. Enter that number into the following formula.** $\frac{(\text{voltage read} - 0.5\text{V}) \times 150^{*}\text{psia}}{4\text{V}}$ = actual pressure read (verify with gauges) * 300 psig or 500 psig depending on range of pressure transducer
SUCTION TEMP SENSOR **AIR TEMP SENSOR** **COIL TEMP SENSOR** **AUX TEMP SENSOR**	**STSA** **ATSA** **CTSA** **T4SA**	**Temperature Sensor Alarms is shorted or open** • Controller is reading a short in the sensor. • Controller is reading an open in the sensor.	• **Verify the connector is inserted in the proper position in the board.** • **Verify the senor wire is correctly inserted into the pluggable connector.** The bare stranded wire should be inserted so the wire is directly touching the gate of the connector. If the gate is contacting the insulation of the wire, it will not allow the controller to read the sensor. • **Unplug the connector and verify the resistance reading of the sensor matches the temperature vs. resistance table.**

Temperature °F	Ohms
-22	19480
-4	12110
14	7763
32	5114
50	3454
68	2387
77	2000
86	1684
104	1231
122	885

If the sensor does not match the table, check to see if the sensor has been extended.

If extended, check the connection between the sensor and extension to verify continuity.

If the sensor has not been extended or continuity is present, replace the sensor.

• **If everything appears to be within the proper operating range, verify the sensor is operating properly by replacing a non-alarming sensor with the sensor in question.**
If the test sensor is not read by the controller, replace the controller.

If the new sensor is read by the controller, insert the sensor in question into the newly vacated sensor location.

If the sensor still doesn't read properly, replace the sensor.
Once resolved, return sensor to appropriate location on controller.

Surveillant Evaporator Control

Alarm Troubleshooting Guide

Parameter Name (V02.026 -V02.029)	Parameter Code (V 02.028 R15)	Alarm Description	Corrective Action
HIGH SUPERHEAT	**HISH**	• High superheat alarm is only active when an EEV is being applied to a system. • Superheat 2 Fahrenheit degrees above superheat setpoint for 90 mins.	• **Check the system suction pressure using either the front panel or the Master View.** • **Validate the suction pressure is within the range of the system design.** • **Verify refrigerant type.** • **Verify the valve position.** If the valve is fully open, verify the valve is operating properly using the front panel. If the alarm is caused by a system condition. Correct the system condition causing the alarm and return to normal operation.
LOW SUPERHEAT	**LOSH**	• Low superheat alarm is activated when the superheat is less than 3 Fahrenheit degrees for 5 minutes, or if EEV selected 2 Fahrenheit degrees below superheat setpoint for 90 mins.	• **Check system conditions.** When the system is using a mechanical expansion valve, the coil must be thoroughly inspected. One cause of low superheat is diminished load due to low air movement across the coil. Check to see that there is not excessive frost build-up on the coil on both the air entering and air exiting sides of the coil. The fans should be turned off to allow the best viewing. • **Verify all fans are moving.** It is not uncommon to see all of the fans off due to a mechanical service switch, in the space, being inappropriately used. If only one fan is not moving, verify whether the fan is operation. Replace the motor if necessary. • **Check EEV.** If an Electronic Expansion Valve (EEV) is being used, in addition to the steps above, check the valve to ensure it is moving properly. From the front panel, the valve may be exercised open and closed. Move the valve to 0 percent open and verify the flow of refrigerant has been stopped. This can be seen by the suction pressure dropping and the system turning off. Use the **Master View** or a gage set to verify the pressure drop. If it is apparent the valve is not stopping the flow, reinitialize the valve. This can be done by clicking the reset button on the **Master View's Settings** page. If the **Master View** is unavailable, power may also be cycled to the controller.
HIGH AIR TEMP	**HITA**	**High Air Temperature Alarm** is caused by the temperature being above the **High Temp Alarm Offset** greater than the amount time in the **High Temp Alarm Delay**. Both of these variables can be set by the user. The default from the factory is 10 Fahrenheit degrees above the setpoint for 60 minutes.	• **Check air sensor.** • **Investigate condition.** To resolve the **High Air Temperature Alarm** will require investigation. First ask the staff if the door has been propped open for an extended period of time due to loading, unloading, inventory, etc. If this is not the case, begin to troubleshoot the system. • **Check the evaporator coil to verify the coil is free from excessive frost.** • **Check the fans to ensure all fans are rotating properly.** Review the variables read by the controller including: **Room Temp**, **Coil Temp**, **Superheat**, etc.
LOW AIR TEMP	**LOTA**	Low Air Temperature Alarm is caused by the temperature being below the **Low Temp Alarm Offset** greater than the amount time in the **Low Temp Alarm Delay**.	• **Check variables defined by the user.** The default from the factory is 4 Fahrenheit degrees below the setpoint for 10 minutes. • **Verify system will pumpdown using Manual Compressor Control in the Manual Menu.**
EXCESS DEFROST	**XSDF**	32 defrosts in a 48 hour period	• **Verify heaters are working properly.** • **Verify room setpoint is not lower than 36°F for air defrost.** • **Verify coil sensor location.** • **Check solenoid valve.**

Surveillant Evaporator Control

Alarm Troubleshooting Guide

Parameter Name (V02.026 -V02.029)	Parameter Code (V 02.028 R15)	Alarm Description	Corrective Action
DEFR TERM ON TIME	**DTTA**	Defrost Termination on Time alarm is triggered when the system has not reached termination temperature during 2 consecutive defrost cycles.	• **Verify heaters are working properly.** • **Check coil for ice** • **Verify coil sensor location.** • **Verify door has not been left open for an extended period by viewing graphs page.** • **Check solenoid valve.**
DOOR SWITCH	**DRSA**	The Door Switch alarm is activated when the room temperature is 5 Fahrenheit degrees above setpoint and the door has been open past the time set in the **Door Alarm Delay** parameter.	• **Verify the door is closed.** • **Verify the switch is in proper working order.** • **Verify the circuit is continuous using a multimeter.** • Move the two pieces of the switch apart more than 6 inches. Measure the continuity. It should be open at this time. If the switch is operating in the opposite manner, the switch is an open switch and the controller should be reconfigured appropriately, **DI Mode** as **Door Switch**, **DI State** as **Closed.** If the switch is verified to be inoperable, replace the switch. If the switch is operating properly, proceed to the next step. • **Verify which digital input is being used for the switch.** Verify the connection of the switch wires to the connector and the connector is properly inserted into the desired position in the board. • **Review the controller's digital input settings.** Either through the front panel or using the **Master View,** verify the digital input being used for the door switch is set to door switch. • **Verify the Digital Input State matches the switch being used (open when door open & closed when door closed).**
COMMUNICATION ERROR	**COMA**	ONLY FOR BONDED CONTROLLERS: The Communication Error is generated when the Surveillant control fails to communicate with its other bonded controllers.	• **Verify communication to each individual controller in alarm by entering the IP address into a web browser, i.e. Internet Explorer, Chrome, Firefox, Safari, etc.** • **Access the network page and click current values.** • **All the controllers in the bonded group should be present.** • **Check Network cables.** • **Break bond and rebond each controller.** • **If unable to resolve, call HTPG.**
EXT ALARM	**XTA1** **XTA2** **XTA3**	The external alarm input is triggered by a 3rd party device.	• **Verify the device is working properly.** If the device is working properly, check to make sure the device is connected to the appropriate position. • **Review the Surveillant settings to make sure they match the type of device connected to the controller.** Ensure **DI** is set to **EXT Alarm**. • **Verify DI State is appropriately set to open or closed to match the input.** Changing the state from open to closed will allow the user to verify the controller is reading **DI** correctly.