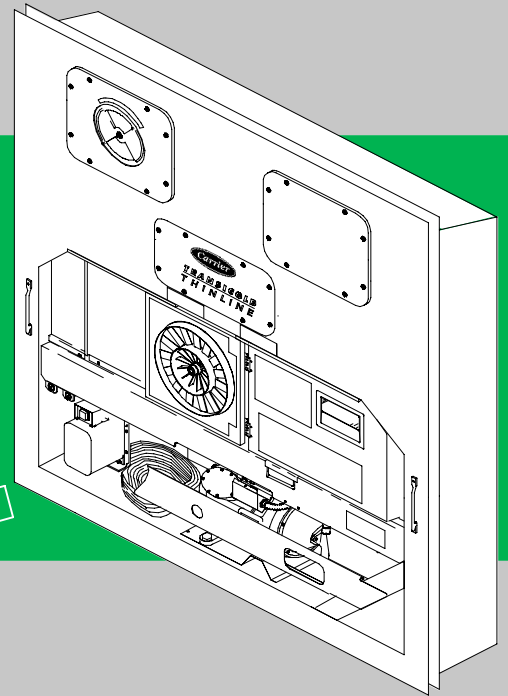
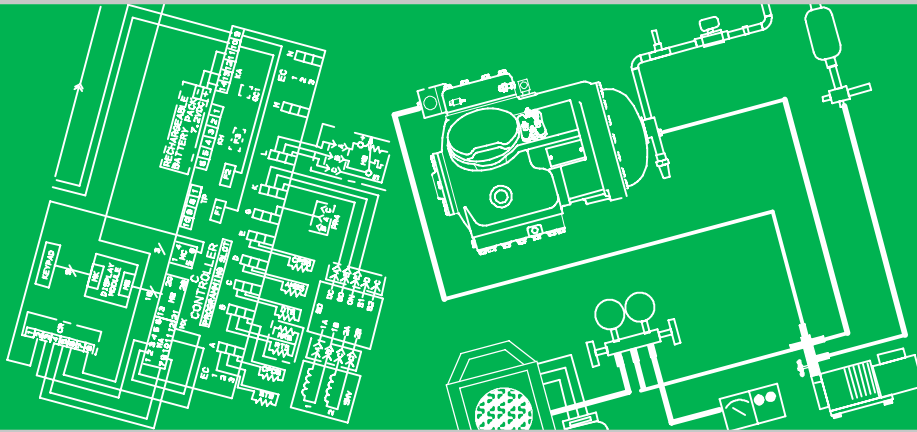




Container Refrigeration



OPERATION AND SERVICE

for

69NT40-541-001 TO 199

Container Refrigeration Units

Table 3-6 Controller Alarm Indications (Sheet 1 of 3)

Code No.	TITLE	DESCRIPTION
AL11	Evaporator Motor 1 IP Trip	Alarm 11 is applicable to units with Single Evaporator Fan Capability (CnF32 set to 1EFO) only. The alarm is triggered if the evaporator fan motor #1 internal protector opens. If the alarm is active, probe check is deactivated.
AL12	Evaporator Motor 2 IP Trip	Alarm 12 is applicable to units with Single Evaporator Fan Capability (CnF32 set to 1EFO) only. The alarm is triggered if the evaporator fan motor #2 internal protector opens. If the alarm is active, probe check is deactivated.
AL20	Control Circuit Fuse Open (24 vac)	Alarm 20 is triggered by control power fuse (F3A, F3B) opening and will cause the software shutdown of all control units. This alarm will remain active until the fuse is replaced.
AL21	Micro Circuit Fuse Open (18 vac)	Alarm 21 is triggered by one of the fuses (F1/F2) being opened on 18 volts AC power supply to the Controller. The suction modulation valve (SMV) will be opened and current limiting is halted. Temperature control will be maintained by cycling the compressor.
AL22	Evaporator Fan Motor Safety	Alarm 22 responds to the evaporator motor internal protectors. On units with Normal Evaporator Fan Operation (CnF32 set to 2EFO) the alarm is triggered by opening of either internal protector. It will disable all control units until the motor protector resets. On units with Single Evaporator Fan Capability (CnF32 set to 1EFO) the alarm is triggered by opening of both internal protectors. It will disable all control units until a motor protector resets.
AL24	Compressor Motor Safety	Alarm 24 is triggered by the opening of the compressor motor internal protector. This alarm will disable all control units except for the evaporator fans and will remain active until the motor protector resets. This alarm triggers the failure action code set by Function Code Cd29.
AL25	Condenser Fan Motor Safety	Alarm 25 is triggered by the opening of the condenser motor internal protector and will disable all control units except for the evaporator fans. This alarm will remain active until the motor protector resets. This alarm is deactivated if the unit is operating on water cooled condensing.
AL26	All Supply and Return temperature Control Sensors Failure	Alarm 26 is triggered if the Controller determines that all of the control sensors are out-of-range. This can occur for box temperatures outside the range of -50_C to +70_C (-58_F to +158_F). This alarm triggers the failure action code set by Function Code Cd29.
AL27	Probe Circuit Calibration Failure	The Controller has a built-in Analog to Digital (A-D) converter, used to convert analog readings (i.e. temperature sensors, current sensors, etc.) to digital readings. The Controller continuously performs calibration tests on the A-D converter. If the A-D converter fails to calibrate for 30 consecutive seconds, this alarm is activated. This alarm will be inactivated as soon as the A-D converter calibrates.
AL50	Fresh Air Position Sensor (VPS)	Alarm 50 is activated whenever the sensor is outside the valid range. There is a 5 minute adjustment period where the user can change the vent position without generating an alarm event. The sensor requires 5 minutes of no movement to confirm stability. If the vent position changes at any point beyond the 5 minute adjustment period, the sensor will generate an alarm event. The alarm is triggered off when the unit power cycles and the sensor is within valid range.
AL51	Alarm List Failure	During start-up diagnostics, the EEPROM is examined to determine validity of its contents. This is done by testing the set point and the alarm list. If the contents are invalid, Alarm 51 is activated. During control processing, any operation involving alarm list activity that results in an error will cause Alarm 51 to be activated. Alarm 51 is a "display only" alarm and is not written into the alarm list. Pressing the ENTER key when "CLEAR" is displayed will result in an attempt to clear the alarm list. If that action is successful (all alarms are inactive), Alarm 51 will be reset.
AL52	Alarm List Full	Alarm 52 is activated whenever the alarm list is determined to be full; at start-up or after recording an alarm in the list. Alarm 52 is displayed, but is not recorded in the alarm list. This alarm can be reset by clearing the alarm list. This can be done only if all alarms written in the list are inactive.
AL53	Battery Pack Failure	Alarm 53 is caused by the battery pack charge being too low to provide sufficient power for battery-backed recording. Renew replaceable batteries. If this alarm occurs on start up, allow a unit fitted with rechargeable batteries to operate for up to 24 hours to charge rechargeable batteries sufficiently to deactivate the alarm

Table 3-6 Controller Alarm Indications (Sheet 2 of 3)

AL54	Primary Supply Temperature Sensor Failure (STS)	Alarm 54 is activated by an invalid primary supply temperature sensor reading that is sensed outside the range of -50 to +70_C (-58_F to +158_F) or if the probe check logic has determined there is a fault with this sensor. If Alarm 54 is activated and the primary supply is the control sensor, the secondary supply sensor will be used for control if the unit is so equipped. If the unit does not have a secondary supply temperature sensor, and AL54 is activated, the primary return sensor reading, minus 2_C will be used for control. NOTE The P5 Pre-Trip test must be run to inactivate the alarm
AL56	Primary Return Temperature Sensor Failure (RTS)	Alarm 56 is activated by an invalid primary return temperature sensor reading that is outside the range of -50 to +70_C (-58_F to +158_F). If Alarm 56 is activated and the primary return is the control sensor, the secondary return sensor will be used for control if the unit is so equipped. If the unit is not equipped with a secondary return temperature sensor or it fails, the primary supply sensor will be used for control. NOTE The P5 Pre-Trip test must be run to inactivate the alarm.
AL57	Ambient Temperature Sensor Failure	Alarm 57 is triggered by an ambient temperature reading outside the valid range from -50_C (-58_F) to +70_C (+158_F).
AL58	Compressor High Pressure Safety	Alarm 58 is triggered when the compressor high discharge pressure safety switch remains open for at least one minute. This alarm will remain active until the pressure switch resets, at which time the compressor will restart.
AL59	Heat Termination Thermostat	Alarm 59 is triggered by the opening of the heat termination thermostat and will result in the disabling of the heater. This alarm will remain active until the thermostat resets.
AL60	Defrost Temperature Sensor Failure	Alarm 60 is an indication of a probable failure of the defrost temperature sensor (DTS). It is triggered by the opening of the heat termination thermostat (HTT) or the failure of the DTS to go above set point within two hours of defrost initiation. After one-half hour with a frozen range set point, or one-half hour of continuous compressor run time, if the return air falls below 7_C (45_F), the Controller checks to ensure the DTS reading has dropped to 10_C or below. If not, a DTS failure alarm is given and the defrost mode is operated using the return temperature sensor. The defrost mode will be terminated after one hour by the Controller.
AL61	Heaters Failure	Alarm 61 is triggered by detection of improper amperage resulting from heater activation or deactivation. Each phase of the power source is checked for proper amperage. This alarm is a display alarm with no resulting failure action, and will be reset by a proper amp draw of the heater.
AL62	Compressor Circuit Failure	Alarm 62 is triggered by improper current draw increase (or decrease) resulting from compressor turn on (or off). The compressor is expected to draw a minimum of 2 amps; failure to do so will activate the alarm. This is a display alarm with no associated failure action and will be reset by a proper amp draw of the compressor.
AL63	Current Over Limit	Alarm 63 is triggered by the current limiting system. If the compressor is ON and current limiting procedures cannot maintain a current level below the user selected limit, the current limit alarm is activated. This alarm is a display alarm and is inactivated by power cycling the unit, changing the current limit via the code select Cd32, or if the suction modulation valve (SMV) is open beyond the controller desired point.
AL64	Discharge Temperature Over Limit	Alarm 64 is triggered if the discharge temperature sensed is greater than 135_C (275_F) for three continuous minutes, if it exceeds 149_C (300_F), or if the sensor is out of range. This is a display alarm and has no associated failure action.
AL65	Discharge Pressure Transducer Failure	Alarm 65 is triggered by a compressor discharge transducer reading outside the valid range of 73.20 cm Hg (30 in Hg) to 32.34 Kg/cm ² (460 psig). This is a display alarm and has no associated failure action.

Table 3-6 Controller Alarm Indications (Sheet 3 of 3)

AL66	Suction Pressure Transducer Failure	Alarm 66 is triggered by a suction pressure transducer reading outside the valid range of 73.20 cm Hg (30 in Hg) to 32.34 Kg/cm ² (460 psig). This is a display alarm and has no associated failure action.	
AL67	Humidity Sensor Failure	Alarm 67 is triggered by a humidity sensor reading outside the valid range of 0% to 100% relative humidity. If alarm AL67 is triggered when the dehumidification mode is activated, then the dehumidification mode will be deactivated.	
AL68	Condenser Pressure Transducer Failure	Alarm 68 is triggered by a condenser pressure transducer reading outside the valid range of 73.20 cm Hg (30 in Hg) to 32.34 Kg/cm ² (460 psig). This is a display alarm and has no associated failure action.	
AL69	Suction Temperature Sensor Failure	Alarm 69 is triggered by a suction temperature sensor reading outside the valid range of -60_C (-76_F) to 150_C (302_F). This is a display alarm and has no associated failure action.	
NOTE If the Controller is configured for four probes without a DataCORDER, the DataCORDER alarms AL70 and AL71 will be processed as Controller alarms AL70 and AL71.			
ERR #	Internal Microprocessor Failure	The Controller performs self-check routines. if an internal failure occurs, an “ERR” alarm will appear on the display. This is an indication the Controller needs to be replaced.	
		ERROR	DESCRIPTION
		ERR 0 - RAM failure	Indicates that the Controller working memory has failed.
ERR #	Internal Microprocessor Failure	EER 1 - Program Memory failure	Indicates a problem with the Controller program.
		EER 2 - Watchdog time-out	The Controller program has entered a mode where- by the Controller program has stopped executing.
		EER 3 - N/A	N/A
		EER 4 - N/A	N/A
		EER 5 - A-D failure	The Controller’s Analog to Digital (A-D) converter has failed.
		EER 6 - IO Board failure	Internal program/update failure.
		EER 7 - Controller failure	Internal version/firmware incompatable.
		EER 8-DataCorder failure	Internal DataCorder memory failure.
		EER - 9 Controller failure	Internal controller memory failure.
		In the event that a failure occurs and the display cannot be updated, the status LED will indicate the appropriate EER code using Morse code as shown below. E R R 0 to 9 ERR0 = . .-. .-. ---- ERR1 = . .-. .-. .---- ERR2 = . .-. .-. ..--- ERR3 = . .-. .-.-- ERR4 = . .-. .-.- ERR5 = . .-. .-. -..... ERR6 = . .-. .-. --.... ERR7 = . .-. .-. ---... ERR8 = . .-. .-. ----. ERR9 = . .-. .-. -----.	
		Entr StPt	Enter Setpoint (Press Arrow & Enter)
LO	Low Main Voltage (Function Codes Cd27-38 disabled and NO alarm stored.)	This message will be alternately displayed with the set point whenever the supply voltage is less than 75% of its proper value.	