Error Codes

The controller can display Error Codes. If the chiller is still running press **enter** to see if the code clears, a limit may have been only temporarily exceeded. If the chiller shut down, the controller will continue to flash the error code. Press **enter** to clear the display and silence any alarm. You can silence the alarm without clearing the code by pressing either the up or down arrow key. Once the cause of the shut down is identified and corrected, start the chiller. If the cause was not corrected the error code will reappear.

Error Code	Reaction	Cause	Actions
8888 (or blank screen)	Chiller will not start.	Software communication error.	•Cycle circuit protector on the rear of the chiller
Add	Chiller continues to run. Auto refill, if installed, shuts off.	The auto refill time chosen for the customer adjustable *fill* setting in the Setup Loop is set to 0 and the chiller is configured to keep running.	•Check for leaks. •Check **rEFil** settings and adjust if necessary. •Add fluid to the tank.
ConF	Chiller will not start.	The chiller is improperly configured.	Use the Configuration Loop to reconfigure the chiller.
di	Chiller continues to run. (Optional display)	The chiller operating time exceeded Setup Loop di t alarm value. The optional DI cartridge *may* need replacing.	•Check the Puralite sensor on the rear of the chiller, if the light is red change the cartridge. •If the Puralite sensor is green, revise di t alarm value.
driP	Chiller will shut down. (Optional display)	Fluid in drip pan (SEMI chillers only).	•Check for leaks. •Remove the fluid from the drip pan and reset the fault.
FLtrS	Chiller continues to run.	Air and fluid filters require preventive maintenance/ replacement.	•Check air and fluid filters. If required, clean/ change air and fluid filters. •If your filters do not need cleaning, you may increase the number of hours between preventive care reminders. There are four levels.

Error Code	Reaction	Cause	Actions
f tst	Display functional test mode.	If the chiller is displaying this message without anyone holding down keys, then the keypad is defective.	•Try pressing keys to see if the message clears. •Cycle the power from the keypad, if possible.
HiFLo	Chiller reaction depends on ALr setting chosen in the Setup Loop. (Chillers equipped with a flow transducer.)	The process fluid flow rate has exceeded the adjustable high flow setting's value.	•Verify your HiFLo setting and adjust setting if necessary. •Check all application and plumbing shut off valves for correct position. •Adjust flow if chiller is equipped with a flow control valve (option). •If flow transducer was recently calibrated double check calibration.
Hi P1	Chiller reaction depends on ALr setting chosen in the Setup Loop.	The pump's high discharge pressure exceeded Setup Loop high alarm value.	•Verify your Hi P1 setting. •Check application valves and ensure that they have not changed or been closed. **NOTE** If routine shut-off of the process flow is required then an external pressure relief valve should be added. ▲ •May occur as a result of changing the internal DI cartridge. Disconnecting the cartridge adds an additional 0.5 gpm to the main flow. •Check for debris in the application or external filters. •Double check fluid lines. Excessive bends, long tubing and diameter reductions can affect the pump's discharge pressure. **NOTE** If diameter reductions must be made, they should be made at the inlet and outlet of your application, not at the chiller. ▲

Error Code	Reaction	Cause	Actions
Hi t	Chiller reaction depends on ALr setting chosen in the Setup Loop. **NOTE** If the chiller does shut down it can be restarted provided the temperature is still within the factory-set high fixed temperature limit. However, the error will reoccur if the temperature goes below the adjustable setting and then again exceeds it. ▲	The process fluid temperature exceeded Setup Loop alarm value.	•Verify your Hi t setting. •Ensure the chiller meets all environmental requirements. •Ensure chiller has adequate ventilation. •Clean the air filter. Dirt and debris on the filter can prevent the chiller from functioning at full capacity. •Ensure that the heat load being applied to the chiller is not too high. •Bring cooler air in from another area or exhaust the hot air into another location using an auxiliary fan. •Verify/adjust controller PID values.
HPC	Chiller will shut down.	High refrigeration pressure.	**Air-cooled chillers** •Ensure that the ambient temperature is not exceeding the recommended range. •Ensure chiller has adequate ventilation. •Clean the air filter. Dirt and debris on the filter can prevent the filter from functioning at full capacity. •Bring cooler air in from another area or exhaust the hot air into another location using an auxiliary fan. **Water-cooled chillers** •Ensure the plastic plugs were removed from the facility connections. •Ensure facility water is on and connected. •Check facility water flow rate and pressure.

Error Code	Reaction	Cause	Actions
LLF	Chiller will shut down. Optional auto refill shuts down.	Reservoir fluid level too low for normal operation. The auto refill time chosen for the customer adjustable *fill* setting in the Setup Loop is set to 0 and the chiller is configured to shut down.	•Excessive evaporation. Ensure the chiller is operating with the funnel and cap in place. •Check for leaks. •Check **rEFil** settings and adjust if necessary. •Add fluid to the tank.
LoFLo	Chiller reaction depends on ALr setting chosen in the Setup Loop. (Chillers equipped with a flow transducer.)	The process fluid flow rate has gone below the adjustable setting's value.	•Verify your LoFLo setting. •Adjust flow if chiller is equipped with a flow control valve (option). •Check all valves in your application and plumbing lines to ensure that they have not changed or closed. •If flow transducer has recently been calibrated, double check calibration to ensure it was done properly.
Lo P1	Chiller reaction depends on ALr setting chosen in the Setup Loop.	Pump's low discharge pressure is below Setup Loop low alarm value.	•Ensure that chiller reservoir level is not too low. •Verify your LoP1 setting. •Chiller requires >3 PSIG application pressure drop. If a bypass valve has been installed, some restriction may need to be added to the bypass line.

Code	Reaction	Cause	Actions
Lo t	Chiller reaction depends on ALr setting chosen in the Setup Loop. **NOTE** If the chiller does shut down it can be restarted provided the temperature is still above the factory-set low fixed temperature limit. However, the error will reoccur if the temperature goes above the adjustable setting and then again drops below it. ▲	Process fluid temperature is below Setup Loop alarm value.	•Verify your Lo t setting. •Ensure that the ambient temperature is not below the recommended low-range. If your application load is constant and/or the lower temperature can be temporarily tolerated, then continue operation. (The ThermoFlex will control setpoint when sufficient heat is added.) •Verify/adjust controller PID values. •Add insulation to external plumbing lines to reduce the heat-loss to the environment. •For water-cooled chillers check facility water temperature.
o FLo	Chiller will shut down.	There is an overflow condition in the reservoir.	•Ensure the reservoir was not filled above the MAX LEVEL line. •Check for clogged reservoir filter.
oL	Chiller will shut down. (Chillers equipped with 3-Φ pump motor overload.)	Pump motor overload activated. Pump motor exposed to excessive current due to high pressure, flow or ambient temperature.	•Allow pump to cool down.
oL 2	Chiller will shut down. (Chillers equipped with 3-Φ fan.)	Fan motor overload activated.	•Allow chiller to cool down. •For air-cooled chillers, clean the air filter
PHEr	Chiller will shut down. (3-Φ chillers only)	Phase rotation is wrong.	•Disconnect chiller from power source and reverse any two line conductors on the line side of the main circuit breaker.

Error Code	Reaction	Cause	Actions
rEFiL	Auto refill will shut off. Chiller reaction depends on ALr setting chosen in the Setup Loop. Auto refill will shut off. Chiller will continue to run. (Optional display.)	The fluid level did not reach the minimum operating level within the time chosen for the customer adjustable *fill* setting, chosen in the Setup Loop. The auto refill successfully filled within the time frame chosen for the customer adjustable *fill* setting, but the chiller tried to refill 5 times in 40 hours.	•Check auto refill connection. •Check for leaks. •Check the supply pressure on the auto refill supply line. With low pressure the auto refill time span setting may be set too low and the reservoir does not have time to fill. •Check **rEFil** settings and adjust if necessary.
SEr X	Chiller continues to run.	Service code.	•See Service Codes in this section.
Er 1	Indc	RAM test fail or internal PCBA error	•If problem persists replace control board.
Er 2	Indc	Keypad failure or internal PCBA error.	•If problem persists replace control board.
Er 3	Indc	Checksum fail or internal PCBA error	•If problem persists replace control board.
Er 4	Indc	NVS_3_RESET Setup variables were reset	•If problem persists replace control board.
Er 5	Indc	NVS_2_3_RESET Maintenance counters and setup variables were reset	•If problem persists replace control board.
Er 6	Indc	NVS_1_2_3_RESET Calibration, maintenance counters and setup variables were reset	•If problem persists replace control board.
Er 7	Indc	SENSE_5V_Fault	•Replace the main control board.
Er 8	Indc	BAD_RTD1_CAL Calibration needs to be saved as a factory reset.	•Recalibrate chiller and save parameters.
Er 9	Indc	BAD_RTD2_CAL Calibration needs to be saved as a factory reset.	•Recalibrate chiller and save parameters.
Er 10	Indc	BAD_RTD3_CAL Calibration needs to be saved as a factory reset.	•Recalibrate chiller and save parameters.
Er 11	Indc	BAD_PRESS1_CAL Calibration needs to be saved as a factory reset.	•Recalibrate chiller and save parameters.
Er 12	Indc	BAD_PRESS2_CAL Calibration needs to be saved as a factory reset.	•Recalibrate chiller and save parameters.
Er 13	Indc	BAD_SENSE-5V_CAL Calibration needs to be saved as a factory reset.	•Redo calibration
Er 15	Indc	Bad, communications connection.	•Check the serial communication connection.

Code	Reaction	Cause	Actions
Er 16	Indc	Bad sensor calibration detected several seconds after performing a calibration.	•Redo calibration.
Er 17	Chiller will shut down.	T3 ambient temperature, 3/16”, sensor shorted.	•See page 2-4A.
Er 18	Chiller will shut down.	T3 ambient temperature, 3/16”, sensor open.	•See page 2-4A.
Er 22	This error code has priority over **H iT.** Chiller will shut down. **NOTE** Chiller will not restart until process fluid temperature is below +43°C.	Reservoir fluid temperature exceeded the *factory preset* value of +43°C.	•Ensure the chiller meets all environmental requirements. •Ensure chiller has adequate ventilation. •Clean the air filter. Dirt and debris on the filter can prevent the chiller from functioning at full capacity. •Ensure that the heat load being applied to the chiller is not too high. •Bring cooler air in from another area or exhaust the hot air into another location using an auxiliary fan. •Verify/adjust controller PID values.
Er 23	Chiller will shut down.	T2 refrigeration temperature sensor shorted.	•See page 2-4.
Er 24	Chiller will shut down.	T2 refrigeration temperature sensor open.	•See page 2-4.
Er 25	Chiller will shut down.	Internal temperature sensor shorted.	
Er 26	Chiller will shut down.	Internal temperature sensor open.	
Er 32	Chiller will shut down.	Refrigeration suction gas temperature exceeded 50°C.	Check the J7 refrigeration sensor connection, see page 2-4.

Code	Reaction	Cause	Actions
Er 33	This error code has priority over **L oT.** Chiller will shut down. **NOTE** Chiller will not restart until process fluid temperature exceeds +2°C. ▲	Reservoir fluid temperature below the *factory preset* value of +2°C.	•Check ambient temperature. Chiller may not to be able to reach setpoint at low ambient temperatures. •Ensure that the ambient temperature is not exceeding the recommended range. •Verify/adjust controller PID values. •Add insulation to external plumbing lines to reduce the heat-loss to the environment. •For water-cooled chillers check facility water temperature.
Er 35	This error code has priority over **Hi P1.** Chiller will shut down.	Process pressure (P1) exceeded *factory preset* value for greater than 30 seconds. Preset Values: P1 and P2 - 105 psi P3 60 Hz - 48 psi P3 50 Hz - 32 psi P4 60 Hz - 85 psi P4 50 Hz - 60 psi P5 60 Hz - 87 psi P5 50 Hz - 56 psi	•Check application valves and ensure that they have not changed or been closed. **NOTE:** If routine shut-off of the process flow is required then an external pressure regulator accessory should be added. ▲ •May occur as a result of changing the internal DI cartridge. Disconnecting the cartridge adds an additional 0.5 GPM to the main flow. •Check for debris in the application or clogged external filters. •Double check fluid lines. Excessive bends, long tubing and diameter reductions can affect the pump's discharge pressure. **NOTE:** If diameter reductions must be made, they should be made at the inlet and outlet of your application, not the chiller. ▲
Er 36	This error code has priority over **Lo P1.** Chiller will shut down.	Process pressure (P1) below *factory preset* limit of 3 psi (all pumps) for greater than 15 seconds. Possible pump motor overload.	•Ensure that the chiller reservoir is not too low. •Chiller requires >3 PSIG application pressure drop. If a bypass valve has been installed, some restriction may need to be added to the bypass line. •Allow chiller to cool down.
Er 41	Chiller continues to run.	Communication error between display and main control board.	•Cycle circuit protector on rear of chiller off and on. •Check cable between display board and control box assembly. •Display board may be defective.

Code	Reaction	Cause	Actions
Er 42	Chiller continues to run.	Internal comm error.	
Er 44	Chiller will shut down.	There is an overflow condition in the reservoir.	Ensure reservoir was not filled above the MAX LEVEL line. Check for clogged reservoir filter.
Er 45	Chiller will shut down.	Low refrigeration pressure.	Check for refrigeration leaks.
Er 47	Chiller will shut down.	Remote EMO activated.	Reset EMO.
Er 48	Chiller will shut down. (Optional display.)	Chiller's optional EMO button depressed.	•When able, reset the EMO.
Er 58	Chiller will shut down. **NOTE:** This error code was removed in software version P.	Low flow fault. Flow dropped to 0 GPM for more than 15 seconds.	•Adjust flow if chiller is equipped with a flow control valve. •Check all valves in your application and plumbing lines to ensure that they have not changed or closed. **NOTE:** If regular shut-off of the process flow is required then disable the low flow alarm by setting the alarm to 0.5 GPM. •If flow transducer has recently been calibrated, double check calibration to ensure it was done properly, see Section V.
Er 59	Chiller will shut down.	Invalid level fault. Chiller sensed both a high level and low level reservoir fluid level.	
Er 62	Chiller will not start. (Chillers equipped with optional Analog I/O.)	Probe not properly connected. Shorted remote temperature probe.	•Check connection.
Er 63	Chiller will not start. (Chillers equipped with optional Analog I/O.)	Probe not properly connected. Open remote temperature probe.	•Check connection.
Er 64	Chiller will continue to run using the last valid setpoint received. (Chillers equipped with optional Analog I/O.)	Analog remote setpoint is enabled and the chiller receives a voltage or current level that is outside the chiller's set point range.	•The error can be cleared only after a valid set point is received, or the remote analog setpoint is turned off.