

10 TROUBLE-SHOOTING INSTRUCTIONS

If the appliance is not producing chilled water, check the following items before calling the Authorized Technician:

- Check that power supply exists and that main switch is in the "ON" position.
- Check that gas shut-off valve is open.
- Check that all on/off switches (timer, thermostat ON/OFF switch etc.) are in the position, which requires the function on the unit.

If after all these operations the unit does not start, do not try to repair the unit but call an Authorized Technician.

If a FAULT CODE is displayed, refer to Table 5.

When the chiller is in **FAULT** mode (stopped), electronic board's display will indicate the fault code. The blinking character **E**, followed by two numbers composes the error code. This fault code is visible from the opening on the protection shield of the electronic control board.

CODE	FAULT DESCRIPTION
E01	<p>HIGH TEMPERATURE LIMIT SWITCH (auto reset but requires the high temperature limit switch to be manually reset) High Temperature Limit Switch (M1) is located on the Generator. Check:</p> <ul style="list-style-type: none"> - High Temperature Limit Switch; when "open" (released) press the reset button. - Wires; Disconnected or damaged. Check the wiring and continuity (disconnect the wires from the board when checking).
E02	<p>PRESSURE SWITCH – MAX. PRESSURE SEALED REFRIGERATION UNIT (auto reset but requires the high pressure switch to be manually reset) Pressure Switch (NPH) is located on the rear side of the Leveling Chamber. Check:</p> <ul style="list-style-type: none"> - Pressure switch; When "open" (released) reset it manually. - Wires; Disconnected or damaged. Check the wiring and continuity (disconnect the wires from the board checking).
E03	<p>LOW TEMPERATURE CHILLED WATER CONTROL (auto reset at end of condition) Low Temperature Chilled Water Control is a non-adjustable set point to indicate possible freezing condition. The set point is compared to the outlet water line's thermistor (THM) reading. Check:</p> <ul style="list-style-type: none"> - The chilled water flow rate. - Regulation of chilled water thermostat on electronic board (particularly if minimum chilled water thermostat set point is 37°F).
E04	<p>DEFICIENT CONDENSER / ABSORBER VENTILATION – OVERHEATING (reset by shutting power supply "off" then "on") Safety based on relationship between condenser/absorber temperature (sensor located on the condenser outlet tube, TCN) and external temperature (sensor located at the upper right rear corner of the chiller, TA). Check:</p> <ul style="list-style-type: none"> - Fan operation (smooth rotation, blade position, fastening). - Condenser/absorber's condition; If dirty clean the condenser/absorber coils. - Natural air circulation (roof overhang or overhead obstructions could provoke the problems). - Sensors damaged, reading improperly, position (check position and if reading improperly replace). - Fan power supply; check the fan voltage (white and black wires on the fan) which must be at least 90% of supply voltage to unit at time of fault code (if lower replace electronic control board). TCN thermistor & TA thermistor
E05	<p>EXTERNAL TEMPERATURE OVER 131°F (auto reset at end of condition) External Temperature Probe (TA) is located at the upper right rear corner of the chiller. The external temperature must be under 131°F for operation. Check:</p> <ul style="list-style-type: none"> - Natural air circulation (roof overhang or overhead obstructions could provoke the problem). - The correct position of sensing bulb.

	<ul style="list-style-type: none"> - Sensor damaged, reading improperly, position (check position and if reading improperly, replace). TA thermistor
CODE	FAULT DESCRIPTION
E06	<p>EXTERNAL TEMPERATURE BELOW 10°F (auto reset at end of condition) External Temperature Probe (TA) is located at the upper right rear corner of the chiller. The external temperature must be above 10°F for operation. Check:</p> <ul style="list-style-type: none"> - Sensor damaged, reading improperly, position (check position and if reading improperly, replace). TA thermistor
E07	<p>GENERATOR LIMIT TEMPERATURE OVER 330°F (auto reset at end of condition) Generator Temperature Probe (TG) is located on the generator near the High Temperature Limit Switch. Could be caused by a power-out or starting the unit at low temperatures (under 50°F). Survey the machine for the next 30 minutes. The third E07 alarm in 60 minutes will stop the chiller and E08 fault code will appear on display.</p>
E08	<p>GENERATOR LIMIT TEMPERATURE 330°F REACHED 3 TIMES IN 1 HOUR (reset by shutting power supply "off" then "on") Generator Temperature Probe (TG) is located on the generator near the High Temperature Limit Switch. Check:</p> <ul style="list-style-type: none"> - Tightness of generator's pressure relief valve. - Gas pressure supplied to the burner. - Sensor damaged, reading improperly, position (check position and if reading improperly, replace). TG thermistor - Combustion chamber leakage. - Turn on the chiller and use gauges to measure the pressures of the sealed refrigerant system.
E09	<p>BURNER MALFUNCTION (reset by shutting power supply "off" then "on") Generator Temperature Probe (TG) is located on the generator near the High Temperature Limit Switch. This fault code indicates the generator temperature did not increase the required amount in the time allotted (15 minutes). Check:</p> <ul style="list-style-type: none"> - Premixer motor. - Differential air pressure switch; check the air tubes, connection to the probes and functionality. - Ignition control box fuse 3.15 A on electronic control board. - Ignition control box power supply (from electronic control board). - Ignition transformer and wire condition - Flame sensor and igniter conditions - Connection, location and functionality (damage) of Generator Temperature Probe. TG thermistor
E10	<p>CHILLED WATER FLOW SWITCH (auto reset at end of condition) Flow switch (FL) is located in returning chilled water line. Check:</p> <ul style="list-style-type: none"> - Water Pump is operating properly; Pump position. Water pump must be located before the chiller (in the inlet chilled water line). - Check the water circulation pump parameters and water flow rate. - If the water in the evaporator is frozen (missing antifreeze), turn off the power supply of the unit and wait 15 to 30 minutes (with circulation pump on if possible). - Flow switch failure (remove and replace with new flow switch). FL Switch - Water leakage from hydronic system.
E11	<p>SOLUTION PUMP ROTATION (reset by shutting power supply "off" then "on") Solution Pump rotation probe (SRT) is located on pump's body. Check:</p> <ul style="list-style-type: none"> - Proper operation of solution pump's electric motor. - Probe's connection wires. - Closing of "REED" switch by rotating the gear (use an electrical tester at the probe connection on the electronic control board for continuity pulses). SRT sensor

	- If the pump is locked-up or stopped because of mechanical failure or belt breakage.
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E12	<p>IGNITION CONTROL BOX LOCKOUT (reset by shutting power supply "off" then "on") Ignition control box is located in the electric control box of the chiller.</p> <p>Check:</p> <ul style="list-style-type: none"> - Spark igniter (condition of wires, position, and distance between electrodes). - Gas manifold orifice; check the gas pressure on the orifice). - Gas supply pressure before the gas valve. - Flame sensor (condition of wire, position, condition of electrode).
E16	<p>OUTLET CHILLER WATER TEMPERATURE PROBE FAILURE (reset by shutting power supply "off" then "on") Outlet Water Temperature Probe (THM) is located on chiller water outlet tube (thermometer well).</p> <p>Check:</p> <ul style="list-style-type: none"> - Wiring to the electronic control board. - Before replacing the temperature probe, check with a new temperature probe that the fault code disappear from display (connect the wires to THM connector at electronic board). <p>THM thermistor</p>
E17	<p>INLET CHILLER WATER TEMPERATURE PROBE FAILURE (reset by shutting power supply "off" then "on") Inlet Water Temperature Probe (THR) is located on chiller water inlet tube (thermometer well).</p> <p>Check:</p> <ul style="list-style-type: none"> - Wiring to the electronic control board. - Before replacing the temperature probe, check with a new temperature probe that the fault code will disappear from display (connect the wires to THR connector on electronic control board). <p>THR thermistor</p>
E18	<p>CONDENSER TEMPERATURE PROBE FAILURE (reset by shutting power supply "off" then "on") Condenser Temperature Probe (TCN) is located on condenser outlet tube.</p> <p>Check:</p> <ul style="list-style-type: none"> - Wiring to the electronic control board. - Before replacing the temperature probe, check with a new temperature probe that the fault code will disappear from display (connect the wires to TCN connector on electronic control board). <p>TCN thermistor</p>
E19	<p>EXTERNAL TEMPERATURE PROBE FAILURE (reset by shutting power supply "off" then "on") External Temperature Probe (TA) is located at the upper right rear corner of the chiller.</p> <p>Check:</p> <ul style="list-style-type: none"> - Wiring to the electronic control board. - Before replacing the temperature probe, check with a new temperature probe that the fault code will disappear from display (connect the wires to TA connector on electronic control board). <p>TA thermistor</p>
E20	<p>GENERATOR TEMPERATURE PROBE FAILURE (reset by shutting power supply "off" then "on") Generator Temperature Probe (TG) is located on the generator near the High Temperature Limit Switch. Note: The electronic control board does not check this thermistor until 15 minutes after the control switch closes.</p> <p>Check:</p> <ul style="list-style-type: none"> - Wiring to the electronic control board. - Before replacing the temperature probe, check with a new temperature probe that the fault code will disappear from display (connect the wires to TG connector on electronic control board).