Chapter 6 Troubleshooting

This chapter explains equipment trouble and how to remedy it.
When trouble is detected by one of the self-check features, the trouble is displayed on the instrumentation panel display and a trouble buzzer is sounded. For trouble undetected in self-checks and misoperation which can be easily mistaken as trouble, see "6.2 Before You Call for Service".
This chapter also includes trouble information for options.

6.1 Alarm and Action

⚠ DANGER

- **ELECTRIC SHOCK! Before working on the power circuits on the primary side of the main power switch (leakage breaker), shut OFF primary power supply and check the line is dead. Also, take measures to prevent accidental charging.**
  Working with primary power supply ON runs the risk of electric shock.
- **Shut OFF power from the main power switch BEFORE detaching the electric parts compartment door.**

The ovens are equipped with a buzzer that sounds when detects trouble as well as self-check features which display the trouble on the instrumentation panel display. Displayed alarm codes and their content are given in the alarm table on the following pages. Remedy trouble as described therein.
For trouble which is undetected in self-checks, see "6.2 Before You Call for Service". If the trouble cannot be remedied after taking the prescribed action, contact the place of purchase or ESPEC CORP. (Call for service.)
The buzzer can be silenced by setting the main power switch (leakage breaker) in the OFF position.

Alarm Table

Table 6.1 Alarm table

Displayed alarm	Trouble	Cause	Remedial action
AL-0	The PID parameters of the temperature controller unit were rewritten.	Data was rewritten by noise or other disturbance.	Check for source of noise or disturbance. Call for equipment servicing.
AL-1	The temperature sensor input to the temperature controller unit is disconnected. The oven has been stopped.	The sensor is loosely connected to the sensor input terminal on the control board or there is an open circuit in the thermocouple.	Turn control power OFF from the main power switch and resume testing. If the same alarm occurs again, call for service.
AL-2	The PID parameters of the temperature controller unit have exceeded their setting ranges.	Data was rewritten by noise or other disturbance.	Check for the source of the noise or disturbance. Set the main power switch in the OFF position, then back ON. PID parameters will restore their correct values. Call for equipment servicing.
AL-7	The temperature inside the test area rose above the absolute high limit temperature. The oven has been stopped.	Temperature rose because specimens inside the test area are generating heat.	Set the main power switch in the OFF position and either rearrange or reduce specimens so that air flows freely in the test area. Resume testing. If the same alarm occurs, call for service.
AL-8	The temperature inside the oven has risen above the upper deviation limit. The oven has been stopped.	Temperature rose because specimens inside the test area are generating heat.	Set the main power switch in the OFF position and either rearrange or reduce specimens so that air flows freely in the test area. Resume testing. If the same alarm occurs, call for service.

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Displayed alarm	Trouble	Cause	Remedial action
AL-9	The built-in temperature switch of the air circulator motor (electrical parts compartment) tripped because the motor was abnormally hot. The oven has been stopped.	The air circulator motor is overloaded. There is either a short-circuit or overcurrent in the heater circuit.	Wait so as to cool down the air circulator motor. Then, either rearrange or reduce specimens so that air flows freely in the test area. Set the main power switch in the ON position and resume testing. If the same alarm occurs, call for service.
	The temperature inside the test area rose above the overheat protector setting. The oven has been stopped.	Temperature rose because specimens inside the test area are generating heat or the overheat protector is set lower than the target temperature.	
	The heater thermal fuse blew. The oven has been stopped.	Either the heater is excessively hot or the current exceeded the rating of the thermal fuse.	
	Heater current rose and tripped the heater circuit protector. The oven has been stopped.	There is either a short-circuit or overcurrent in the heater circuit.	
	Trouble in the overheat protector temperature sensor (“---“ burnout indication appears on setting device display.)	Faulty contact in overheat protector temperature sensor.	Reconnect the temperature sensor.