

Appendix A

LAE Controller -FREEZER

Temperature Controls

Labec Freezers are fitted with digital solid state temperature controllers which operate from a sensitive probe sensor inserted in the working space of the chamber. The main temperature controller LAE controls the temperature at setpoint and has been calibrated at -20°C and before any adjustments to temperature settings are made allow the incubator temperature to stabilise for at least one hour.

NOTE: WHEN POWER IS FIRST SWITCHED ON THE CONTROLLER WILL FLASH “hi” AND A BUZZER WILL SOUND. HOLD IN THE AUX KEY FOR 6 SECONDS TO ALLOW OPERATION AND ACKNOWLEDGE THE ALARM. THIS IS DUE TO THE TEMPERATURE BEING ABOVE THE SET TEMPERATURE.

DEFAULT FREEZER SETTINGS FOR LAE CONTROLLER WITH ALARM OUTPUT “AUX”

SCL	1°C
SPL	-20°C
SPH	-10°C
SP	-18°C
HYS	2.0°C
CRT	0
CDC	0
DFR	0
DTO	1
DDY	1
ATL	-2.0°C
ATH	+2.0°C
ATD	10
ACC	0
OAU	ALR
BAU	NON
OSI (CALIBRATION OFFSET FACTOR- ADJUSTABLE)	+5
SIM	10
ADR	1

SET UP and OPERATING INSTRUCTIONS

TO DISABLE SOUNDING ALARM

Hold the AUX button on the display for 6 (six) seconds to disable the sound alarm. The controller unit will run through the settings and display the current chamber temperature.

TO SET THE CHAMBER TEMPERATURE

To set the controller to the desired temperature press and hold the SET button whilst using the ◀◀ -◀ and ▶-▶▶ buttons to set the temperature required.

A small red light will appear under the ☀ symbol which indicates the refrigerator/freezer compressor is operating and therefore cooling the chambers to the set temperature, this will also be evident by the display temperature adjusting towards the set temperature.

TO CHECK THE hi/lo TEMPERATURE SETTINGS

Press ◀◀ -◀ to check minimum temperature and/or ▶-▶▶ to check the maximum temperature.

TO RESET THE hi/lo TEMPERATURE

Press and hold ◀◀ -◀ then SET button to reset low temperature.
Press and hold ▶-▶▶ then SET button to reset high temperature.

TO SET THE ALARM

Note. The default alarm is set at +/- 2.0° C.

To adjust the alarm temperature:

Access the programming menu on display by pressing and holding, in the following order the

◀◀ -◀ and SET and ▶-▶▶ buttons hold for 6(six) seconds: ScL will display.

Use the » button to scroll through the menu until AtL is displayed.

Hold SET and adjust the value between 0° to +12° to set the high alarm.

Press SET when Ath is displayed, hold SET button and set between 0° to +12°

TO CALIBRATE THE CONTROLER AND CHAMBER TEMPERATURE

Place a thermocouple/ sensor on the centre middle shelf of the chamber.

Access the programming menu on display by pressing and holding, in this order:

◀◀ -◀ then SET then ▶-▶▶ hold for 6 (six) seconds: ScL will display,

Use ▶-▶▶ until OSI is displayed.

To set calibration temperature press SET and the and ◀◀ -◀ and the ▶-▶▶ buttons to increase or decrease the displayed value to match the internal thermocouple sensor to the controller.

Press AUX button to return to the main display screen.