

## Appendix A

### LAE Controller –FREEZER (auto defrost)

#### 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	04
CDC	0
DFR	4
DTO	20
DDY	1
ATL	-2.0°C
ATH	+2.0°C
ATD	10
ACC	0
OAU	ALR
BAU	NON
OSI (CALIBRATION OFFSET FACTOR- ADJUSTABLE)	0
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.