

HAWCO Ltd - Refrigeration Components Division  
Merrow Business Centre  
Merrow Lane, Guildford  
Surrey GU4 7WA England  
Telephone 01483 454749 863793  
Fax 01483 454452 869000  
869001



## USING THE LAE MCDU11 REFRIGERATION CONTROLLER

The controller can be set to operate the compressor, evaporator fans and defrost heaters over a wide range of temperatures and other parameters. These parameters may be set into the memory of the controller by the user to suit the local needs on site.

Two temperature probes are required, A and B. The temperature probes may be coloured black or white, they are identical electrically, choose one colour to be probe A and the other to be probe B. Probe A is the temperature control probe and should be fitted in place of the conventional mechanical thermostat. Probe B is the fan delay and defrost limit probe and should be fitted on the evaporator where the defrost termination thermostat would be placed.

### The Programming Mode

Switch off the mains supply to the controller and then push and hold in the two left hand buttons on the front of the controller. This is not easy to do! The best way is to use your thumb and forefinger held together to push in the buttons.

With the buttons still held in, switch back on the mains supply. If the programming mode has been correctly called up, then the display will show "tHS".

The attached sheet shows the various parameters available and how to alter them. The reference to "U/D" refers to the up/down buttons on the right hand side of the front of the controller.

When you are happy with the program changes, move forward through the program using the SET button until "tHS", "dEF" or "AdJ" is displayed then switch off the mains supply to the controller. The new values will be put into the memory and will operate when the mains supply is switched on again.

### Programming Notes

1. Defrost on demand (Fro). The time between defrosts is calculated by measuring the time that probe B on the evaporator is below 0°C and the dew point. These partial times are added up until the total is equal to the programmed time, when a defrost will take place. The dew point is calculated internally using the temperature differences between probes A and B.



2. During the defrost period the display may show a higher than normal temperature because of the sensitivity of probe A. In all probability, the overall air temperature will not be excessive but if the temperature display causes problems, use the "dEF" display. The display will revert to the actual temperature when the air temperature falls to the setpoint temperature programmed into the controller after the defrost period has finished.
3. It may be found necessary to give one or both of the probes a temperature offset because of local conditions in the cold area. For example, probe A may be badly placed and part of the cold area may become too cold or too hot. By giving probe A an off-set this error can be corrected.

### In The Operating Mode

Do not forget that it will not be possible to set the following parameters outside of the limits set into the memory during the programming operation.

### Setpoint

Press the "SET" button and the flashing display shows the setpoint temperature. Use the "U/D" buttons to alter the value. When the correct value has been chosen, either press the "SET" button again or leave the controller untouched and the new value will be put into the memory automatically after about 4 seconds.

### Defrost Delay

Pressing the lower left hand button will display the delay between defrosts. Use the "U/D" buttons to alter this to the correct value and enter into the memory by pressing the "SET" button or leaving the controller untouched for about 4 seconds.

### Manual Defrost

By pressing the two bottom buttons simultaneously, a defrost can be initiated if the evaporator is cold. The internal defrost time clock will be reset to zero when a manual defrost is carried out so it is possible to re-arrange the times of the daily defrosts if required.

← Please Note After setting the parameters in the programming mode, the MCDU11 must be switched off, switched on again and then the actual set point value and defrost interval must be programmed in by using the 'set' and 'defrost' buttons.

TO CHECK TEMP AT PROBE 'B' PUSH TOP R/HAND BUTTON.

# " MCDUIT "

	DISPLAY SHOWS	_____	DISPLAY SHOWS	_____	NOTES
START	tHS				THIS IS THE THERMOSTAT SET-UP SECTION
PRESS SET	dt	PRESS SET	A NUMBER	PRESS U/D	DIFFERENTIAL TEMPERATURE
PRESS SET	lSP	PRESS SET	A NUMBER	PRESS U/D	MINIMUM TEMPERATURE °C
PRESS SET	rSP	PRESS SET	A NUMBER	PRESS U/D	MAXIMUM TEMPERATURE °C
PRESS SET	rt	PRESS SET	A NUMBER	PRESS U/D	ANTI CYCLE TIME IN MINUTES
PRESS SET	PF	PRESS SET	ON or OFF	PRESS U/D	IF PROBE FAULT, ON = RELAYS 1&2 CLOSE: OFF = RELAYS OPEN
PRESS SET	def				THIS IS THE DEFROST SET UP SECTION
PRESS SET	Et	PRESS SET	A NUMBER	PRESS U/D	DEFROST LIMIT TEMPERATURE °C
PRESS SET	rdd	PRESS SET	A NUMBER	PRESS U/D	DEFROST LIMIT MINUTES
PRESS SET	lds	PRESS SET	A NUMBER	PRESS U/D	MINIMUM TIME BETWEEN DEFROST IN HOURS
PRESS SET	rds	PRESS SET	A NUMBER	PRESS U/D	MAXIMUM TIME BETWEEN DEFROST IN HOURS
PRESS SET	dr	PRESS SET	A NUMBER	PRESS U/D	DRAIN TIME IN MINUTES
PRESS SET	ti	PRESS SET	Fro or Con	PRESS U/D	Fro = DEFROST ON DEMAND Con = DEFROST EVERY SET NUMBER OF HOURS
PRESS SET	dh	PRESS SET	ELE or GAS	PRESS U/D	ELE = ELECTRIC DEFROST GAS = HOT GAS DEFROST
PRESS SET	Cd	PRESS SET	t-A or def	PRESS U/D	t-A = TEMP OF SENSOR A DISPLAYED DURING DEFROST def = THE DISPLAY SHOWS def DURING DEFROST
PRESS SET	Fd	PRESS SET	A NUMBER	PRESS U/D	TEMP DIFFERENCE IN °C BETWEEN PROBE A & PROBE B AT WHICH FANS RESTART
PRESS SET	AdJ				THIS IS THE PROBE OFF-SET ADJUST SECTION
PRESS SET	PA	PRESS SET	A NUMBER	PRESS U/D	ADJUST PROBE A BY °C
PRESS SET	Pb	PRESS SET	A NUMBER	PRESS U/D	ADJUST PROBE B BY °C
PRESS SET	tHS				END OF PROGRAMMING, TURN OFF MAINS

# LAE TEMPERATURE CONTROLLERS STANDARD PARAMETER SETTINGS

SETTING REF. No.

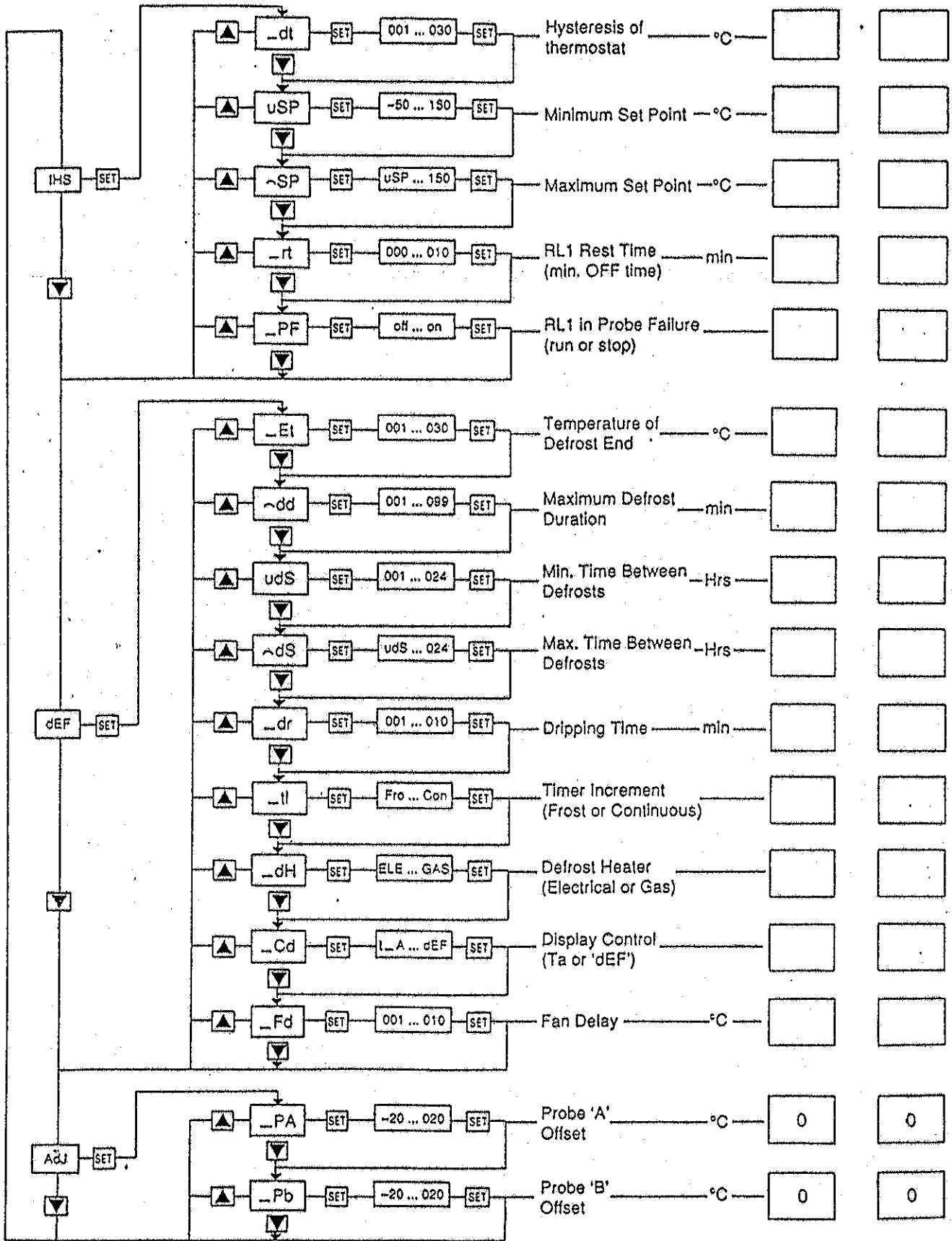
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2

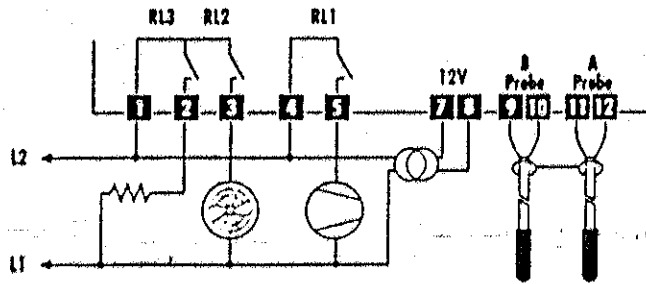
CONTROLLER  
MODEL No.

LAE  
MCDU 11/1

LAE  
MCDU 11/2

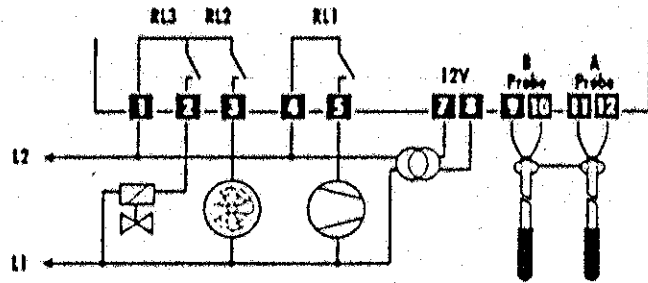


# MCDU 1 1



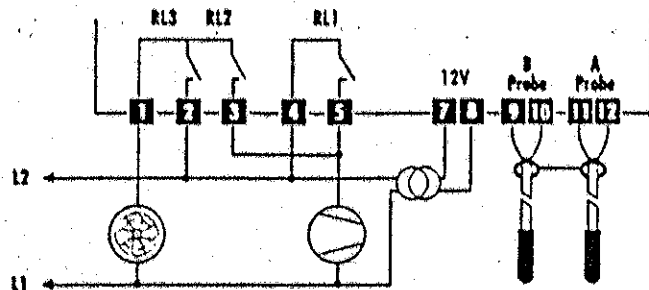
Electric defrost

# MCDU 1 1



Hot gas defrost

# MCDU 1 1



air defrost