FREEZEKING

WALK IN COOLER

OPERATION & MAINTENANCE MANUAL

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OPERATING INSTRUCTIONS

For FREEZEKING WALK-IN-COOLER

Important: Please read the following carefully. We consider any deviation from correct Installation, operation and servicing principles specially those mentioned below, sufficient cause for withdrawing all product guarantees.

This unit has an Automatic Temperature Control and Electric Defrosting System

1. Normal cooling cycle running time = 2 hrs.
2. **Green indicator** glows during normal running.
   Red indicator glows during defrosting.
3. **Main switch** should always be ON when unit is operating. Please note: On switching main power on, the time delay on stabilizer will be about 2 min and thereafter, the unit control panel will get the power supply.
4. The MCB's provided for the **Door Heater** and **Evaporator Heater** must be switched on at all times during operation.
5. During defrosting temperature will rise depending upon loading, door openings, entering product temperature, etc.
6. **Manual Defrosting** is necessary in case the cooling coil freezes, ice build up on the cooling coil result in reduced air flow from evaporator and temperatures not dropping. In such case turn defrost switch once to start the defrosting cycle which will automatically end after defrosting. If the coil continues to freeze frequently check timer settings.
7. **Temperature controller** is set at + 2^0C i.e. cutoff + 2^0C and cutin at + 5^0C.
8. **Electric supply** must be given through stabilizer at all times. Do not by-pass stabilizer.
9. **Independent** earthing (grounding) is necessary for this equipment. Failure to provide the same may damage the equipment.
10. Frequent **power failures** may disrupt the defrosting cycle leading to freezing of the cooling coil. In such case, use manual defrosting to clear the coil of any ice build up.
11. Frequent & long door openings or high entering product temperatures will result in higher box.
12. Do not keep any material in front of the evaporator. Keep evaporator clear on all sides for free air circulation. Similarly, the condensing unit outside should be clear of any obstructions to free air movement entering and leaving the unit. Please ensure that the discharge air is not short cycling into the condenser.
13. The condenser and cooling coil should be kept clean for maximum air flow and efficiency.
14. The change over system will automatically switch over to second unit in case temperature is not achieved 3 hrs of turning on the first refrigeration unit. Unit can be selected through change over switch provided on the control panel.
15. This unit must be serviced by trained service personnel only.

CAUTION

A. Unless air curtain is installed, do not open when refrigeration unit is running. This can lead to serious damage to the compressor.
B. Do not load the cold room until temperature is brought down to + 2^0C.

C. Proper independent grounding (earthing) is necessary for this equipment.

D. Do not keep any material in front of the evaporator unit. Keep the front open for free air circulation.

E. Do not obstruct condensing unit air flow. Free air flow is necessary for safety and proper operation Discharge air should not short cycle into the condenser.

F. In case of excessive frost build up on evaporator coil, manual defrosting is necessary.

G. Use only recommended refrigerant.

H. Refrigeration system must be switched off in case temperature is not maintained below + 15^0C.

I. Data recorder must be connected trough voltage stabilizer with 5 amps fuse on line. Operating instructions provided separately must be followed.

J. In case the temperature of the box is not falling within half hour of turning on the compressor, please shut down system and call service personnel/ check system.

K. Do not use this equipment for maintaining temperatures higher than + 10^0C and lower than + 2^0C.

L. Proper voltage is necessary for normal running of the system. Voltage fluctuations can cause damage to the motors/ compressor. Do not bypass the voltage stabilizer provided.

M. Oil level in the compressor sight glass should maintained at half fitted.

N. Switch off door heater if refrigeration system is not being used.

O. Do not turn on the compressor with the service valves shut.

P. Maintenance schedule provided separately must be strictly followed.

IN CASE OF ANY FURTHER INFORMATION OR ASSISTANCE, PLEASE CONTACT US.

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GENERAL MAINTENANCE SCHEDULE FOR COLDS ROOMS

INTERVAL	CHECK
DAILY	Temperature (should be as set)
	Noise level (should be normal)
	Diesel in generator
	Data recorder
	Frost build-up in evaporator oil
	Generator oil level
	Voltage
WEEKLY	Compressor oil level
	Loose fasteners fan blades, etc.
	Door Heater (if stalled)
	Evaporating Heat
	Defrosting System (if Installed)
	Filter Drier (temperature on both ends should be equal)
	Current drawn
3 MONTHS	Rubber Gaskets
	Evaporator and Condenser coil to be cleaned
	All Motors for greasing current input etc.
	Generator oil change as per Instructions given separately

Note: Maintenance instructions provided separately for Generator and Data Recorder must be followed.

GENERAL OPERATION INSTRUCTIONS FOR YOKOGAWA DATA RECORDER

IMPORTANT- PLEASE READ DETAILED USER AND TECHNICAL MANUALS GIVEN SEPARATELY BEFORE OPERATING RECORDER

Power Switch:	Push type given at the bottom right and corner.
Key Panel:	RCD Key: To start or stop recording.
	DISP Key: Cycles through modes of auto, manual off or display. In auto mode, temperature of both sensors in displayed one after the other. In manual mode, temperature of only one sensor is displayed. In off mode, no display. If this key is pressed for 3 sec, the recorder enters the regular setting mode.
	Δ Key: For selecting in setting mode. Pressing this key for 3 sec enters the pen replacement mode.
	FEED Key: Pressing this key moves the chart. Also can be used for selecting numeric values.
	CH UP Key: Enter key to execute the setting.
Setting up:	Press the DISP key for 3 sec to enter the regular setting mode. Select the RANGE display by using the key. Then press the CH UP key. Use the key to select CH 1. Press CH UP key. Use the key to select 'tc' (thermocouple) Press CH UP key. Select 't' with key (temperature range). Press CH UP key. Make minimum value 0000.0. Press CH UP key. Make maximum value 0050.0. Press CH UP key. RANGE will be displayed. Press CH UP key. Use key to select CH 2. Follow instructions as above. RANGE will be displayed. Press the DISP key for 3 sec to return to the operation mode.
Chart Speed:	Press the DISP key for 3 sec to enter the regular setting mode. Select the CHART display by using the key. Then press the CH UP key. Select SPD 1 with key. Then press the CH UP key. Select chart speed of 10 with key. Then press the CH UP key. CHART will be displayed. Press the DISP key for 3 sec to return to the operation mode.
Pen Replacement:	Pen replacement mode to be followed. Refer to user manual page 2-6 and 2-7.

ELECTRONIC TEMPERATURE CONTROLLER

USER INSTRUCTIONS

IMPORTANT: The electronic temperature controller provided must be handled as per operating instructions below. Failure to do so would result improper functioning which could lead to damage of the refrigeration system. (Detailed operating instructions are given separately).

TO SET TEMPERATURE

Press and hold the SET key for 4 seconds. Display will change to temperature set point and will flash Change the set point with UP and DOWN keys and press SET key to store the new setting. "--- " will confirm the new temperature set point is stored.

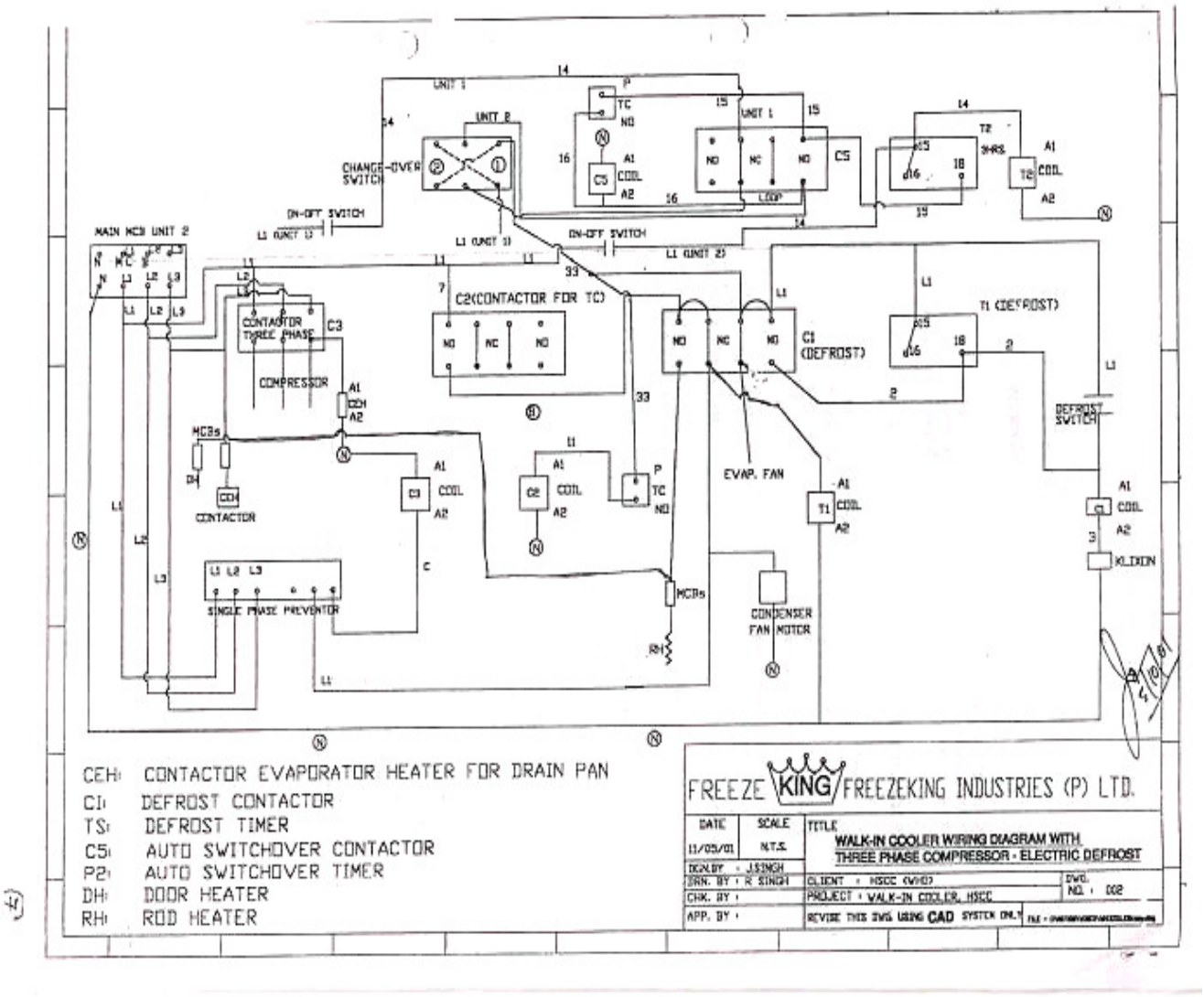
TO SET OTHER PARAMETERS

Press and hold UP and DOWN keys simultaneously for 7 seconds. P1 will flash Press SET key to display the set value and change with UP and DOWN keys. Press SET key to confirm new setting. "---' will confirm new setting and display will return to P mode. Use UP and DOWN keys to go other parameters.

	P MODE	**Enter Value**	
P1	To set for heating or cooling	00	
P2	Max set point and high temp alarm	9^0C	
P3	Min. set point and high temp. alarm	2^0C	
P4	Temperature differential	2	
P5	Probe calibration	0	
P6	Time delay(min.)	2	
E1		00	
LP	Keypad lock	0-Open 1-Lock	
AL	Alarm function		
EP	End Programming – Now press SET Key	Press Set Key	

OPERATING MESSAGES

MESSAGE	**DISCRIPTION**
HT	Temp above max limit P2
LT	Temp. below, limit P3
PP	Probe failure- short circuit open without probe
EE	Memory error


MAIN MCB UNIT 2
ON-OFF SWITCH
CHANGE-OVER SWITCH
UNIT 1
UNIT 2
C2(CONTACTOR FOR TC)
C3 CONTACTOR THREE PHASE
COMPRESSOR
C1 (DEFROST)
T1 (DEFROST)
DEFROST SWITCH
EVAP. FAN
CONDENSER FAN MOTOR
MCBs
CONTACTOR
SINGLE PHASE PREVENTOR
KLIXON
CEH: CONTACTOR EVAPORATOR HEATER FOR DRAIN PAN
CI: DEFROST CONTACTOR
TS: DEFROST TIMER
C5: AUTO SWITCHOVER CONTACTOR
P2: AUTO SWITCHOVER TIMER
DH: DOOR HEATER
RH: ROD HEATER
FREEZE KING FREEZEKING INDUSTRIES (P) LTD.
WALK-IN COOLER WIRING DIAGRAM WITH THREE PHASE COMPRESSOR - ELECTRIC DEFROST