



HC Base Refrigerator



Equipment Manual H&K Model Number 83050.01E

This manual is for the exclusive use of
licensees and employees of
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Warnings

This Installation & Operating Manual contains important instructions and safety information. Read and understand the contents of this manual before attempting to install, operate, or service the unit.

Disconnect all power sources before attempting any service work.

A licensed technician should do all servicing and repairs.

Use of abrasive pads to clean the unit will result in scratching and spoiling the finish of the unit.

Do not leave the door open for extended period of time.

Introduction

The High Capacity Base Refrigerator is designed to hold products between 1°- 5°C temperature during normal and peak sales periods. This new innovative Modular design can be fitted with Drawers or Doors. This unit is energy star qualified with Doors.

Power Requirements

All electrically operated appliances must be electrically grounded in accordance with local codes, or in the absence of local codes, with National Electric Code, ANSI/NFPA No. 70-1990.

Power supply: 120V/50-60hz/1ph
Current = 3.0 Amps
Maximum Fuse/Circuit Breaker = 20A

Inspection

Upon receipt, examine the equipment carefully for any damage. If damage has occurred, notify the freight carrier and H&K immediately.

Uncrate the Unit

This unit will arrive crated in a skid-mounted carton.

Caution! The shipping container may have staples, nails, banding under tension and possible wood splinters, which can cause injuries. Wear gloves and eye protection to reduce the risk of injury when uncrating.

- Cut the banding holding the cardboard carton to the shipping pallet, using heavy scissors or tin snips. Use caution to avoid contact with cut banding.
- Lift the cardboard carton straight up and off the unit.
- Cut the banding that holds the refrigerator to the shipping pallet or skid. Use caution to avoid contact with the cut banding.

***Note: Leave unit on skid until ready to install**

- Peel the protective adhesive film from all exposed areas (front, sides, and interior).

Caution! This unit is very heavy; do not attempt to remove this unit from its packaging without assistance.

Remove Packing & Loose Components

Remove any tape and foam blocking used to secure the loose components.

Wash and Sanitize Unit Interior & Shelving Components

Note! Use only McDonald's approved cleaning and sanitizing agents according to instructions.

Wipe down, sanitize and dry the refrigerator interior.

Operating Instructions






Temperature Setting

The 83050.01E has been tested and preset at the factory to maintain a temperature between 33°F (0°C) and 41°F (5°C). The temperature controller located on the front panel displays the internal temperature of the refrigerator.

To view current set point or if the temperature is not reading within the range specified above, the electronic controller can be adjusted using the following procedure:



SETPOINT

- Press  button for at least half second, to display the setpoint value.
- By keeping  button pressed, use button  or  to set the desired value.
- When  button is released, the new value is confirmed.

A complete manual of the controller is attached with unit.

Operating Procedure

Start-Up: The refrigerator is turned ON by plugging the cord into the outlet on side panel of the table. The evaporator fan shall run immediately, the compressor & the condenser fan shall run after 1 minute delay. Let the unit run for 30 minutes before placing product in the refrigerator.

Temperature Setting: The unit has been tested at the factory and the control has been preset to maintain a temperature between 33° and 41°F (1° and 5°C).

Condensate Disposal: The condensate from the refrigerator is disposed via a drain to a condensate evaporator located in the base of the condensing unit.

Loading and Restocking

- **DO NOT** over-load the refrigerator. All refrigeration requires good air circulation to maintain uniform temperatures.
- **DO NOT** let plastic bags, packaging or containers block or obstruct the Evaporator air intake and return openings.
- **DO NOT** leave the drawer open, except to remove product or to restock.

Cleaning

Caution! Do not use a pressurized spray to clean the 83050.01E.

Caution! Do not use abrasives or strong chemicals to clean any surfaces of the 83050.01E.

Warning! Do not spray liquids directly onto the power switch, into the compressor compartment at the top of the cabinet, or into the evaporator. Doing so will void the warranty and risk serious personal injury.

Exterior Cleaning

The exterior of the unit should be cleaned with EXCEED Glass & Multi-Surface Cleaner. Do not use abrasive cleaners to clean the exterior of the cabinet as this might damage the stainless steel finish. Do not use steel wool or any strong chemicals.

Interior Cleaning

The anodized aluminum interior of the refrigerator can be cleaned using a soft sponge and EXCEED Glass & Multi-Surface Cleaner. Do not allow liquid to puddle in the unit. Wipe the inner liner dry after cleaning.

Preventative Maintenance

Warning! Failure to properly perform scheduled preventative maintenance may void manufacturer's warranty.

WARNING! Verify refrigerator is disconnected from the power source before attempting any preventative maintenance. Failure to disconnect the electric power could result in electric shock, burns, injuries or death.

CAUTION! The fins on a condenser coil are very sharp, and some refrigeration components can be very hot, resulting in possible cuts and/or burns. Avoid physical contact with the fins on the condenser coil or any related refrigeration lines. Gloves are recommended when accessing the internal components of any refrigerated equipment.

Clean the Condenser Coils (Quarterly)

For proper operation of the condensing unit, the condenser fins should be cleaned and vacuumed every one (1) month. The front grill is designed to be removable without the use of tools for this purpose.

Tools:

- Brush
- Vacuum cleaner with attachments.
- Safety Gloves

Procedure

1. Remove appropriate cover to access fins to be cleaned.
2. Vacuum fins to remove any dust or debris that has accumulated.
3. Carefully brush any remaining greasy dust or debris.
4. Replace cover after cleaning.



Remove panel: Lift panel and pull out



Use a soft bristled brush to clean greasy on the coil



Check to see if the door gasket is in good condition

Check the Door Gasket (Quarterly)

Check to see if drawer gasket broken. If the drawer gasket is broken, and cannot seal the cabinet properly, please call 1-800-521-3987 to order replacement gasket.

Product Warranty

H&K International makes the following limited warranties to the original purchaser only for this equipment and replacement parts:

H&K warrants all components to be free of defects in material and workmanship, if properly installed, operated and maintained, for period of (2) years from the date of the delivery.

The company's obligation under this warranty is limited to repairing or replacing any part or parts of the refrigerator determined to be defective by an authorized representative of H&K.

The company reserves the privilege of determining if such repairs are to be made in the field or at the H&K factory.

The company assumes no liability for expenses or repairs made by other parties except by written consent.

Corrections of such defects by repair or replacement shall constitute fulfillment of all company obligations to the purchaser.

H&K shall not be liable for loss, damages or expenses arising from misuse, abuse, alteration, accident or improper installation of the refrigerator such as:

- Improper or unauthorized repair;
- Failure to follow proper installation instruction;
- Improper maintenance;
- Damage in shipment;
- Abnormal use;
- Improper power supply;
- Natural disaster;

Special Conditions

This warranty also does not cover:

- Overtime or holiday charges;
- Consequential damages (the cost of repairing or replacing other property which is damaged), loss of time, profits, use of any other incidental damages of any kind.

Expected life of this equipment is 7 to 10 years provided that it is maintained properly through H&K approved suppliers using only approved component parts and that the unit is cleaned regularly and not abused.

Troubleshooting

Warning: UNPLUG THE POWER CORD
Before open the panel of the machinery
Compartment for checking any issue.



PROBLEM	POSSIBLE CAUSE	WHAT TO DO
Unit does run after plug into the receptacle on the side of the table	Unit is not “fully” plugged in.	Verify unit is plugged into outlet.
	The receptacle on the Wall isn’t working.	Plug the refrigerator into another extension outlet. If the receptacle on the Wall is not working, use alternate and contact licensed electrician to repair it.
	Circuit breaker has been tripped.	Check circuit breaker to see if it has tripped. Reset if necessary. If these steps do not fix problem, call H&K at 800-788-2445.
Refrigerator is running but it won’t reach target operating temperature of 33°F (1°C) to 41° F (5°C).	Condenser Coil is dirty or clogged with debris.	Use a vacuum cleaner or soft brush to clean coils, per Preventative Maintenance instructions. If these steps do not fix problem, Call H&K at 800-788-2445 for service
	Drawer is left opened for extended periods.	Review product loading and general use instructions with crew to ensure drawer is open for restocking and order filling only.
	Room temperature and/or humidity exceed recommended maximums. 100°F (38°C) 50% RH max	Adjust store air conditioning. If these steps do not fix problem, Call H&K at 800-788-2445.

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	Drawer gasket has been broken and door is not properly sealed.	Check drawer gasket condition according to the reference pictures below this table. Call H&K at 800-521-3987 if need to order replacement gasket.
Controller reads "P1"	The sensor probe has failed and must be replaced	Call H&K at 800-788-2445 for service
Controller reads "P2"	The evaporator probe has failed and must be replaced	Call H&K at 800-788-2445 for service
Controller read 'def'	Unit is currently in defrost cycle.	If unit does not go back to normal operation after 1 hour, Call H&K at 800-788-2445 for service
Controller read 'rec'	Unit is currently is in recovery after defrost.	If unit does not go back to normal operation after 1 hour, Call H&K at 800-788-2445 for service

Gasket condition reference pictures:

Gasket in good condition

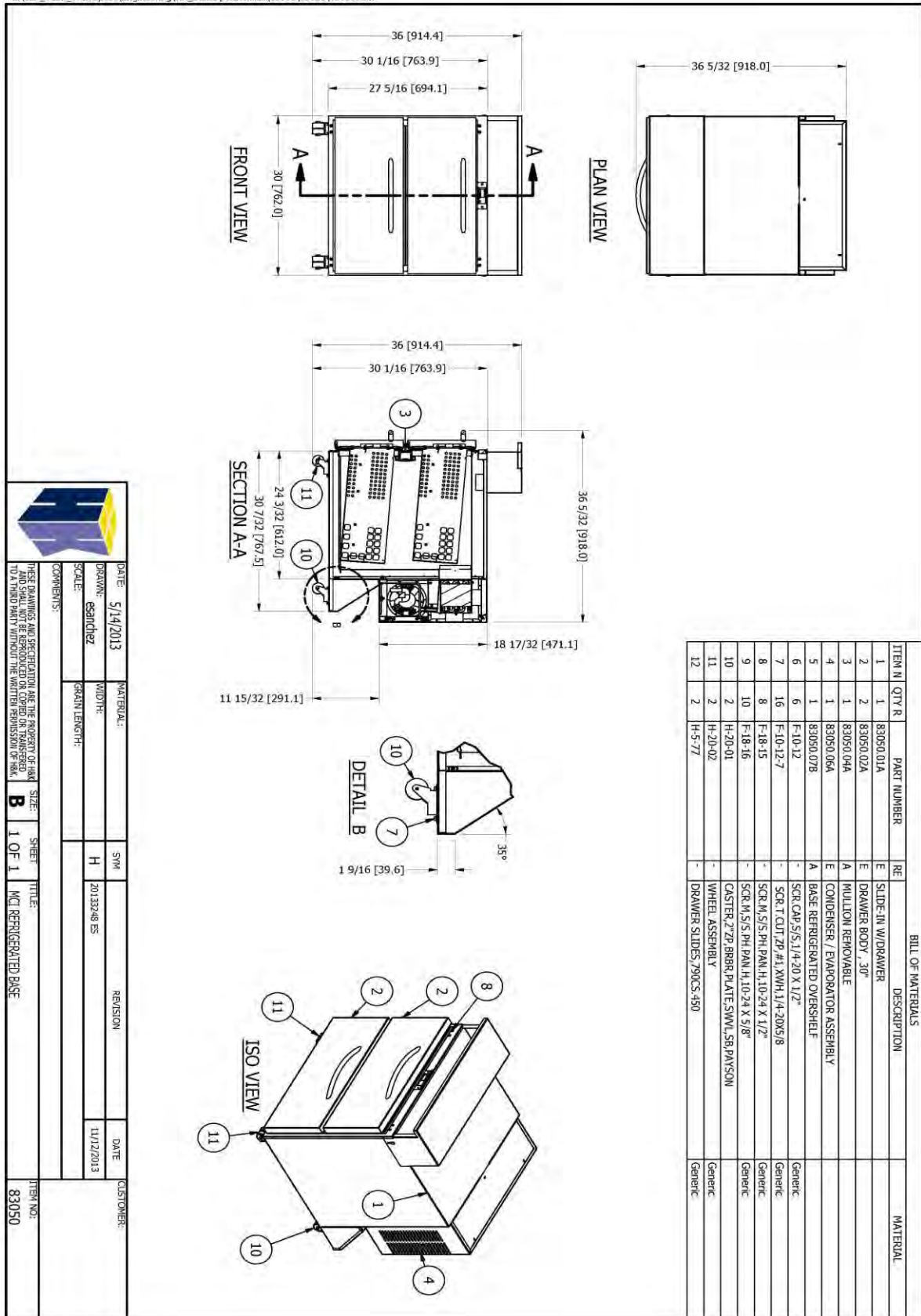


Gasket broken, need to be replaced

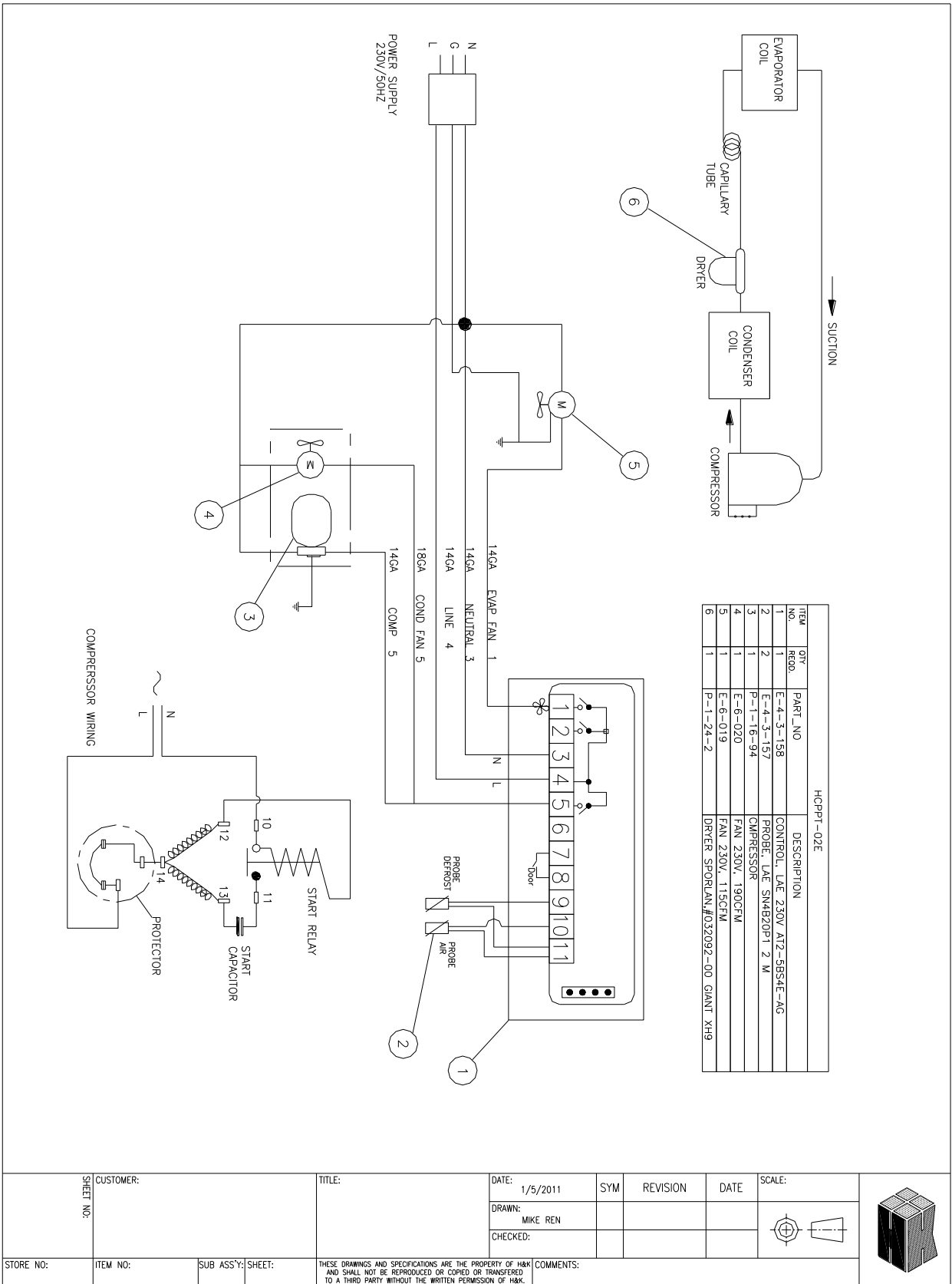


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Refrigeration Specification

Refrigerant	R-134A
Operating pressure	LSP = 15 psig HSP = 100 psig
Electrical Data	120v-1ph-50hz MCA 3.0 MAX. FUSE 20amps
System charge	8.5 oz (240g)

Replacement Parts

DESCRIPTION	H&K PART NO.
Compressor	P-1-307
Capillary tube	5 ft (1.53 m) of P-2-7-1
Dryer	P-1-24-2
Controller	G-R02043
Probe	E-4-3-157
Power cord	E-10-12-8

Appendix: Controller Manual

AT2-5 INSTRUCTIONS FOR USE

Thank you for having chosen a LAE electronic product. Before installing the instrument, please read these instructions carefully to ensure maximum performance and safety.

DESCRIPTION



Fig.1 — Front panel

- Info / Setpoint button.
- Manual defrost / Decrease button.

INDICATIONS

- Thermostat output
- Fan output
- Auxiliary output
- Activation of 2nd parameter set
- Alarm
- Increase / manual activation button.
- Exit / Stand-by button.

INSTALLATION

- Insert the controller through a hole measuring 71x29 mm.
- Make sure that electrical connections comply with the paragraph "wiring diagrams". To reduce the effects of electromagnetic disturbance, keep the sensor and signal cables well separate from the power wires.
- Fix the controller to the panel by means of the suitable clips, by pressingly gently; if fitted, check that the rubber gasket adheres to the panel perfectly, in order to prevent debris and moisture infiltration to the back of the instrument.
- Place the probe T1 inside the room in a point that truly represents the temperature of the stored product.
- Place the probe T2 on the evaporator where there is the maximum formation of frost.

OPERATION

DISPLAY

During normal operation, the display shows either the temperature measured or one of the following indications:

DEF	Defrost in progress	HI	Room high temperature alarm
REC	Recovery after defrost	LO	Room low temperature alarm
OFF	Controller in stand-by	E1	Probe T1 failure
CL	Condenser clean warning	E2	Probe T2 failure
DO	Door open alarm		

INFO MENU

The information available in this menu is:

T1	Instant probe 1 temperature	TLO	Minimum probe 1 temperature recorded
T2	Instant probe 2 temperature	CND	Compressor working weeks
THI	Maximum probe 1 temperature recorded	LOC	Keypad state lock

Access to menu and information displayed.

- Press and immediately release button .
- With button or select the data to be displayed.
- Press button to display value.
- To exit from the menu, press button or wait for 10 seconds.


Reset of THI, TLO, CND recordings

- With button or select the data to be reset.
- Display the value with button .
- While keeping button pressed, use button .

SETPOINT (display and modification of desired temperature value)

- Press button for at least half second, to display the setpoint value.
- By keeping button pressed, use button or to set the desired value (adjustment is within the minimum **SPL** and the maximum **SPH** limit).
- When button is released, the new value is stored.


STAND-BY

Button , when pressed for 3 seconds, allows the controller to be put on a standby or output control to be resumed (with **SB=YES** only).

KEYPAD LOCK


The keypad lock avoids undesired, potentially dangerous operations, which might be attempted when the controllers is operating in a public place. In the INFO menu, set parameter **LOC=YES** to inhibit all functions of the buttons. To resume normal operation of keypad, adjust setting so that **LOC=NO**.

SELECTION OF SECOND PARAMETER GROUP

It's possible to select control parameters between two different pre-programmed groups, in order for the fundamental control parameters to be adapted quickly to changing needs. With **IISM=MAN**, changeover from Group I to Group II takes place manually by pressing button  for 2 seconds. The activation of Group II is signalled by the lighting up of the relevant LED on the controller display. If **IISM=NON**, switchover to group II is inhibited.

DEFROST

Timed defrost. Defrosting starts automatically when necessary time has elapsed to obtain the defrosting frequency set with **DFR (IIDF)**. For example, with **DFR=4** defrosting occurs once every 6 hours. The internal timer is set to zero when power is applied to the controller and at each subsequent defrost start. When the controller is put on a standby, the accumulated time count is "frozen" (is not incremented).

Manual defrost. Defrosting may also be induced manually by keeping the button  pressed for 2 seconds.











Defrost type. Once defrost has started, Compressor and Defrost outputs are controlled according to the parameters **DTY** and **OAU**. The AUX output is associated to defrost function with **OAU=DEF** exclusively. If **FID=YES** the evaporator fans are active all through defrost.

Defrost termination. Defrost lasts as long as time **DTO** but, if the evaporator probe has been enabled (**T2=YES**) and temperature **DLI** is achieved before this time elapses, defrost will be terminated in advance.

Resuming thermostatic cycle. When defrost is over, if **DRN** is greater than 0, all outputs will remain off for **DRN** minutes, in order for the ice to melt completely and the resulting water to drain. Moreover, if probe T2 is active (**T2=YES**), the fans will re-start when the evaporator gets to a temperature lower than **FDD**; Vice versa, if such condition does not occur after 4 minutes following defrost termination, the fans will be switched on anyway.

Caution: if C-H=HEA all defrost functions are inhibited; if DFR=0 the timed defrost function is excluded; during defrost, the high temperature alarm is inhibited.

CONFIGURATION PARAMETERS

- The setup menu is accessed by pressing button + for 5 seconds.
- With button  or  select the parameter to be modified.
- Press button  to display the value.
- By keeping button  pressed, use button  or  to set the desired value.
- When button  is released, the newly programmed value is stored and the following parameter is displayed.
- To exit from the setup, press button  or wait for 30 seconds.

PAR	RANGE	DESCRIPTION
SCL	1°C; 2°C; °F	Readout scale. 1°C (only with INP=SN4): measuring range -50/-9.9 ... 19.9/80°C 2°C: measuring range -50 ... 120°C °F: measuring range -55 ... 240°F Caution: upon changing the SCL value, it is then <u>absolutely</u> necessary to reconfigure the parameters relevant to the absolute and relative temperatures (SPL , SPH , SP , ALA , AHA , etc..)
SPL	-50..SPH	Minimum limit for SP setting
SPH	SPL.120°	Maximum limit for SP setting


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SP	SPL... SPH	Setpoint (value to be maintained in the room).
C-H	REF; HEA	Refrigerating (REF) or Heating (HEA) control mode
HYS	1...10°	OFF/ON thermostat differential Refrigerating control (C-H=REF) Heating control (C-H=HEA)
CRT	0...30min	Compressor rest time. The output is switched on again after CRT minutes have elapsed since the previous switchover. We recommend to set CRT=03 with HYS<2.0° .
CT1	0...30min	Thermostat output run when probe T1 is faulty. With CT1=0 the output will always remain OFF.
CT2	0...30min	Thermostat output stop when probe T1 is faulty. With CT2=0 and CT1>0 the output will always be ON. Example: CT1=4, CT2=6 : In case of probe T1 failure, the compressor will cycle 4 minutes ON and 6 minutes OFF.
CSD	0...30min	Compressor stop delay after the door has been opened (active only if DS=YES).
DFR	0... 24(1/24h)	Defrost frequency expressed in cycles/24 hours.
DLI	-50...120°	Defrost end temperature.
DTO	1...120min	Maximum defrost duration.
DTY	OFF; ELE; GAS	Defrost type OFF: off cycle defrost (Compressor and Heater OFF). ELE: electric defrost* (Compressor OFF and Heater ON). GAS: hot gas defrost* (Compressor and Heater ON). * The defrost output is active if only OAU=DEF .
DRN	0...30min	Pause after defrost (evaporator drain down time).
DDY	0...60min	Display during defrost. If DDY=0 during defrost the temperature continues to be displayed. If DDY > 0 , during defrost the display shows DEF, and at the end of defrost it shows REC for DDY minutes.
FID	NO/YES	Fans active during defrost.
FDD	-50...120°	Evaporator fan re-start temperature after defrost.
FTC	NO/YES	Optimised fan control enabling. With FTC = NO the fans remain on all the time Fig. 2 Optimised fan control (FTC=YES)
FT1	0...180sec	Fan stop delay after compressor stop. See Fig. 2.

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FT2	0...30min	Timed fan stop. With FT2 =0 the fans remain on all the time.
FT3	0...30min	Timed fan run. With FT3 =0, and FT2 > 0, the fans remain off all the time.
ATM	NON; ABS; REL	<p>Alarm threshold management.</p> <p>NON: all temperature alarms are inhibited (the following parameter will be ADO).</p> <p>ABS: the values programmed in ALA and AHA represent the real alarm thresholds.</p> <p>REL: the values programmed in ALR and AHR are alarm differentials referred to SP and SP+HY.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Temperature alarm with relative thresholds, refrigerating control (ATM=REL, C-H=REF).</p> </div> <div style="text-align: center;"> <p>Temperature alarm with relative thresholds, heating control (ATM=REL, C-H=HEA).</p> </div> </div>
ALA	-50... 120°	Low temperature alarm threshold.
AHA	-50... 120°	High temperature alarm threshold.
ALR	-12... 0°	Low temperature alarm differential. With ALR =0 the low temperature alarm is excluded.
AHR	0... 12°	High temperature alarm differential. With AHR =0 the high temperature alarm is excluded.
ATD	0... 120min	Delay before alarm temperature warning.
ADO	0... 30min	Delay before door open alarm warning.
ACC	0...52 weeks	Condenser periodic cleaning. When the compressor operation time, expressed in weeks, matches the ACC value programmed, "CL" flashes in the display. With ACC =0 the condenser cleaning warning is disabled.
IISM	NON; MAN;	<p>Switchover mode to second parameter set</p> <p>NON: inhibition to use the second parameter group (the following parameter will be SB).</p> <p>MAN: button switches the two parameter groups over.</p>
IISL	-50...IISH	Minimum limit for IISP setting.
IISH	IISL...120°C	Maximum limit for IISP setting.
IISP	IISL... IISH	Setpoint in mode 2
IIHY	1...10°	OFF/ON differential in mode 2.
IIFT	NO/YES	Optimised fan control enabling in mode 2.
IIDF	0...99hours	Defrost timer set to start a defrost in mode 2.
SB	NO/YES	Stand-by button enabling .
DS	NO/YES	Door switch input enabling (closed when door is closed).

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LSM	NON; MAN; DOR	Light control mode NON : light output not controlled. MAN : light output controlled through button  (if OAU =LGT). DOR : light output switched on when door is opened (if OAU =LGT).
OAU	NON; 0-1; DEF; LGT; AL0; AL1	AUX output operation. NON : output disabled (always off). 0-1 : the relay contacts follow the on/standby state of controller. DEF : output programmed for defrost control. LGT : output enabled for light control. AL0 : contacts open when an alarm condition occurs. AL1 : contacts make when an alarm condition occurs.
INP	SN4; ST1	Temperature sensor selection. With INP = SN4, the probes must be the LAE models SN4...; with INP = ST1, the probes must be the LAE models ST1...
OS1	-12.5..12.5°C	Probe T1 offset.
T2	NO/YES	Probe T2 enabling (evaporator).
OS2	-12.5..12.5°C	Probe T2 offset.
TLD	1...30 min	Delay for minimum temperature (TLO) and maximum temperature (THI) logging.
SIM	0...100	Display slowdown.
ADR	1...255	AT2-5 address for PC communication.

WIRING DIAGRAM

