INSTRUCTION MANUAL

KU SERIES FULL-SIZE UNDERCOUNTER REFRIGERATORS
KU044SC, KU072SC & KU100SC

KAIRAK. 4401 Blue Mound Rd., Fort Worth, TX 76106, Phone: (714) 870-8661, Web: www.kairak.com

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1. THE SERIAL TAG

The serial tag is a permanently affixed label on which is recorded vital electrical and refrigeration data about your Kairak product, as well as the model and serial number. This tag is located inside the lower storage cabinet on the right hand wall on all standard KRP models. Prior to installation, test the electrical service to assure that it agrees with the specifications of the equipment marked on the serial tag.

READING THE SERIAL TAG

- **Serial =** The permanent ID# of your Kairak unit
- **Model =** The model # of your Kairak unit
- **Volts =** Voltage
- **Hz =** Cycle
- **PH =** Phase
- **Total Current =** Maximum amp draw
- **Minimum Circuit =** Minimum circuit ampacity
- **Lights =** Light wattage
- **Heaters =** Heater amperage (Hot Food units only)
- **Refrigerant =** Refrigerant type used
- **Design Pressure =** High & low side operating pressures and refrigerant charge
- **Agency Labels =** Designates agency listings

SERIAL **MODEL**
VOLTS **HZ** **PH**

TOTAL CURRENT **AMPS**
MINIMUM CIRCUIT **AMPS**
MAXIMUM OVERCURRENT PROTECTION **AMPS**
LIGHTS **WATTS**
HEATERS **AMPS**

REFRIGERANT **TYPE** **OZ**
DESIGN PRESSURE **HIGH** **LOW**

REFRIGERANT **TYPE** **OZ**
DESIGN PRESSURE **HIGH** **LOW**

FIG. 1

2. RECEIPT INSPECTION

All Kairak products are factory tested for performance and are free from defects when shipped. The utmost care has been taken in crating this product to protect against damage in transit.

You should carefully inspect your Kairak unit for damage during delivery. If damage is detected, you should save all the crating materials and make note on the carrier's Bill Of Lading describing the damage. A freight claim should be filed immediately. If damage is subsequently noted during or immediately after installation, contact the respective carrier and file a freight claim. There is a fifteen (15) day limit to file freight damage with the carrier. Under no condition may a damaged unit be returned to Kairak without first obtaining written permission (return authorization). You may contact Kairak customer care at (714) 870-8661 to request a return.

3. INSTALLATION

3A - LOCATION:

Select a proper location for your unit, away from extreme heat or cold. Allow enough clearance between the unit and the side wall in order to make use of the door stay open feature at 1200 (self-closing feature operates up to 900). The door(s) must be able to open a minimum of 900 in order to make use of the maximum clear door width.

3B - PACKAGING:

Your Kairak unit is shipped from the factory bolted to a sturdy wooden pallet in stretch wrapped material.

Most exterior stainless steel surfaces have a protective vinyl covering to prevent scratching during manufacturing, shipping and installation. After the unit is installed in place of application peel, remove and discard the covering from all surfaces.

To remove the wooden pallet, first if at all possible, we suggest that the cabinet remain bolted to the pallet during all transportation to the point of final installation. The bolts can then be removed with a 1/2" socket wrench. Avoid laying the unit on its front, side or back for removal of the pallet.

NOTE: Kairak does not recommend laying the unit on its front, side or back. If you must, please allow the unit to remain in an upright position for 24 hours before plugging it in so that the compressor oils and refrigerant may settle.

3. INSTALLATION (CONT.)

3C - INSTALLING/ADJUSTING LEGS OR CASTERS:

To install legs or casters, slide leg or caster into the caster channel from the side of the unit without the refrigeration system.

To adjust the legs or casters, loosen the two bolts and move leg or caster to desired location, spacing between leg or caster not to exceed 48 inches. Leg or caster on each end of the unit can not exceed 8 inches from the end of the cabinet (Figure 1).

NOTE: Kairak recommends to position legs or casters under the mullion when possible.

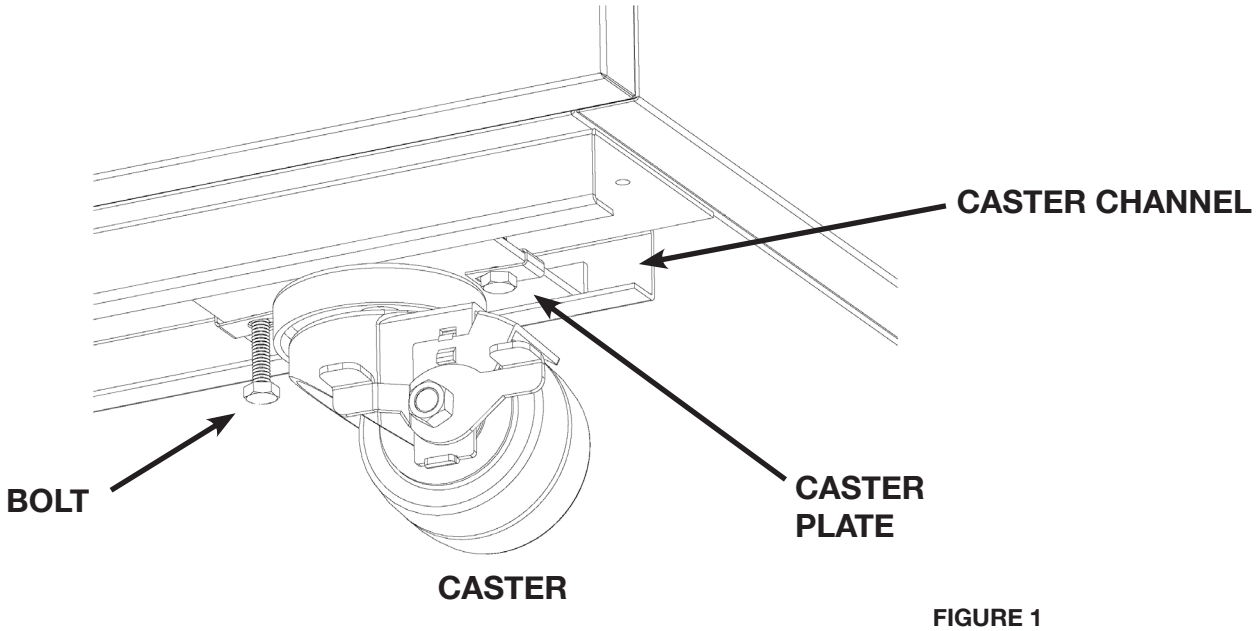


FIGURE 1

3D - CORD & PLUG:

All self-contained models are shipped standard with a NEMA 5-15P plug and 9 foot cord. Select only a dedicated electrical outlet for power source.

NOTE: Do not under any circumstances, cut or remove the round grounding prong from the plug, or use an extension cord.

3E - POWER SUPPLY:

The supply voltage should be checked prior to connection to be certain that proper voltage for the cabinet wiring is available (refer to the serial tag to determine correct unit voltage, see page 1). Make connections in accordance with local electrical codes. Use qualified electricians.

Use of a separate, dedicated circuit is required. Size wiring to handle indicated load and provide necessary overcurrent protector in circuit (see amperage requirements on the unit's serial tag).

4. OPERATION

4A - REFRIGERATORS

Both refrigerators and Freezers do not require manual defrosting. During normal operation, a refrigerator continuously circulates above freezing cabinet air through the coil. A compressor “OFF” cycle occurs every 2 1/2 Hours for 20 minutes to melt any frost which may accumulate on the coil during the compressor “ON” cycle. The control will read “dEF” and the green water drop will be illuminated (Figure 2). With standard holding refrigerators, high relative humidity is also maintained to prevent dehydration of stored product.

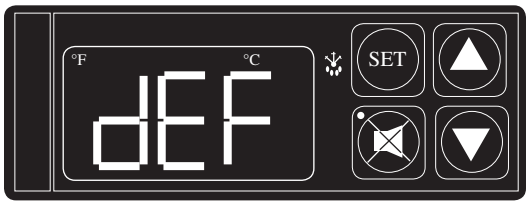


FIGURE 2

4B - FREEZERS:

During normal operation, a freezer continuously circulates below freezing cabinet air through the coil. The coil requires a periodic defrosting for proper operation. This is accomplished by an automatic, time activated, temperature/time terminated, defrost program, utilizing hot gas from the refrigeration system. The controller is preset at the factory for six equally spaced defrost cycles within each 24-hour period.

At the start of a freezer defrost cycle, the compressor, condenser fan and evaporator fan shut off. The hot gas relay will be energized, this will energize the hot gas solenoid valve thru the normally open contacts and the condenser fan circuit will be de-energized thru the (normally closed contacts), and the compressor will restart. When the evaporator coil sensor reaches 400 F the coil is fully defrosted or if the maximum time of defrost duration (20 minutes) is reached (which ever comes first) then the defrost hot gas relay is de-energized. The condenser fan restarts and the hot gas solenoid valve closes, The compressor system returns to the cooling mode. Total refrigeration system operation is then resumed (green snowflake icon goes out) and the display will show def for an additional 10 minutes then return to reading the inside cabinet temperature. The evaporator fan(s) are delayed from starting at the termination of the defrost cycle and will automatically resume by time or temp delay (5 minutes or 300 F coil sensor temperature, whichever comes first).

During freezer defrost operation, heat is confined to the coil enclosure to prevent any significant rise in temperature within the food zone. The fan delay control function upon termination of a defrost cycle is two-fold. First, to prevent blowing warm air into the food storage area. Second, to prevent any condensation on the defrost coil from being blown into the food storage area.

The microprocessor control is set from the factory to terminated defrost at 20 minutes in the event of sensor failure. This setting should never be tampered with, without first consulting Kairak’s Technical Service department.

5. CLEANING THE CONDENSER/FILTER

The most important thing you can do to insure a long, reliable service life for your Kairak is to regularly clean the condenser coil and or filter if provided.

The microprocessor control will notify you through a “CLN-FIL” message when the condensing temperature of the refrigerator reaches 140 degrees F or greater. If the condensing temperature reaches 160 degrees F the compressor will automatically turn off . When the temperature drops below 140 degrees F the compressor will restart and when the temperature drops below 120 degrees F the alarm will reset.

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY BEFORE CLEANING ANY PARTS OF THE UNIT.

To clean the condenser/filter, first disconnect electrical power to the cabinet and remove the front louver assembly. To do so, place hands under the louver panel and pull out and up to get louver panel off bracket of the unit (Figure 3).

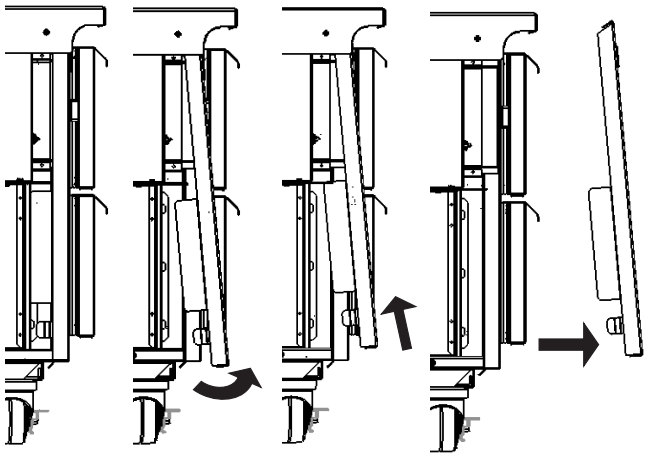


FIGURE 3

Proceed to vacuum or brush any dirt, lint or dust from the finned condenser coil/filter, the compressor and other cooling system parts. If significant dirt is clogging the condenser fins or filter, use compressed air to blow this clear. To replace the louver assembly reverse the process.

5. CLEANING THE CONDENSER/ FILTER (CONT.)

5B - REPLACING THE GASKETS:

To remove the gasket to be replaced, grasp it firmly by one corner and pull it out. Before attempting to install a new gasket, both the unit and the gasket itself must be at room temperature. Insert the four corners first by using a rubber mallet (or hammer with a block of wood). After the corners are properly inserted, work your way towards the center from both ends by gently hitting with a mallet until the gasket is completely seated in place (see figure below for proper gasket placement).

NOTE: The gasket may appear too large, but if it is installed as indicated above it will slip into place.

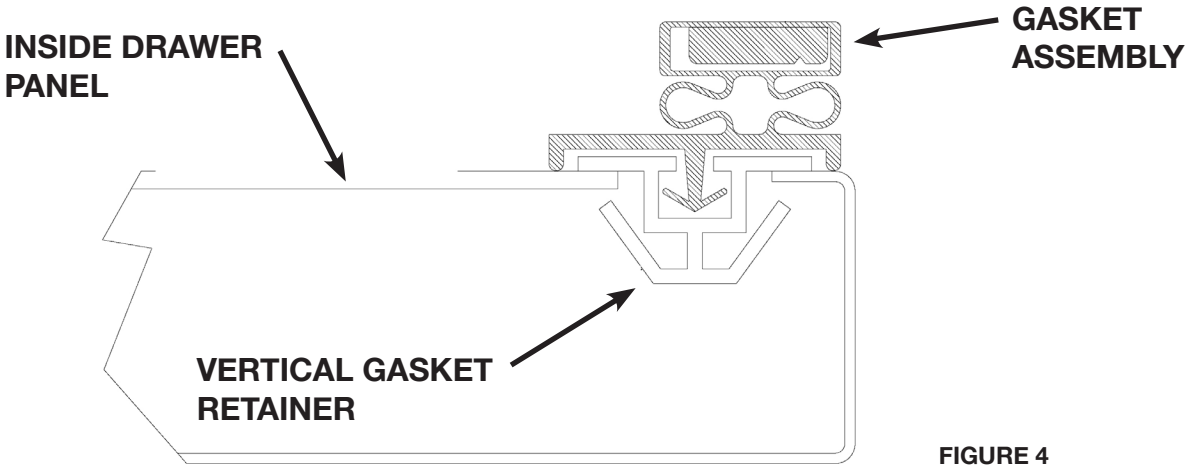


FIGURE 4

5C - CLEANING THE CABINET SURFACES:

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY BEFORE CLEANING ANY PARTS OF THE UNIT.

Exterior stainless steel should be cleaned with warm water, mild soap and a soft cloth. Apply with a dampened cloth and wipe in the direction of the metal grain.

Avoid the use of strong detergents and gritty, abrasive cleaners as they may tend to mar and scratch the surface. Do NOT use cleansers containing chlorine, such as bleach, this may promote corrosion of the stainless steel.

Care should also be taken to avoid splashing the unit with water, containing chlorinated cleansers, when mopping the floor around the unit.

For stubborn odor or spills, use baking soda and water (mixed to a 1 tbsp baking soda to 1 pint water ratio).

A stainless steel polish is recommended for shining of unit.

6. DOOR(S) AND REFRIGERATOR DRAWER(S)

Your Kairak full-size undercounter model door(s) are field re-hingeable. If re-hinging is required, please contact our in-house service department at 800-833-1106 for instruction.

6A - REMOVING THE DOOR AND INSTALLING REF DRAWERS:

Doors are supplied standard on all TU Series Full-Size Undercounter models. However, we have engineered our refrigerator models (only) with a drop-in feature that allows you to easily convert door(s) into two 6" deep drawers or three 4" deep drawers.

The door(s) on the refrigerator models (only) can easily be converted to drawers in the field. To begin the process, open the door to its maximum position. Support the non-hinged end of the door so minimum movement occurs. When the bolts from the lower hinge plate are removed, remove the lower hinge plate and then the door from the top hinge bracket plate and then the door from the top hinge bracket. The hinge plate pin and plastic bushing will remain in the top hinge plate.

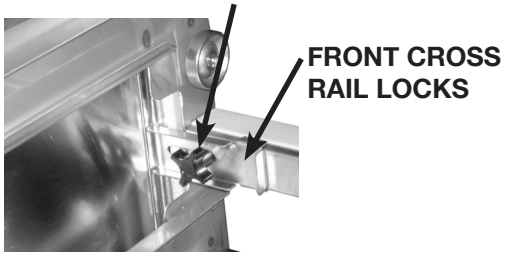
NOTE: The lower hinge plate is under spring tension.

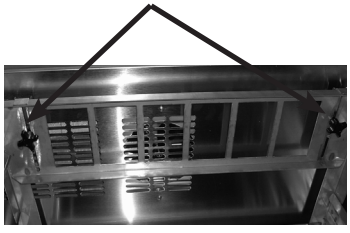
Once the door(s) have been removed, Insert drawer frame as shown below (Figure 5).

FIGURE 5

Once the drawer frame has been inserted, the drawer frame module can be installed by tighting the black front and back clamping knobs (2 of each) located on the cross rail locks and liner locks. Slide the front cross rail locks towards the center of the drawer frame module and allow the liner locks to drop down from the top of the liner. Insert the door frame module push towards the back of the unit. The entire frame assembly is now installed and ready for use.

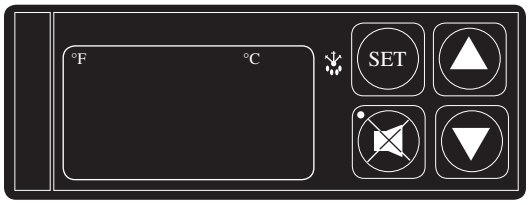
NOTE: Repeat process for multiple drawer(s) inserts.





7. MICROPROCESSOR CONTROL

Your new refrigerator or freezer cabinet is equipped with a state-of-the-art microprocessor control, which precisely regulates operation and provides alarms when problems occur. It is supplied from the factory completely ready for use and requires no adjustments, but without the audible alarms activated. See pages 10 thru 16 for more information.



MICROPROCESSOR CONTROL

7A - CONTROL FEATURES:

Internal Time Clock

- Eliminates external defrost time clock.
- Defrost cycle can be quickly adjusted to suit individual location and use.
- Must be set at power-up. (See page 11, “Setting the 24-Hour Clock”)
- Will automatically update for Daylight Savings Time.

Water Resistant Housing

The face of the control is water resistant to provide for protection during cleaning.

Parameter/Service Levels

See “Customer / Service Parameters” on Page 9.

Defrost Lockouts - See “Setting Defrost Lockouts” on page 14.

Customers can set up to 4 different defrost lockout periods. The lockout prevents the unit from going into a defrost cycle during peak kitchen use. Note: The 24-hour clock must be set for this feature to operate correctly.

Anti-Condensate Door Perimeter Heater Control

The “No-Sweat” feature is an energy savings system that allows the customer to adjust the percent of time for the door/drawer heater to be “On” as needed for the prevailing ambient conditions (from 0 - 100% of the time each day). It is used to prevent condensation from forming around the perimeter of the drawers. The factory default setting is 100%. Adjust this set point down to a point just before condensation forms to save energy.

7. MICROPROCESSOR CONTROL (CONT.)

7A - CONTROL FEATURES (CONT.):

Alarms (See the following pages for explanations)

- High Cabinet Air Temperature
- Low Cabinet Air Temperature
- Loss Of Power
- Sensor Failure
- Clean Condenser

Display Features

- 3-Digit LED Display
- Defrost in Progress Icon
- Fahrenheit or Celsius Temperature Scale In Use

7B - ALARM EXPLANATIONS:

NOTE: Explanation of alarms assume the audible alarm style is set at a 3-second burst or a continuous audible alarm. References to the audible alarm do not apply if the audible alarm style is set to OFF (Refer to page 16 for setting the audible alarm style).

High Cabinet Air Temperature: The audible alarm will sound and the display will read HI CAb when the temperature inside the cabinet rises above a pre-programmed limit. The limit is determined by the type of unit being operated (i.e.: refrigerator/ freezer). To turn off the audible alarm, press the alarm cancel button. The visual alarm text will continue to display until the cabinet air temperature falls below the limit. If the temperature does not fall below the limit within 5 minutes, the audible alarm* will sound again and an additional Call Service message will display.

POSSIBLE CAUSES

- Doors open for extended periods of time
- Large amounts of hot product placed inside the cabinet
- Condenser coil dirty
- Cooling Compressor Failure. Call Service
- Refrigeration Problems

7. MICROPROCESSOR CONTROL (CONT.)

7B - ALARM EXPLANATIONS (CONT.):

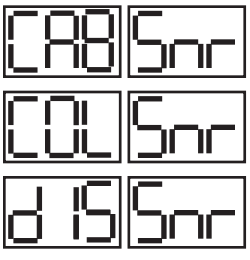
Low Cabinet Air Temperature: The audible alarm will sound and the display will read Lo Cab when the temperature inside the cabinet falls below a pre-programmed limit. The limit is determined by the type of unit being operated (i.e.: refrigerator/ freezer). To turn off the audible alarm, press the alarm cancel button. The visual alarm text will continue to display until the cabinet air temperature rises above the limit. If the temperature does not rise above the limit within 5 minutes, the audible alarm will sound again and an additional Call Service message will display.

POSSIBLE CAUSES:
- No product in unit
- Failed sensors
- Stuck Evaporator Relay

Loss Of Power: The audible alarm will sound and the display will read ELE LOS, when the unit regains power after an outage. To turn off the audible alarm and/or clear the visual text, press the alarm cancel button.

Condenser Clean: The audible alarm will sound and the display will read “Clean Filter” when discharge temperatures exceeds 140 degrees. As the load on the condenser decreases, the alarm will turn off by itself. As the temperature on the condenser continue to rise, the audible alarm will return until the problem has been eliminated.

NOTE: If discharge temperature rises above 1600F the compressor & condenser fan motor will be switched off until the discharge temp falls below 1400F

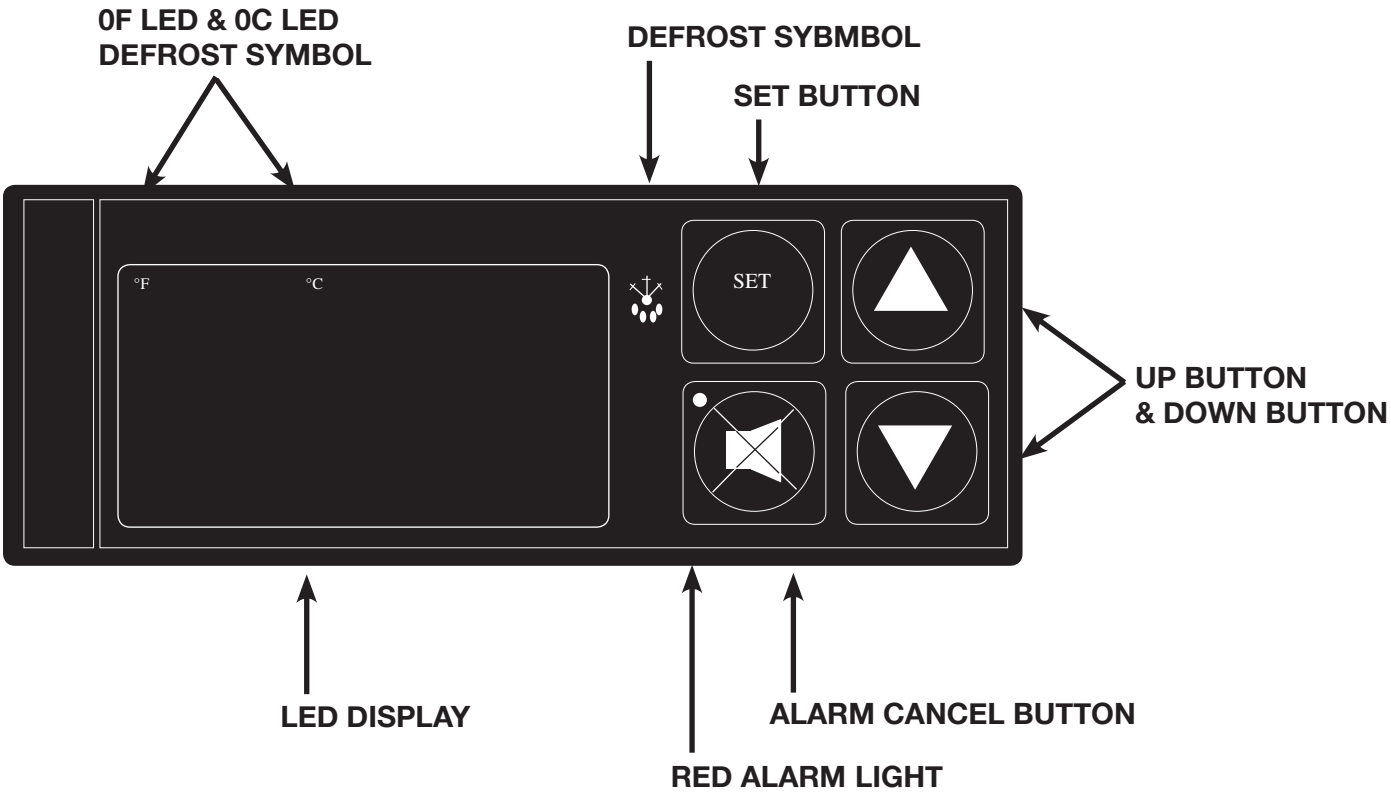


Sensor Failures: The audible alarm will sound and the display will read CAB SEN, COL SEN or DIS SEN when that particular sensor has failed to operate. To turn off the audible alarm, press the alarm cancel function of the sensor, the audible alarm will sound again in either 5 minutes or 24 hours.

NOTE: Test sensor in ice water.

7. MICROPROCESSOR CONTROL (CONT.)

7C - CONTROL PANEL DIAGRAM:



VII. D - NOTES TO THE USER:

You only have 20-30 seconds between button pushes. If you take longer than 30 seconds, the controller will revert back to displaying the cabinet temperature. If you enter the wrong security code, the controller will revert back to displaying the cabinet temperature. You can exit the parameters at any time by pressing the alarm cancel button or by waiting 20-30 seconds.

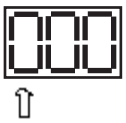
7. MICROPROCESSOR CONTROL (CONT.)

7E - ENTER THE SERVICE ACCESS:

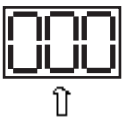
Use the security code 0, A, 1  and the following instructions:

Press the set button SET . The display will read  Service Access.

Press the set button SET .

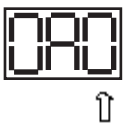
The display will show three zeros with the left zero flashing 

Press the set button SET .

The display will show three zeros with the center zero flashing 

Press the down arrow key to sequence through F, E, d, C, b, A, 9, 8, 7,…etc.

When you reach A press set SET .

The display will show zero, A, zero with the right zero flashing 

Press the up arrow key to sequence through 1, 2, 3, 4, 5, 6, 7, 8, 9, A, b,…etc.

When you reach 1 press set SET .

The display will read  Thermostat Set Point High. Press SET to view and SET again to exit.

You are now in the SERVICE PARAMETERS.

7. MICROPROCESSOR CONTROL (CONT.)

VII. F - SERVICE PARAMETERS:

Listed below are the available parameters in the order they appear, using the down arrow key on the controller. You can use either the up or down arrow keys to scroll through the options.


Thermostat Set Point High


Thermostat Set Point Low


Temperature Scale


Time (24-hour clock)


Date (month-day-year)


Daylight Savings


Start Manual Defrost


Defrost Lockout 1


Defrost Lockout 2


Defrost Lockout 3


Defrost Lockout 4


Dew Point
Compensation Factor


Room Temperature Offset


Audible Alarm Style


Cabinet Air Sensor Temp


Evaporator Coil SensorTemp


Discharge Line Sensor Temp

7. MICROPROCESSOR CONTROL (CONT.)

7G - ADJUSTING THERMOSTAT SET POINT HIGH:

This parameter sets the high point of the desired cabinet temperature range. Typically, freezers will range from -3° F to 0° F (-19° C to –18° C) and refrigerators will range from 36° F to 40° F (2° C to 4° C) for this parameter setting. This parameter is preset at the factory and does not have to be adjusted unless the customer chooses to do so. Note: Set Point Low and Set Point High cannot be set to the same temperature. There must be at least 1-2 degree difference between the two settings.

Follow the instructions to enter the customer access code on page 8. When the control display reads  Thermostat Set Point High. Press the set button  .

Use the arrow keys  to adjust the temperature to your desired setting.

When the display shows the temperature you want press the set button  .

The display will then read  Thermostat Set Point High.

You can use the up or down arrow keys to scroll to the next parameter  .

or press the alarm cancel button to exit  .

7H - ADJUSTING THERMOSTAT SET POINT LOW:

This parameter sets the low point of the desired cabinet temperature range. Typically, freezers will range from –6° F to -4° F (-21° C to –20° C) and refrigerators will range from 32° F to 34° F (0° C to 1° C) for this parameter setting. This parameter is preset at the factory and does not have to be adjusted unless the customer chooses to do so. Note: Set Point Low and Set Point High cannot be set to the same temperature. There will be at least 1-2 degree difference between the two settings.

Follow the instructions to enter the service access code on page 8. When the control displays  Thermostat Set High, press the down arrow key  until the control display reads  Thermostat Set Point Low. Press the set button  .

Use the arrow keys  to adjust the temperature to your desired setting.

When the display shows the temperature you want press the set button  .

The display will then read  Thermostat Set Point Low.

You can use the up or down arrow keys to scroll to the next parameter  .

or press the alarm cancel button to exit  .

7. MICROPROCESSOR CONTROL (CONT.)

7I - CHANGING THE TEMPERATURE SCALE:

The temperature scale determines if the temperature displayed will be in degrees Fahrenheit or degrees Celsius.

Follow the instructions to enter the customer access code on page 8. When the control displays SPH Thermostat Set High, press the down arrow key until the control display reads SCL Temperature Scale. Press the set button SET .

The display will start with the current setting either S F for degrees Fahrenheit or S C for degrees Celsius.

Use the arrow keys to toggle between the options.

When the display shows the scale you want press the set button SET .

The display will then read SCL Temperature Scale.

You can use the up or down arrow keys to scroll to the next parameter or press the alarm cancel button to exit .

7. MICROPROCESSOR CONTROL (CONT.)

7J - SETTING THE 24-HOUR CLOCK:

The internal time clock must be set in order for the data storage memory to correctly log events and to allow any defrost lockout to occur at the correct time of day. If the clock is not set, the control assumes the time is 12 am at the time power is supplied to the unit. The hours on a 24-hour time clock read the following way:

H01 = 1:00 a.m.	H09 = 9:00 a.m.	H17 = 5:00 p.m.
H02 = 2:00 a.m.	H10 = 10:00 a.m.	H18 = 6:00 p.m.
H03 = 3:00 a.m.	H11 = 11:00 a.m.	H19 = 7:00 p.m.
H04 = 4:00 a.m.	H12 = 12:00 p.m.	H20 = 8:00 p.m.
H05 = 5:00 a.m.	H13 = 1:00 p.m.	H21 = 9:00 p.m.
H06 = 6:00 a.m.	H14 = 2:00 p.m.	H22 = 10:00 p.m.
H07 = 7:00 a.m.	H15 = 3:00 p.m.	H23 = 11:00 p.m
H08 = 8:00 a.m.	H16 = 4:00 p.m.	H24 = 12:00 a.m.

Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set High, press the down arrow key  until the control display reads  Clock. Press the set button  .

The display will show  Hours. The right two numbers will be flashing.

Use the arrow keys  to set the hour.

When the correct hour is displayed, press the set button  .

The display will show  Minutes. The right two numbers will be flashing.

Use the arrow keys to set the minutes  .

When the correct minutes are displayed, press the set button  .

The display will then read  Clock.

You can use the up or down arrow keys  to scroll to the next parameter or press the alarm cancel button to exit  .

7. MICROPROCESSOR CONTROL (CONT.)

7K - SETTING THE DATE:

The date must be set in order for the data storage memory to correctly log events. Follow the instructions to enter the service access code on page 8. When the control displays  Thermostat Set Point High, press the down arrow key  until the control display reads  Date. Press the set button  .

The display will show  (year). The right two numbers will be flashing. Press the arrow keys  to set the year. When the correct year is displayed, press the set button  . The display will show  (month). The right two numbers will be flashing. Use the arrow keys  to set the month. When the correct month is displayed, press the set button  . The display will show  (day). The right two numbers will be flashing. Press the arrow keys  to set the day. When the correct day is displayed, press the set button  . The display will then read  Date. You can use the up or down arrow keys  to scroll to the next parameter. Press the alarm cancel button to exit  .

7L - SETTING DAYLIGHT SAVINGS TIME:

This parameter is preset at the factory to automatically adjust the 24-hour clock for Daylight Savings Time. Follow the instructions to enter the customer access code on page 8. When the control displays  Thermostat Set Point High, press the down arrow key  until the display reads  Daylight Savings Time.

Press the set button  . The display will show  Daylight Savings Time (Yes, automatically adjust for Daylight Savings Time). For “YES” press the set button ,for “NO” press the up or down arrow key  .

The display will read  Daylight Savings Time (no). Press the set button  .

The display will read  Daylight Savings Time.

You can press the up or down arrow keys  to scroll to the next parameter or press the alarm cancel button to exit  .

7. MICROPROCESSOR CONTROL (CONT.)

7M - STARTING A MANUAL DEFROST CYCLE:

This parameter allows a service technician to start a defrost cycle at any time. This parameter will override any lockout settings.

Follow the instructions to enter the customer access code on page 8. When the control displays SPH Thermostat Set High, press the down arrow key until the control display reads Sd Start Manual Defrost.

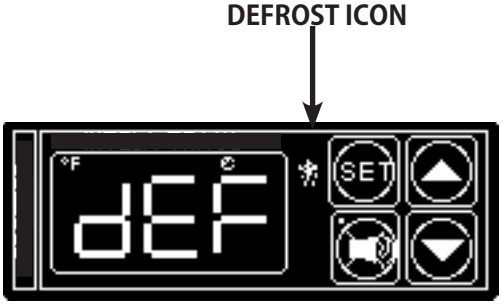
Press the set button SET

The display will show OFF

Press either arrow key

The display will show On

Press the set button SET



The defrost icon will be lit, and the display will read dEF when the unit is in defrost.

NOTE: Kairak refrigerator units also have an off-cycle defrost, at which time the control will read dEF This defrost is temperature terminated and can last from 3 - 20 minutes (dEF will be displayed for 20-37 minutes time).

7. MICROPROCESSOR CONTROL (CONT.)

7N - SETTING THE DEFROST LOCKOUTS:

The defrost lockout parameters allow the customer to prevent the unit from going into a defrost cycle for two hours during a set time frame. Customers can set up to four defrost lockout parameters. They are all programmed the same way. The parameters will be set for the time the lockout is to start. The controller automatically calculates 2 hours from that setting. The options are similar to the 24-hour clock settings and are in 30-minute increments. Each of the lockout parameters covers 6 hours of the 24-hour clock. Note: The 24-hour clock must be set for this feature to operate at the correct time of day. See “Setting the 24-Hour Clock” on page 11.

Sample:

			
OFF	OFF	OFF	OFF
020 = 2:00 a.m.	080 = 8:00 a.m.	140 = 2:00 p.m.	200 = 8:00 p.m.
023 = 2:30 a.m.	083 = 8:30 a.m.	143 = 2:30 p.m.	203 = 8:30 p.m.
030 = 3:00 a.m.	090 = 9:00 a.m.	150 = 3:00 p.m.	210 = 9:00 p.m.
033 = 3:30 a.m.	093 = 9:30 a.m.	153 = 3:30 p.m.	213 = 9:30 p.m.
040 = 4:00 a.m.	100 = 10:00 a.m.	160 = 4:00 p.m.	220 = 10:00 p.m.
043 = 4:30 a.m.	103 = 10:30 a.m.	163 = 4:30 p.m.	223 = 10:30 p.m.
050 = 5:00 a.m.	110 = 11:00 a.m.	170 = 5:00 p.m.	230 = 11:00 p.m.
053 = 5:30 a.m.	113 = 11:30 a.m.	173 = 5:30 p.m.	233 = 11:30 p.m.
060 = 6:00 a.m.	120 = 12:00 p.m.	180 = 6:00 p.m.	240* = 12:00 a.m.
063 = 6:30 a.m.	123 = 12:30 p.m.	183 = 6:30 p.m.	243* = 12:30 a.m.
070 = 7:00 a.m.	130 = 1:00 p.m.	190 = 7:00 p.m.	010 = 1:00 a.m.
073 = 7:30 a.m.	133 = 1:30 p.m.	193 = 7:30 p.m.	013 = 1:30 a.m.
080 = 8:00 a.m.	140 = 2:00 p.m.	200 = 8:00 p.m.	020 = 2:00 a.m.

* Denotes not available.

A lockout can not be programmed to start at 12:00 am or 12:30 am due to conflicts with other internal programs. The defrost lockouts can not be programmed to run back-to-back. For example, if dL1 is set to 080, then a defrost cycle would be locked out from 8:00 am to 10:00 am. Because of the dL1 setting the dL2 parameter would not let the user choose a lockout start time before 10:30 am. All lockouts are preset at the factory to OFF.

7. MICROPROCESSOR CONTROL (CONT.)

7N - SETTING THE DEFROST LOCKOUTS (CONT.):

Follow the instructions to enter the customer access code on page 9.

When the control displays  Thermostat Set High,

press the down arrow key 

until the control display reads  or  .

Press the set button  .

The display will show  Off.

Press the arrow keys  to set the start time.

When the correct time is displayed, press the set button  .

The display will then read  or  .

You can press the up or down arrow keys  to scroll to the next parameter,

or press the alarm cancel button to exit  .

7. MICROPROCESSOR CONTROL (CONT.)

7O - ADJUSTING THE DRAWER PERIMETER HEATERS:

This parameter allows the customer to turn ON and OFF the anti-condensate door/drawer perimeter heaters. This parameter is set to the highest setting (100) at the factory so that the door/drawer heaters stay on continuously. If you choose to have the door/drawer heaters cycle on and off, lower this parameter to approximately 30. If condensation forms around the door/drawers, increase the parameter until condensation stops. The exact setting will vary depending on ambient conditions.

Follow the instructions to enter the customer access code on page 8.

When the control displays  Thermostat Set High, press the down arrow key  until the control display reads  DewPoint Compensation Factor. Press the set button  . Press the arrow keys  to adjust the factor to your desired setting. When the display shows the factor you want press the set button  . The display will then read  DewPoint Compensation Factor. You can use the up or down arrow keys  to scroll to the next parameter or press the alarm cancel button to exit  .

7P - ADJUSTING THE ROOM TEMPERATURE OFFSET:

The room temperature offset parameter allows a service technician or end user the ability to have the display show a temperature that is within three degrees of the actual temperature being read by the cabinet air sensor. This allows for continuity of reading between different temperature reading devices. (i.e.: thermistor vs. thermocouple vs. handheld thermometer) This parameter is preset at the factory to “-2.50F”.

Follow the instructions to enter the customer access code on page 8.

When the control displays  Thermostat Set High, press the down arrow key until the control display reads  Room Temperature Offset. Press the set button  . Use the arrow keys  to adjust the offset to your desired setting. When the display shows the offset you want press the set button  . The display will then read  Room Temperature Offset.

You can use the up or down arrow keys  to scroll to the next parameter, or press the alarm cancel button to exit  .

7. MICROPROCESSOR CONTROL (CONT.)

7Q - SETTING THE AUDIBLE ALARM STYLE:

These parameters will allow the customer to turn on/off the audible alarm feature on the Microprocessor control. The audible alarm is preset from the factory to OFF. The customer can choose between an audible alarm that sounds for 3 seconds then automatically turns off, or a continuous audible alarm that must be manually acknowledged. Regardless of this feature's setting, visual alarm text will display when conditions warrant.

To adjust this setting, follow the instructions to enter the customer access code on page 8. When the control displays SPH Thermostat Set Point High, press the up arrow key until the display reads AAS Audible Alarm Style. Press the set button SET . The display will read OFF OFF. Use the arrow keys to scroll between bSt for the 3-Second Audible Alarm Burst or Cnt for Continuous Audible Alarm. When the display shows your choice of style, press the set button SET . The display will then read SPH thermostat Set Point High. Use the arrow keys to scroll to the next parameter or press the Alarm Cancel Button to exit.

7R - VIEWING SENSOR TEMPERATURES:

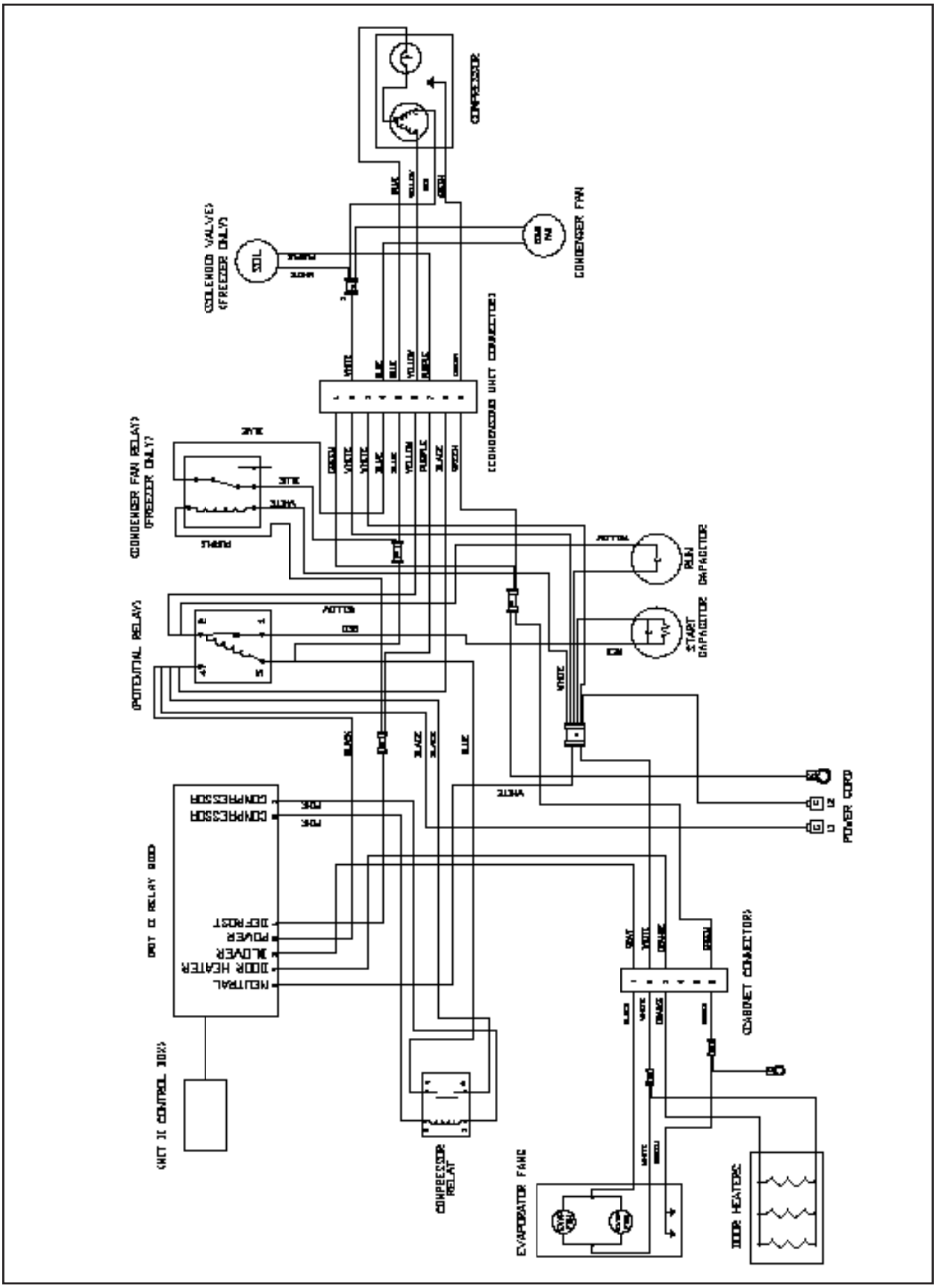
These parameters allow a service technician or customer to view the temperature of all sensors within the unit. The temperatures cannot be adjusted.

Follow the instructions to enter the customer access code on page 8. When the control displays Thermostat Set Point High SPH , press the up arrow key SET until the display reads CL Cabinet Air Sensor Evaporator Coil Sensor EL or Disharge Line Sensor dL or press the SET button SET . The display will read the temperature of the designated sensor.

Press the UP or DOWN arrow keys to scroll through the parameters or press the ALARM CANCEL button to exit.

8. WIRING DIAGRAM

NOTE: Refer to the wiring diagram below (applies to refrigerators and freezers units) for any service work performed by a qualified technician.



9. TROUBLESHOOTING

PROBLEM	POSSIBLE SOLUTION
1. Condensing unit fails to start.	a. Check if cord & plug has been disconnected. b. Clean Condenser
2. Condensing unit operates for prolonged periods or continuously.	a. Are doors closed properly? b. Dirty condenser or filter. Clean properly. c. Evaporator coils iced. Needs to defrost. See instructions for setting a manual defrost cycle p. 13.
3. Food Compartment is too warm. (NOTE: Compressor may be cycling ON/OFF frequently)	a. Check door(s) and gasket(s) for proper seal. b. Check if a large quantity of warm food was recently added or the door was kept open for a long period of time. c. Microprocessor Control setting is too high. Readjust per instructions on p. 9 and 10. d. Clean Condenser
4. Food Compartment is too cold.	a. Check if a large quantity of very cold or frozen food has recently been added. Allow adequate time for the cabinet to recover its normal operating temperature. b. Adjust the microprocessor control to warmer setting. Readjust per instruction on p. 9 and 10.
5. Condensation on exterior surface.	a. Check door(s) alignment and gaskets for proper seal. b. Condensation on the exterior surface of the unit is perfectly normal during periods of high humidity. c. Check perimeter heat setting and increase setting if <100 (see section VII).
6. Compressor hums & does not start.	a. Call for service.

SERVICE

For additional information, contact Kairak Parts and Service Department:
800-833-1106.

10. WARRANTIES

Kairak's warranty coverage warrants that Kairak-branded products are free of defects in materials and factory workmanship. The following applies to all Kairak Model and Serial numbers.

Kairak's warranty is extended only to the original purchaser and shall not apply to any failures resulting from damage in transit, improper installation, alteration, normal wear, misuse, abuse, improper voltage, accident or negligence. The warranty excludes; T-stat adjustments, time clock adjustments, gaskets, cutting boards, filters, clogged drains, ice build-up with no mechanical failures, and the loss of contamination of food due to mechanical or electrical failure. Warranty does not apply outside the United States.

In order to be covered under this warranty, prior authorization to perform the necessary and appropriate service must be obtained from the factory. Model and Serial number must be provided at the time of service request. Kairak does not assume responsibility for any expenses, including labor, parts or travel expenses incurred without such prior authorization. Kairak shall not be liable, whether in contract or in tort or under any other legal theory for loss of use, revenue or profit, substitute use or performance, incidental, indirect or special and/or consequential damages, loss of refrigerant or for any other loss or cost of similar type. Such related charges will be back charged to the responsible party. The decision of the Kairak Service and Warranty, as to whether a defect is within the terms of this warranty shall be final.

Failure to object or provision contained in a customer's purchase order or other communication shall not be deemed as a waiver of terms or conditions of their warranty, nor shall it be considered acceptance of such provisions. This warranty supersedes and is in lieu of all other warranties, expressed or implied and of other obligations of liabilities, on the part of Kairak.

In case of freight damage, do not refuse shipment, but call agent's attention to its condition, making careful note of the details on freight bill before freight charges are paid. File claim for damages with freight agent immediately.

BLU FIXTURES manufactured by Kairak hold a 3-year parts and labor warranty. Kairak holds a 5-year compressor warranty, with a one-time compressor only replacement after the first year. Kairak will warranty the labor to replace the compressor for the first three years, 30 days from the ship date. After the first three years, labor, tax, shipping and miscellaneous parts will not be included. Please contact our warranty department for compressor replacement procedures during the warranty period. BLU remote Fixtures are designed to operate with Kairak remote systems only. Violation of these terms will void all warranty.

REFRIGERANT FIXTURES manufactured by Kairak hold a 1-year parts and labor warranty. Kairak holds a 5-year compressor warranty, with a one-time compressor only replacement after the first year. Kairak will warranty the labor to replace the compressor for the first year, 30 days from the ship date. After the first year, labor, tax, shipping and miscellaneous parts will not be included. Please contact our warranty department for compressor replacement procedures during the warranty period.

REMOTE SYSTEMS manufactured by Kairak hold a 1-year parts and 90-day labor warranty on the remote system, with an option to purchase 1-year labor warranty at the time of purchase order receipt. This warranty does not apply to motors, switches, controls, accessories or parts manufactured by others and purchased by Kairak, unless the manufacturer warranties the same to Kairak. Kairak holds a 5-year compressor warranty, with a one-time compressor only replacement after the first year. Kairak will warranty the labor to replace the compressor for the first year, 30 days from the ship date. After the first year, labor, tax, shipping and miscellaneous parts will not be included. Please contact our warranty department for compressor replacement procedures during the warranty period.

TO REQUEST AUTHORIZED SERVICE, CALL THE KAIRAK SERVICE AND WARRANTY HOTLINE: (800) 833-1106. After-hour requests must be urgent in nature and documented with Kairak's after-hours service line prior to service being performed. Kairak is responsible for straight time only, unless otherwise approved by the warranty department.

NOTES

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UNRIVALED REFRIGERATION TECHNOLOGY

KAIRAK. 4401 Blue Mound Rd., Fort Worth, TX 76106, Phone: (714) 870-8661, Web: www.kairak.com