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# BSD SERIES

## REFRIGERATORS AND FREEZERS

### Installation, Operation and Maintenance Instructions

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#### INSPECTION

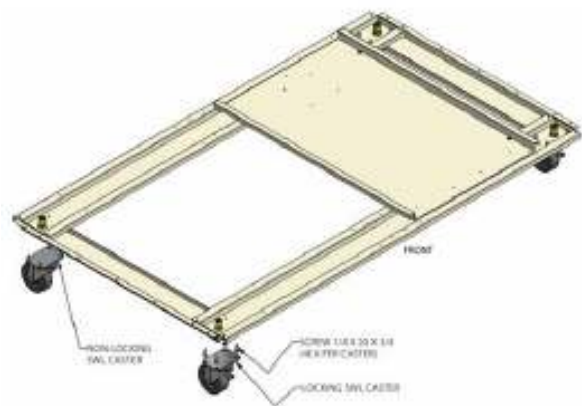
When the equipment is received, all items should be carefully checked against the bill of lading to insure all crates and cartons have been received. All units should be inspected for concealed damage by uncrating the units immediately. If any damage is found, it should be reported to the carrier at once, and a claim should be filed with the carrier. This equipment has been inspected and tested at the manufacturing facility and has been crated in accordance with transportation rules and guidelines. Manufacturer is not responsible for freight loss or damage.

#### INSTALLATION

##### GENERAL

If casters are installed, care should be taken when removing the unit from the crate base. The unit is heavy and can present a hazard if not handled with care. Remove the unit crate and crate base. Discard hardware used to secure the cabinet to the crate base. Ensure that at least two persons are available to install the casters. Lay the cabinet on its back to create access to the cabinet bottom. Attach the casters to the cabinet base using the factory installed screws as shown below.

Remove the  $\frac{1}{4}$  x 20 x  $\frac{3}{4}$  screws (4 per caster) that are factory installed. Position the caster and reinstall. Ensure that the locking casters are installed on the front of the cabinet. After installation is complete, return the cabinet to its upright position. The cabinet should set in the upright position for at least one hour prior to energizing. This is required to allow the refrigeration to settle to its normal state. The cabinet should also be leveled when it is placed in its permanent location.



If the doors are out of alignment on the cabinet, the doors can be adjusted. This can be accomplished by opening the door(s) and loosening the screws that hold both the top and bottom hinges to the cabinet. After adjusting the door so that it is aligned correctly, tighten the screws to securely hold the hinges in place.

## **ELECTRICAL**

Check the proposed outlet to be used to insure that the voltage, phase and current carrying capacity of the circuit from the electrical panel correspond to the requirements of the cabinet. NEVER use an extension cord to wire any unit. On permanently connected units, those not furnished with a plug-in service cord, all inter-wiring between the electrical panel and the unit must be done in accordance with the National Electric Code and all state and local codes. Refer to the serial tag for all pertinent electrical information.

**Observe all Warning Labels. Disconnect power supply to eliminate injury from electrical shock or moving parts when servicing equipment.**

## **GENERAL OPERATION**

The refrigerators and freezers employ a unit cooler evaporator located outside the cabinet as the heat removing source. Through the refrigeration process, heat is captured in the evaporator, transferred to the condensing unit on top of the cabinet, and expelled to the surrounding outside air. It is extremely important to allow a four (4) inch clearance on the top, rear, and sides of the unit for the refrigeration process to function properly.

**These refrigerators and freezers utilize a programmable controller to control the temperature and defrost settings. The controller, which is located on the facade of the unit, is factory set. Please see the default settings sheet and separate instructions that are included on the operation of this controller.**

## **REFRIGERATORS**

During the operation of a refrigerator unit, frost will periodically form on the coil surface. Each time the compressor cycles "off", the evaporator fans will continue to run, which will keep the internal temperature uniform and at the same time remove any frost build up on the coil. The water produced will collect in the unit cooler drain pan and travel down the drain tube to the condensate vaporizer.

## **FREEZERS**

After shutting the door on freezer models, a short amount of time must be allowed before the door can be reopened. This is due to the tight seal maintained between the door and the cabinet. Waiting a few moments for the pressure to equalize permits the door to be opened easily.

A positive defrost is required to remove frost from the coil in freezer models. This is accomplished by energizing heaters during the defrost cycle that are positioned on the coil surface. The programmable controller is factory set to allow four defrosts per day.

As the preset defrost time is reached, the controller automatically terminates the refrigeration process by turning off the condensing unit and unit cooler fan motors, and energizes the defrost heaters. As the coil temperature increases, the frost begins to melt producing water which runs down the coil to the unit cooler drain pan and exits through the drain tube to the vaporizer. After all the frost has been removed and the coil temperature reaches approximately 50°F [10°C], the defrost is terminated through the action of the defrost termination control located on the unit cooler, and the refrigeration process resumes. In order to insure that any excess water remaining on the coil is not sprayed into the cabinet interior, and all heat generated by the defrost is removed, **the unit cooler fans will not operate until the coil temperature reaches approximately 25°F [-4°C].**

## GENERAL MAINTENANCE

### PERIODIC CLEANING

Beginning with the initial installation, the interior surfaces of the cabinet should be periodically wiped down with a solution of warm water and baking soda. This solution will remove any odors from spillage that has occurred. The exterior of the cabinet should also be cleaned frequently with a commercial grade of glass cleaner.

Monthly cleaning of the condenser will aid the heat transfer characteristics of the refrigeration system and increase its efficiency. To accomplish this, remove the cover panel from the cabinet and use a wire brush to loosen any dirt particles that are attached to the fins. Use a vacuum cleaner to remove the loosened particles. **Failure to keep the condenser coil clean and clear of obstructions could result in temperature loss and damage to the compressor.**

All moving parts have been permanently lubricated and will generally require no maintenance.

## MAINTENANCE SERVICE AND ANALYSIS GUIDE

### REFRIGERATION SYSTEMS - ALL MODELS

<u>MALFUNCTION</u>	<u>POSSIBLE CAUSE</u>	<u>SOLUTION</u>
Compressor will not start - no hum	<ol style="list-style-type: none"> <li>1. Service cord unplugged</li> <li>2. Fuse blown or removed</li> <li>3. Overload tripped</li> <li>4. Control stuck open</li> <li>5. Wiring incorrect</li> </ol>	<ol style="list-style-type: none"> <li>1. Plug in service cord</li> <li>2. Replace fuse</li> <li>3. Determine reasons and correct</li> <li>4. Repair or replace</li> <li>5. Check wiring against the diagram</li> </ol>
Compressor will not start - hums but trips on overload protector	<ol style="list-style-type: none"> <li>1. Improperly wired</li> <li>2. Low voltage to unit</li> <li>3. Starting capacitor defective</li> <li>4. Relay failing to close</li> </ol>	<ol style="list-style-type: none"> <li>1. Check wiring against the diagram</li> <li>2. Determine reason and correct</li> <li>3. Determine reason and replace</li> <li>4. Determine reason, correct or replace</li> </ol>
Compressor starts and runs, but short cycles on overload protector refrigeration system	<ol style="list-style-type: none"> <li>1. Low voltage to unit</li> <li>2. Overload defective</li> <li>3. Excessive head pressure</li> <li>4. Compressor hot-return gas hot</li> </ol>	<ol style="list-style-type: none"> <li>1. Determine reason and correct</li> <li>2. Check current, replace overload protector</li> <li>3. Check ventilation or restriction in</li> <li>4. Check refrigerant charge, fix leak if necessary</li> </ol>
Compressor operates long or continuously	<ol style="list-style-type: none"> <li>1. Short of refrigerant</li> <li>2. Control contact stuck</li> <li>3. Evaporator coil iced</li> <li>4. Restriction in refrigeration system</li> <li>5. Dirty condenser</li> </ol>	<ol style="list-style-type: none"> <li>1. Fix leak, add charge</li> <li>2. Repair or replace</li> <li>3. Determine cause, defrost manually</li> <li>4. Determine location and remove restriction</li> <li>5. Clean condenser</li> </ol>
Compressor runs fine, but short cycles	<ol style="list-style-type: none"> <li>1. Overload protector</li> <li>2. Cold control</li> <li>3. Overcharge</li> <li>4. Air in system</li> <li>5. Undercharge</li> </ol>	<ol style="list-style-type: none"> <li>1. Check wiring diagram</li> <li>2. Differential too close - widen</li> <li>3. Reduce charge</li> <li>4. Purge and recharge</li> <li>5. Fix leak, add refrigerant</li> </ol>
Starting capacitor open, shorted or blown	<ol style="list-style-type: none"> <li>1. Relay contacts stuck</li> <li>2. Low voltage to unit</li> <li>3. Improper relay</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean contacts or replace relay</li> <li>2. Determine reason and correct</li> <li>3. Replace</li> </ol>
Relay defective or burned out	<ol style="list-style-type: none"> <li>1. Incorrect relay</li> <li>2. Voltage too high or too low</li> </ol>	<ol style="list-style-type: none"> <li>1. Check and replace</li> <li>2. Determine reason and correct</li> </ol>
Refrigerated space too warm	<ol style="list-style-type: none"> <li>1. Control setting too high</li> <li>2. Refrigerant overcharge</li> <li>3. Dirty condenser</li> <li>4. Evaporator coil iced</li> <li>5. Not operating</li> </ol>	<ol style="list-style-type: none"> <li>1. Reset control</li> <li>2. Purge refrigerant</li> <li>3. Clean condenser</li> <li>4. Determine reason and defrost</li> <li>5. Determine reason, replace if necessary</li> </ol>
Standard temperature system freezes the product	<ol style="list-style-type: none"> <li>1. Control setting is too low</li> <li>2. Control points stuck</li> </ol>	<ol style="list-style-type: none"> <li>1. Reset the control</li> <li>2. Replace the control</li> </ol>
Objectionable noise	<ol style="list-style-type: none"> <li>1. Fan blade hitting fan shroud</li> <li>2. Tubing rattle</li> <li>3. Vibrating fan blade</li> <li>4. Condenser fan motor rattles</li> <li>5. General vibration</li> <li>6. Worn fan motor bearings</li> </ol>	<ol style="list-style-type: none"> <li>1. Reform or cut away small section of shroud</li> <li>2. Locate and reform</li> <li>3. Replace fan blade</li> <li>4. Check motor bracket mounting, tighten</li> <li>5. Compressor suspension bolts not loosened on applicable models - loosen them</li> <li>6. Replace fan motor</li> </ol>
Pan Area	<ol style="list-style-type: none"> <li>1. No cooling</li> <li>2. Too cold</li> <li>3. Too warm</li> </ol>	<ol style="list-style-type: none"> <li>1. Make sure switch is in the "on" position</li> <li>2. Adjust temperature control - see instructions under pan area</li> <li>3. Adjust temperature control - see instructions under pan area</li> </ol>

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# INSTRUCTIONS FOR REVERSING THE SWING OF SOLID DOORS

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Complete the following steps if reversing the swing of the **solid door(s)** is desired. These steps apply to both refrigerators and freezers.

1. With a one, two, or three door model, first open the door and located the screws holding the hinges and door in position.
2. Two people are recommended to make this change. One person should hold the door at a 90° angle to the cabinet while the other person removes the screws holding the door to the cabinet. The normal installation at the factory is to have the spring loaded door-closing mechanism located at the bottom of the cabinet. **When removing the spring tension bracket from the cabinet bottom, be careful that it does not snap back. This may result in pinched fingers.**
3. After the door(s) are removed, remove the door lock strike(s) from the cabinet by removing the two mounting screws.
4. Find the holes, drilled through the outer skin only, located on the opposite side of the door opening from where the hinges were previously located. Drill through the tapping plate found behind these holes using a 7/32" drill bit.
5. Turn the door over and align it to the cabinet so it will swing in the desired direction. The spring loaded door closing hinge will now be located at the top of the reversed door. Mount the hinges to the cabinet using the holes that were drilled out in step 4, along with the previously removed screws. Check the door(s) to be certain that it is mounted squarely and that the gaskets seal properly around the door opening. The door can be adjusted by moving the top or bottom hinge slightly.
6. The original hinge holes can be filled with silicone, or with 1/4-20x3/4 pan head stainless steel screws if desired.
7. Locate the door lock strike by visually aligning it to the dead bolt lock in the door while the door is in the closed position. While holding the strike in position, mark the top, bottom, and edge of the strike on the cabinet wall or mullion with a pencil or fine point marker that will remain legible until completion of the task. Verify that the strike is positioned properly by assuring that it is aligned to the marks and hold it securely; open and close the door and extend and retract the dead bolt to make certain they clear without touching. **The strike cannot be adjusted after it is mounted.**
8. Align the strike to the marks, which were made in step 7 and mark the centers of the holes for the mounting screws. Using a #20 drill bit, drill the holes you just marked approximately one-half inch deep. **Take care not to puncture the interior side of the cabinet.** Note: If a #20 bit is not available, use a 5/32" drill bit.
9. Mount the door lock strike using the screws that were removed from the original position. The screws may have to be forced until the thread cutting tip has passed through the entire metal thickness. The original door strike holes can be filled with silicone, or with two 10-24x1/2 stainless steel pan head screws if desired.

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# INSTRUCCIONES PARA CAMBIAR EL SENTIDO DE APERTURA DE LAS PUERTAS SÓLIDAS

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Complete los siguientes pasos si desea revertir el sentido de apertura de la(s) puerta(s) sólida(s). Estos pasos se aplican tanto a refrigeradores como a congeladores.



1. En los modelos de una, dos, o tres puertas, primero abra la puerta y coloque los tornillos sosteniendo las bisagras y la puerta en su posición.
2. Es recomendable que este cambio sea hecho por dos personas. Una persona debe sostener la puerta en un ángulo de 90° con respecto al gabinete mientras la otra quita los tornillos que sostienen la puerta al gabinete. La instalación normal en fábrica es para ejercer en la parte inferior del gabinete la fuerza del resorte del mecanismo que cierra la puerta. **Cuando quite la ménsula de tensión del resorte de la parte inferior del gabinete, cuide que ésta no salte bruscamente hacia atrás. Puede pellizcar sus dedos.**
3. Después que la(s) puerta(s) ha(n) sido quitada(s), saque la cerradura hembra de la puerta del gabinete quitando los dos tornillos de montaje.
4. Busque los agujeros que están perforados solamente a través del revestimiento exterior. Estos están situados en el lado opuesto de la abertura de la puerta, desde donde las bisagras fueron previamente ubicadas. Agujeree a través del roscado de la placa que se encuentra detrás de estos orificios utilizando un taladro con una mecha de 7/32".
5. Gire la puerta y alinéela con el gabinete de modo que se abra en la dirección deseada. La fuerza del resorte de la bisagra de cierre de la puerta estará ahora situada en la parte superior de la puerta invertida. Asegure las bisagras al gabinete usando los agujeros que fueron perforados en el paso 4, junto con los tornillos quitados previamente. Compruebe que la(s) puerta(s) esté(n) montadas y encuadradas y que las juntas estén correctamente selladas alrededor de la abertura de la puerta. La puerta puede ser ajustada moviendo ligeramente la parte superior o inferior de la bisagra.
6. Los agujeros originales de las bisagras pueden ser rellenados con silicona, o colocando tornillos de cabeza troncocónica de 1/4-20x3/4 de acero inoxidable, si se desea.
7. Ubique la cerradura hembra de la puerta alineándola visualmente con el cerrojo muerto en la puerta mientras ésta se halla en la posición de cerrada. Mientras sostiene la cerradura hembra en posición, marque la parte superior, la parte inferior y el borde de la cerradura hembra en la pared del gabinete o montante con un lápiz o marcador de punta fina que pueda mantenerse legible hasta completar la tarea. Verifique que la cerradura hembra esté colocada correctamente asegurándose que se encuentra alineada con las marcas y sosténgala firmemente. Abra y cierre la puerta y extienda y contraiga el cerrojo muerto para asegurarse que tienen espacio suficiente como para no rozarse. **La cerradura hembra no se puede ajustar después de ser montada.**
8. Alinee la cerradura hembra con las marcas que hiciera en el paso 7 y marque los centros de los orificios para los tornillos de montaje. Usando un taladro con una mecha de #20, perfore los agujeros que previamente ha marcado, hágalos de aproximadamente media pulgada de profundidad. **Asegúrese de no perforar la cara interior del gabinete.** Nota: Si no encuentra una barrena de #20, use una de 5/32".
9. Monte la cerradura hembra de la puerta usando los tornillos que fueron quitados anteriormente de su posición original. Los tornillos no deben entrar forzosamente hasta que la punta cortante del tornillo haya pasado completamente a través del espesor del metal. Los agujeros originales de la cerradura hembra de la puerta pueden ser rellenados con silicona, o colocando tornillos de cabeza troncocónica de 10-24x1/2 de acero inoxidable, si se desea.

# MASTER-BILT ELECTRONIC REFRIGERATION CONTROL






## 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.

## OPERATION

### DISPLAY

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

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

### INFO MENU

The information available in this menu is:

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

**Compressor** When power is first turned on to the control, the LED indicator for the Thermostat output will go through the start-up delay. After a one-minute delay the compressor comes on. The LED indicator stays on while compressor relay is energized. Display will show actual box temperature. Picture above is the display layout. The compressor will be cycled off when the actual box temperature reaches its set point. The Thermostat output indicator will be off.

**Fan** The fans will run constantly for Refrigerators application, and off during a defrost for the Freezers application. The Evaporator fan will also cut off when the evaporator temp is above the fan stop temperature setting.

When the Freezer is in defrost mode; the fan is off until the end of the defrost and the 2 minute drip time has passed. There is 2 minute delay after a defrost before the fan comes on. If the evaporator temperature is 25 °F or below the controller will override the fan delay. FAN LED indicator is on while FAN relay is energized.






**Defrost** The control uses time defrost with 4 defrosts per day for the Freezers and off cycle defrost for the Refrigerators.

The Freezers time defrost scheme can be re-set for special applications. During defrost the display will show dEF and the defrost LED indicator on. The control begins timing the defrost when power is turned on. Four defrost per day means it will occur every 6 hours. To have defrost occur at 8am, 2pm, 8pm, and 2am then power up at one of these four times.











## MANUAL DEFROST

Defrosting may also be induced manually by keeping the defrost button for 5 seconds. Once defrost has started, the defrost will go through a defrost and drip time pull down cycle.

## HOW TO CHANGE THE 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 (adjustment is within the minimum **SPL** and the maximum **SPH** limit).
- When button  is released, the new value is stored.

## HOW TO CHANGE a parameter value

- 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.

## ELECTRICAL CONNECTIONS

The controller is provided with a phoenix push terminal block to connect cables with a cross section up to 2,5 mm<sup>2</sup>. Before connecting cables make sure the power supply complies with the control's requirements. Separate the probe cables from the power supply cables, the outputs and the power connections. Do not exceed the maximum current allowed on each relay, in case of heavier loads use a suitable external relay or contactors.

## PROBE CONNECTIONS

The probes shall be mounted with the bulb upwards to prevent damage due to casual liquid infiltration. It is recommended to place the thermostat probe at the warmest location of return air streams to correctly measure the average room temperature. Place the defrost termination probe among the evaporator fins in the coldest place, where most ice is formed, far from heaters or from the warmest place during defrost, to prevent premature defrost termination.

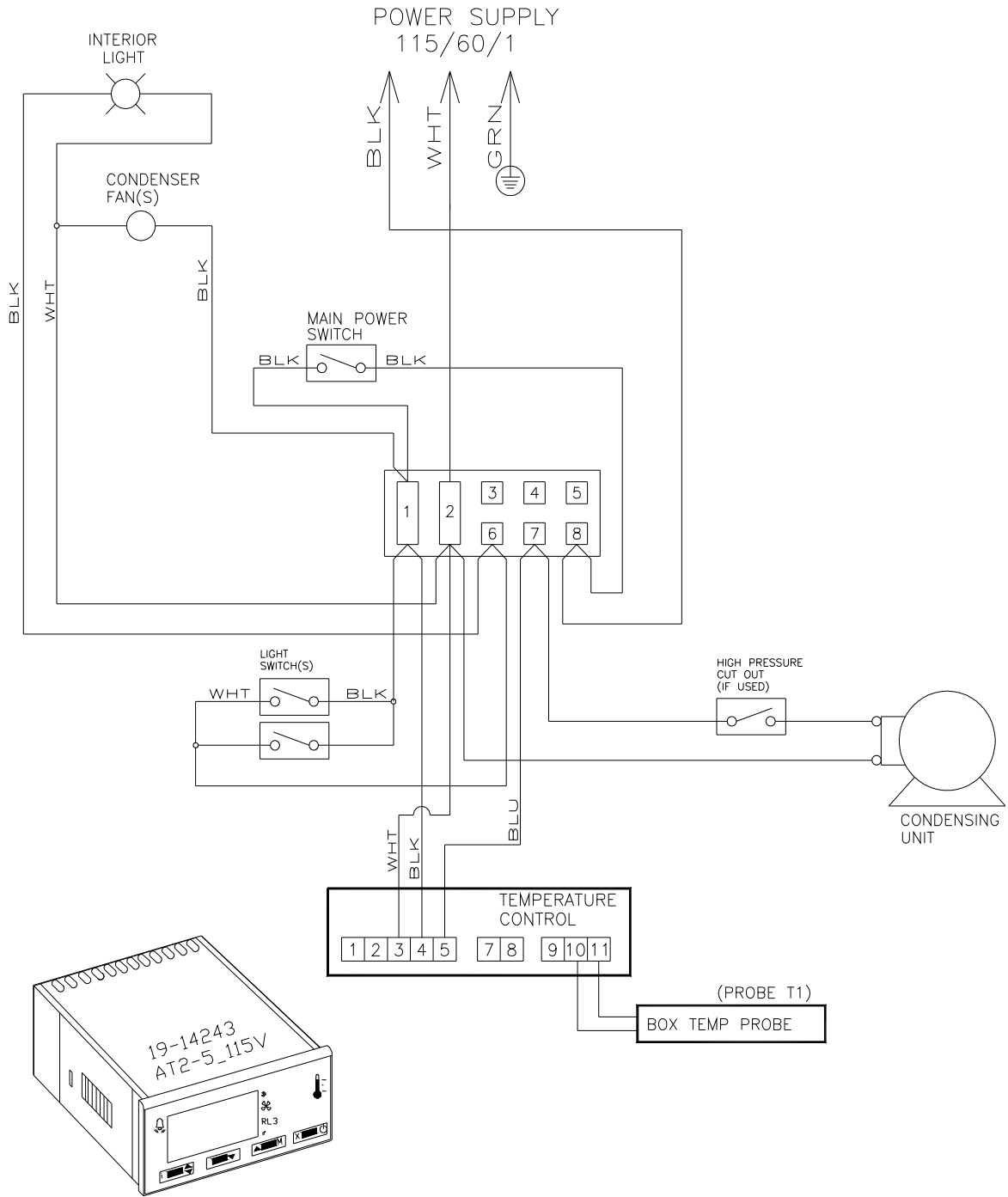
## BSD-A Series Freezer

PARAM*	DESCRIPTION	FACTORY'S SETTING
<b>SCL</b>	Temperature scale.	°F
<b>SPL</b>	Minimum limit for <b>SP</b> setting	-10
<b>SPH</b>	Maximum limit for <b>SP</b> setting	32
<b>SP</b>	Setpoint (value to be maintained in the room)	-5
<b>C-H</b>	Refrigerating (REF) or Heating (HEA) control mode	REF
<b>HYS</b>	Thermostat differential	4
<b>CRT</b>	Compressor rest time.	1
<b>CT1</b>	Thermostat output runs when T1 is faulty.	6
<b>CT2</b>	Thermostat outputs stop when probe T1 is faulty.	4
<b>CSD</b>	Compressor stop delay after the door has been opened	5
<b>DFR</b>	Defrost frequency expressed in cycles / 24 hours.	4
<b>DLI</b>	Defrost end Temperature	55
<b>DTO</b>	Maximum defrost duration	30
<b>DTY</b>	Defrost Type: OFF, ELE, GAS	ELE
<b>DRN</b>	Pause after defrost (evaporator drain down time)	1
<b>DDY</b>	Display during defrost. (DEF)	4
<b>FID</b>	Fans active during defrost.	NO
<b>FDD</b>	Evaporator fan re-stat temperature after defrost.	30
<b>FTC</b>	OptimiSed fan control enabling. With <b>FTC=NO</b> then; FT1, FT2, FT3 = 0	NO
<b>FT1</b>	Fan stop delay after compressor stop. See Fig.2.	0
<b>FT2</b>	Timed fan stop. With <b>FT2=0</b> the fans remain on all the time.	0
<b>FT3</b>	Timed fan run. With <b>FT3=0</b> , and <b>FT2&gt;0</b> , the fans remain off all the time.	0
<b>ATM</b>	Alarm threshold management: NON, ABS, REL....	ABS
<b>ALA</b>	Low temperature alarm threshold (ALR=0)	-35
<b>AHA</b>	High temperature alarm threshold. (AHR=0)	32
<b>ALR</b>	Low temperature alarm differential. With <b>ALR=0</b> the low temperature alarm is excluded.	-
<b>AHR</b>	High temperature alarm differential. With <b>AHR=0</b> the high temperature alarm is excluded.	-
<b>ATD</b>	Delay before alarm temperature warning.	30
<b>ADO</b>	Delay before door open alarm warning.	15
<b>ACC</b>	Condensor periodic cleaning.	0
<b>IISM</b>	Switchover mode to second parameter set	NON
<b>IISL</b>	Minimum limit for <b>IISP</b> setting.	-
<b>IISH</b>	Maximum limit for <b>IISP</b> setting.	-
<b>IISP</b>	Setpoint in mode 2.	-
<b>IIHY</b>	OFF/ON differential in mode 2.	-
<b>IIFT</b>	Optimised fan control enabling in mode 2.	-
<b>IIDF</b>	Defrost timer set to start a defrost in mode 2.	-
<b>SB</b>	Stand-by button enabling	NO
<b>DS</b>	Door switch input enabling (closed when door is closed)	NO
<b>LSM</b>	Light control mode	NON
<b>OAU</b>	AUX output operation.	DEF
<b>INP</b>	Temperature sensor selection.	SN4
<b>OS1</b>	Probe T1 offset.	0
<b>T2</b>	Probe T2 enabling (Evaporator).	NO
<b>OS2</b>	Probe T2 offset.	0
<b>TLD</b>	Delay for minimum temperature (TLO) and maximum temperature (THI) logging	5
<b>SIM</b>	Display slowdown	0
<b>ADR</b>	AT2-5 address for PC communication.	1

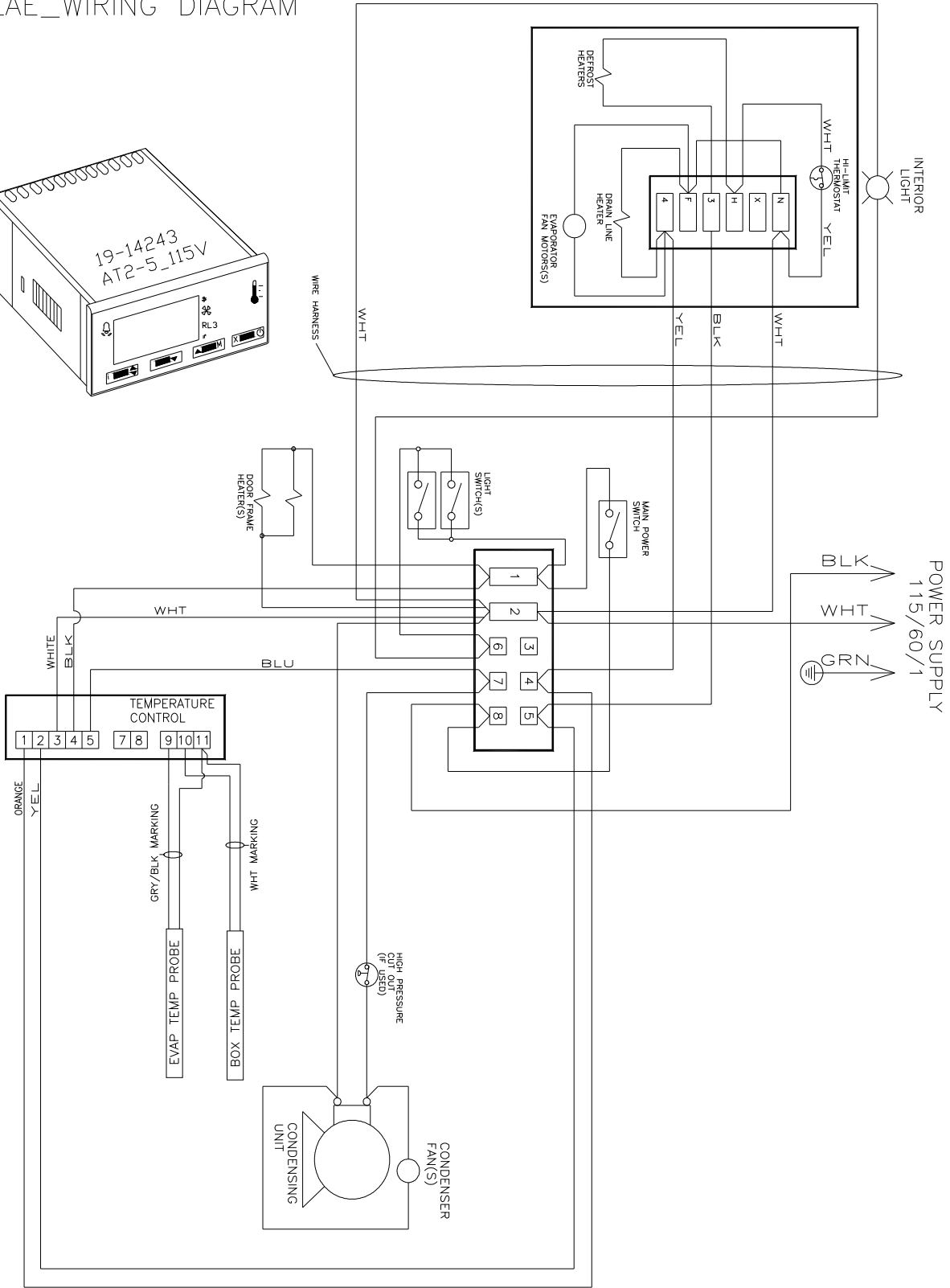
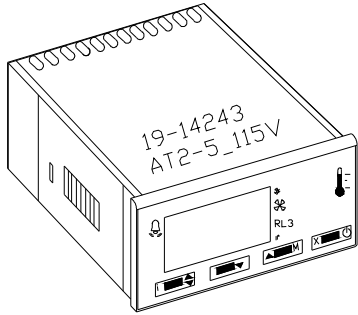
## BSD-A Series Refrigerator

PARAM*	DESCRIPTION	FACTORY'S SETTING
<b>SCL</b>	Temperature scale.	<b>°F</b>
<b>SPL</b>	Minimum limit for <b>SP</b> setting	32
<b>SPH</b>	Maximum limit for <b>SP</b> setting	65
<b>SP</b>	Setpoint (value to be maintained in the room)	35
<b>C-H</b>	Refrigerating (REF) or Heating (HEA) control mode	REF
<b>HYS</b>	Thermostat differential	4
<b>CRT</b>	Compressor rest time.	1
<b>CT1</b>	Thermostat output runs when T1 is faulty.	6
<b>CT2</b>	Thermostat outputs stop when probe T1 is faulty.	4
<b>CSD</b>	Compressor stop delay after the door has been opened	5
<b>DFR</b>	Defrost frequency expressed in cycles / 24 hours.	2
<b>DLI</b>	Defrost end Temperature	45
<b>DTO</b>	Maximum defrost duration	20
<b>DTY</b>	Defrost Type: OFF, ELE, GAS	OFF
<b>DRN</b>	Pause after defrost (evaporator drain down time)	1
<b>DDY</b>	Display during defrost. (DEF)	3
<b>FID</b>	Fans active during defrost.	YES
<b>FDD</b>	Evaporator fan re-stat temperature after defrost.	75
<b>FTC</b>	OptimiSed fan control enabling. With <b>FTC=NO</b> then; FT1, FT2, FT3 = 0	NO
<b>FT1</b>	Fan stop delay after compressor stop. See Fig.2.	0
<b>FT2</b>	Timed fan stop. With <b>FT2=0</b> the fans remain on all the time.	0
<b>FT3</b>	Timed fan run. With <b>FT3=0</b> , and <b>FT2&gt;0</b> , the fans remain off all the time.	0
<b>ATM</b>	Alarm threshold management: NON, ABS, REL....	ABS
<b>ALA</b>	Low temperature alarm threshold (ALR=0)	0
<b>AHA</b>	High temperature alarm threshold. (AHR=0)	55
<b>ALR</b>	Low temperature alarm differential. With <b>ALR=0</b> the low temperature alarm is excluded.	-
<b>AHR</b>	High temperature alarm differential. With <b>AHR=0</b> the high temperature alarm is excluded.	-
<b>ATD</b>	Delay before alarm temperature warning.	30
<b>ADO</b>	Delay before door open alarm warning.	15
<b>ACC</b>	Condensor periodic cleaning.	0
<b>IISM</b>	Switchover mode to second parameter set	NON
<b>IISL</b>	Minimum limit for <b>IISP</b> setting.	-
<b>IISH</b>	Maximum limit for <b>IISP</b> setting.	-
<b>IISP</b>	Setpoint in mode 2.	-
<b>IIHY</b>	OFF/ON differential in mode 2.	-
<b>IIFT</b>	Optimised fan control enabling in mode 2.	-
<b>IIDF</b>	Defrost timer set to start a defrost in mode 2.	-
<b>SB</b>	Stand-by button enabling	NO
<b>DS</b>	Door switch input enabling (closed when door is closed)	NO
<b>LSM</b>	Light control mode	NON
<b>OAU</b>	AUX output operation.	DEF
<b>INP</b>	Temperature sensor selection.	SN4
<b>OS1</b>	Probe T1 offset.	0
<b>T2</b>	Probe T2 enabling (Evaporator).	YES
<b>OS2</b>	Probe T2 offset.	0
<b>TLD</b>	Delay for minimum temperature (TLO) and maximum temperature (THI) logging	5
<b>SIM</b>	Display slowdown	0
<b>ADR</b>	AT2-5 address for PC communication.	1

# 1,2,&3-DOOR'S REFRIGERATOR LAE\_WIRING DIAGRAM



# 1&2-DOOR's FREEZER LAE\_WIRING DIAGRAM



# 3-DOOR FREEZER LAE\_WIRING DIAGRAM

