

Installation and Operation Manual

**Thermo Scientific Jewett® UCF206
-20° C Undercounter Laboratory Freezers**



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1 Introduction

This product is a complete packaged unit ready to operate when plugged into an electrical source. It is not necessary to have a refrigeration serviceman set the unit in operation. The unit has been tested prior to shipment. Read all the instructions before proceeding with installation.

2 Inspection for Damage

Uncrate the product and remove all packing and crating materials. Inspect the product and parts thoroughly for damage or missing parts. File all claims for damage with the transportation company immediately. Do not file claims with the manufacturer.

3 Maintenance Instructions

1. Frequent cleaning of the interior and exterior with water and a good fungicidal detergent that eliminates harmful bacteria, stains and other foreign matter will keep the unit fresh and new looking.
2. Shelves and/or drawers should be removed from the cabinet and thoroughly scrubbed. Clean door gasket periodically.
3. The unit cooler fan operates continuously when the door is closed and requires no lubrication.
4. The condensing unit needs no oil or other lubrication. The finned condenser can become clogged with lint or dust. The openings between the fins should be kept clean. A vacuum cleaner or small test tube brush works well for this purpose. This should be accomplished on an annual basis. Failure to keep the condenser fins free of dirt and lint will result in erratic operation and may damage the refrigeration system.
5. Annual inspection of the mechanical refrigeration equipment by a qualified serviceman is recommended. A qualified mechanic can frequently make adjustments that will prevent future breakdown.
6. If the system is opened for any reason, extreme care should be taken to prevent the entry of moisture-bearing air. A new drier should be installed in the lines when the system is closed.

4 Installation Instructions

1. The cabinet will pass through a standard 30" door opening.
2. Inspect the interior, exterior and mechanical equipment for special instruction tags fastened at various points.
3. Move the freezer into the desired location. Make sure the bottom of the refrigerator is evenly supported. Thin shims

under the points of rest can be used to equalize the distribution of weight. If the cabinet sets on an uneven floor, a slight rocking or vibration might result when the condensing unit is set in operation.

4. Make certain the freezer is located so the grill panel is unobstructed.
5. An automatic condensate evaporator eliminates the necessity for a floor drain. For proper elimination of condensation, the sponge provided should be placed in the plastic condensate tray located in the rear of the mechanical compartment.
6. The condensing unit is shipped with all service valves open and ready for operation. Do not adjust the refrigerant valves or the temperature control.
7. Use of electrical characteristics, other than those specified on the serial plate will cause permanent damage to the mechanism. The serial plate is located inside the freezer at the top of the right hand wall.
8. Operate the freezer for several hours to allow the unit to reach normal operating temperatures before storing product.

NOTE: *Erratic operation on initial start-up does not indicate a faulty control. When normal operating temperature is reached, the condensing unit will cycle regularly.*

5 UCF206 Sequence of Operation

The Temperature Control Switch controls current to the motor compressor and unit cooler fan motor. The Defrost Switch controls current to the defrost heater. Both switches are located in the temperature control/defrost timer.

Step 1 - Normal Refrigeration Operation

1. The fan delay control is closed.
2. The defrost heater is off.
3. The condensing unit operates in accordance with the demands of the refrigeration system.
4. The unit cooler fan operates continually. However, the door switch will deactivate the fan motor when the door is opened.
5. Frost builds up slowly on the unit cooler.

Step 2 - Defrost Cycle

1. The unit cooler defrost cycle is started automatically by the timer at predetermined times.
2. The timer opens the temperature control switch which breaks the circuit to the motor compressor and unit cooler fan motor

thereby shutting them off; and closes the defrost switch, thereby permitting current to flow to the heater.

3. The heater, recessed in slots, gives up heat directly to the fins of the unit cooler. This heat raises unit cooler and refrigerant temperature to 32° F. and causes the frost to melt.
4. Frost on the unit cooler is melted and defrost water drips into the heated drain pan and flows down the drain.
5. When frost has completely melted from the unit cooler, the cooler starts to warm up beyond 32° F.

Step 3 - Unit Cooler Re-Cooling Cycle

1. When the unit cooler warms up to 55° F. the defrost termination control closes. The timer switches back to its normal position. (Temperature Control Switch closed, Defrost Switch open). The fan delay control is now open. The heater safety control may open, but under normal operation will remain closed.

The heater safety thermostat would open only if the defrost termination fails.

2. The compressor starts.
3. The unit cooler fan motor remains OFF, so that warm air will not enter the refrigerated space.
4. The evaporator coil cools down approaching operating temperatures.

Step 4 - Return to Normal Operation

1. When the coil temperature reaches 16° F. (-8.9 C.), the fan control switch closes. Current flows to the fan motor and the unit returns to normal operation.

Digital controller with defrost and fans management

XR60CX

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1. GENERAL WARNING

1.1 PLEASE READ BEFORE USING THIS MANUAL

- This manual is part of the product and should be kept near the instrument for easy and quick reference.
- The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device.
- Check the application limits before proceeding.

1.2 SAFETY PRECAUTIONS

- Check the supply voltage is correct before connecting the instrument.
- Do not expose to water or moisture: use the controller only within the operating limits avoiding sudden temperature changes with high atmospheric humidity to prevent formation of condensation
- Warning: disconnect all electrical connections before any kind of maintenance.
- Fit the probe where it is not accessible by the End User. The instrument must not be opened.
- In case of failure or faulty operation send the instrument back to the distributor or to "Dixell S.p.A." (see address) with a detailed description of the fault.
- Consider the maximum current which can be applied to each relay (see Technical Data).
- Ensure that the wires for probes, loads and the power supply are separated and far enough from each other, without crossing or intertwining.
- In case of applications in industrial environments, the use of mains filters (our mod. FT1) in parallel with inductive loads could be useful.

2. GENERAL DESCRIPTION

Model XR60CX, format 32 x 74 mm, is microprocessor based controller, suitable for applications on medium or low temperature ventilated refrigerating units. It has three relay outputs to control compressor, fan, and defrost, which can be either electrical or reverse cycle (hot gas). It is also provided with three NTC or PTC probe inputs, the first one for temperature control, the second one, to be located onto the evaporator, to control the defrost termination temperature and to managed the fan, the third one, optional, to connect to the HOT KEY terminals to signal the condenser temperature alarm or to display a temperature. the digital input can operate as fourth temperature probe.

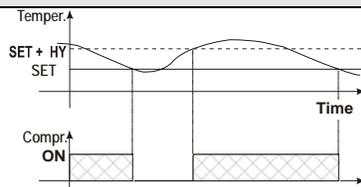
The HOT KEY output allows to connect the unit, by means of the external module XJ485-CX, to a network line ModBUS-RTU compatible such as the 2 1/03# monitoring units of X-WEB family. It allows to program the controller by means the HOT KEY programming keyboard.

The instrument is fully configurable through special parameters that can be easily programmed through the keyboard.

3. CONTROLLING LOADS

3.1 COMPRESSOR

The regulation is performed according to the temperature measured by the thermostat probe with a positive differential from the set point: if the temperature increases and reaches set point plus differential the compressor is started and then turned off when the temperature reaches the set point value again.



In case of fault in the thermostat probe the start and stop of the compressor are timed through parameters "CO_n" and "CO_F".

3.2 DEFROST

Two defrost modes are available through the "tdF" parameter: defrost through electrical heater (tdF = EL) and hot gas defrost (tdF = in). Other parameters are used to control the interval between defrost cycles (ldF), its maximum length (MdF) and two defrost modes: timed or controlled by the evaporator's probe (P2P).

At the end of defrost dripping time is started, its length is set in the FS_t parameter. With FS_t=0 the dripping time is disabled.

3.3 CONTROL OF EVAPORATOR FANS

The fan control mode is selected by means of the "FnC" parameter:

FnC = C_n: fans will switch ON and OFF with the compressor and not run during defrost;

FnC = o_n fans will run even if the compressor is off, and not run during defrost;
After defrost, there is a timed fan delay allowing for drip time, set by means of the "FnD" parameter.
FnC = C_Y fans will switch ON and OFF with the compressor and run during defrost;
FnC = o_Y fans will run continuously also during defrost

An additional parameter "FS_t" provides the setting of temperature, detected by the evaporator probe, above which the fans are always OFF. This is used to make sure circulation of air only if his temperature is lower than set in "FS_t".

3.3.1 Forced activation of fans

This function managed by the Fct parameter is designed to avoid short cycles of fans, that could happen when the controller is switched on or after a defrost, when the room air warms the evaporator. Functioning: if the difference of temperature between the evaporator and the room probes is more than the value of the Fct parameter, the fans are switched on. With Fct=0 the function is disabled.

3.3.2 Cyclical activation of the fans with compressor off.

When Fnc = c-n or c-Y (fans in parallel to the compressor), by means of the Fon and FoF parameters the fans can carry out on and off cycles even if the compressor is switched off. When the compressor is stopped the fans go on working for the Fon time. With Fon =0 the fans remain always off, when the compressor is off.

4. FRONT PANEL COMMANDS



SET: To display target set point; in programming mode it selects a parameter or confirm an operation.

❄ (DEF) To start a manual defrost

▲ (UP): To see the max. stored temperature; in programming mode it browses the parameter codes or increases the displayed value.

▼ (DOWN): To see the min stored temperature; in programming mode it browses the parameter codes or decreases the displayed value.

☀ To activate / deactivate the energy saving cycle.

💡 Not enabled.

KEY COMBINATIONS:

▲ + ▼ # To lock & unlock the keyboard.

SET + ▼ To enter in programming mode.

SET + ▲ # To return to the room temperature display.

4.1 USE OF LEDS

Each LED function is described in the following table.

LED	MODE	FUNCTION
❄	ON	Compressor enabled
❄	Flashing	Anti-short cycle delay enabled
❄	ON	Defrost enabled
❄	Flashing	Drip time in progress
🌀	ON	Fans enabled
🌀	Flashing	Fans delay after defrost in progress.
🔊	ON	An alarm is occurring
🌀	ON	Continuous cycle is running
☀	ON	Energy saving enabled
°C/°F	ON	Measurement unit
°C/°F	Flashing	Programming phase

5. MAX & MIN TEMPERATURE MEMORIZATION

5.1 HOW TO SEE THE MIN TEMPERATURE

1. Press and release the **X** key.
2. The "Lo" message will be displayed followed by the minimum temperature recorded.
3. By pressing the **X** key again or by waiting 5s the normal display will be restored.

5.2 HOW TO SEE THE MAX TEMPERATURE

1. Press and release the **Y** key.
2. The "Hi" message will be displayed followed by the maximum temperature recorded.
3. By pressing the **Y** key again or by waiting 5s the normal display will be restored.

5.3 HOW TO RESET THE MAX AND MIN TEMPERATURE RECORDED

1. Hold press the SET key for more than 3s, while the max. or min temperature is displayed. (rSt message will be displayed)
2. To confirm the operation the "rSt" message starts blinking and the normal temperature will be displayed.

6. MAIN FUNCTIONS

6.1 HOW TO SEE THE SETPOINT

SET  1. Push and immediately release the SET key; the display will show the Set point value;
2. Push and immediately release the SET key or wait for 5 seconds to display the probe value again.

6.2 HOW TO CHANGE THE SETPOINT

1. Push the SET key for more than 2 seconds to change the Set point value;
2. The value of the set point will be displayed and the "°C" or "°F" LED starts blinking;
3. To change the Set value push the **Y** or **X** arrows within 10s.
4. To memorise the new set point value push the SET key again or wait 10s.

6.3 HOW TO START A MANUAL DEFROST

 Push the DEF key for more than 2 seconds and a manual defrost will start.

6.4 HOW TO CHANGE A PARAMETER VALUE

To change the parameter's value operate as follows:
1. Enter the Programming mode by pressing the Set + **X** keys for 3s (the "°C" or "°F" LED starts blinking).
2. Select the required parameter. Press the "SET" key to display its value
3. Use "UP" or "DOWN" to change its value.
4. Press "SET" to store the new value and move to the following parameter.
To exit: Press SET + UP or wait 15s without pressing a key.
NOTE: the set value is stored even when the procedure is exited by waiting the time-out to expire.

6.5 THE HIDDEN MENU

The hidden menu includes all the parameters of the instrument.

6.5.1 HOW TO ENTER THE HIDDEN MENU

1. Enter the Programming mode by pressing the Set + **X** keys for 3s (the "°C" or "°F" LED starts blinking).
 2. Released the keys, then push again the Set+**X** keys for more than 7s. The Pr2 label will be displayed immediately followed from the HY parameter.
NOW YOU ARE IN THE HIDDEN MENU.
 3. Select the required parameter.
 4. Press the "SET" key to display its value
 5. Use **Y** or **X** to change its value.
 6. Press "SET" to store the new value and move to the following parameter.
To exit: Press SET + **Y** or wait 15s without pressing a key.
- NOTE1: if none parameter is present in Pr1, after 3s the "noP" message is displayed. Keep the keys pushed till the Pr2 message is displayed.
NOTE2: the set value is stored even when the procedure is exited by waiting the time-out to expire.

6.5.2 HOW TO MOVE A PARAMETER FROM THE HIDDEN MENU TO THE FIRST LEVEL AND VICEVERSA.

Each parameter present in the HIDDEN MENU can be removed or put into "THE FIRST LEVEL" (user level) by pressing "SET + **X**".
In HIDDEN MENU when a parameter is present in First Level the decimal point is on.

6.6 HOW TO LOCK THE KEYBOARD

1. Keep pressed for more than 3 s the UP + DOWN keys.
2. The "POF" message will be displayed and the keyboard will be locked. At this point it will be possible only to see the set point or the MAX o Min temperature stored
3. If a key is pressed more than 3s the "POF" message will be displayed.

6.7 TO UNLOCK THE KEYBOARD

Keep pressed together for more than 3s the **Y** # and **X** keys, till the "Pon" message will be displayed.

6.8 THE CONTINUOUS CYCLE

When defrost is not in progress, it can be activated by holding the "**X**" key pressed for about 3 seconds. The compressor operates to maintain the "ccs" set point for the time set through the "CCt" parameter. The cycle can be terminated before the end of the set time using the same activation key "**Y**" for 3 seconds.

6.9 THE ENERGY SAVING FUNCTION

 With "onF = ES", pushing the  key, energy saving cycle is enabled: this function allows to change the set point value as the result of the SET+ HES
To stop the energy saving push again the  key.

7. PARAMETERS

REGULATION

Hy Differential: (0,1 ÷ 25,5°C / 1÷255 °F) Intervention differential for set point. Compressor Cut IN is Set Point + differential (Hy). Compressor Cut OUT is when the temperature reaches the set point.
LS Minimum set point: (-50°C÷SET/-58°F÷SET): Sets the minimum value for the set point.
US Maximum set point: (SET+110°C/ SET+230°F). Set the maximum value for set point.
Ot Thermostat probe calibration: (-12.0÷12.0°C; -120÷120°F) allows to adjust possible offset of the thermostat probe.
P2P Evaporator probe presence: n= not present: the defrost stops by time; y= present: the defrost stops by temperature.
OE Evaporator probe calibration: (-12.0÷12.0°C; -120÷120°F). allows to adjust possible offset of the evaporator probe.
P3P Third probe presence (P3): n= not present, the terminal operates as digital input; y= present, the terminal operates as third probe.

O3 Third probe calibration (P3): (-12.0÷12.0°C; -120÷120°F). allows to adjust possible offset of the third probe.

P4P Fourth probe presence: (n = Not present; y = present).

o4 Fourth probe calibration: (-12.0÷12.0°C) allows to adjust possible offset of the fourth probe.

OdS Outputs activation delay at start up: (0÷255min) This function is enabled at the initial start up of the instrument and inhibits any output activation for the period of time set in the parameter.

AC Anti-short cycle delay: (0÷50 min) minimum interval between the compressor stop and the following restart.

rtr Percentage of the second and first probe for regulation (0÷100; 100 = P1, 0 = P2): it allows to set the regulation according to the percentage of the first and second probe, as for the following formula (rtr(P1-P2)/100 + P2).

CCt Compressor ON time during continuous cycle: (0.0÷24.0h; res. 10min) Allows to set the length of the continuous cycle: compressor stays on without interruption for the CCt time. Can be used, for instance, when the room is filled with new products.

CCS Set point for continuous cycle: (-50÷150°C) it sets the set point used during the continuous cycle.

CO Compressor ON time with faulty probe: (0÷255 min) time during which the compressor is active in case of faulty thermostat probe. With CO=0 compressor is always OFF.

COF Compressor OFF time with faulty probe: (0÷255 min) time during which the compressor is OFF in case of faulty thermostat probe. With COF=0 compressor is always active.

DISPLAY

CF Temperature measurement unit: °C=Celsius; °F=Fahrenheit. WARNING: When the measurement unit is changed the SET point and the values of the parameters Hy, LS, US, Ot, ALU and ALL have to be checked and modified if necessary.

rES Resolution (for °C): (in = 1°C; dE = 0.1 °C) allows decimal point display.

Lod Instrument display: (P1; P2, P3, P4, SET, dtr): it selects which probe is displayed by the instrument: P1 = Thermostat probe; P2 = Evaporator probe; P3 = Third probe(only for model with this option enabled); P4 = Fourth probe, SET = set point; dtr = percentage of visualization.

rEd X- REP display (optional): (P1; P2, P3, P4, SET, dtr): it selects which probe is displayed by X- REP: P1 = Thermostat probe; P2 = Evaporator probe; P3 = Third probe(only for model with this option enabled); P4 = Fourth probe, SET = set point; dtr = percentage of visualization.

dLy Display delay: (0 ÷20.0m; risul. 10s) when the temperature increases, the display is updated of 1 °C/1°F after this time.

dtr Percentage of the second and first probe for visualization when Lod = dtr (0÷100; 100 = P1, 0 = P2); if Lod = dtr it allows to set the visualization according to the percentage of the first and second probe, as for the following formula (dtr(P1-P2)/100 + P2).

DEFROST

dFP Probe selection for defrost termination: nP = no probe; P1 =thermostat probe; P2 = evaporator probe; P3 =configurable probe; P4 = Probe on Hot Key plug.

tdF Defrost type: EL = electrical heater; in = hot gas

dtE Defrost termination temperature: (-50÷50 °C/ -58÷122°F) (Enabled only when EdF=Pb) sets the temperature measured by the evaporator probe, which causes the end of defrost.

ldF Interval between defrost cycles: (0÷120h) Determines the time interval between the beginning of two defrost cycles.

MdF (Maximum) length for defrost: (0÷255min) When P2P = n, (not evaporator probe: timed defrost) it sets the defrost duration, when P2P = y (defrost end based on temperature) it sets the maximum length for defrost.

dSd Start defrost delay: (0÷99min) This is useful when different defrost start times are necessary to avoid overloading the plant.

dFd Temperature displayed during defrost: (rt = real temperature; it = temperature at defrost start; SET = set point; dEF = "dEF" label)

dAd MAX display delay after defrost: (0÷255min). Sets the maximum time between the end of defrost and the restarting of the real room temperature display.

Fdt Drop time: (0÷120 min) time interval between reaching defrost termination temperature and the restoring of the control's normal operation. This time allows the evaporator to eliminate water drops that might have formed due to defrost.

dPo First defrost after start-up: (y = immediately; n = after the ldF time)

dAF Defrost delay after continuous cycle: (0÷23.5h) time interval between the end of the fast freezing cycle and the following defrost related to it.

FANS

FnC Fans operating mode: C-n= runs with the compressor, OFF during defrost;

o-n = continuous mode, OFF during defrost;

C-Y = runs with the compressor, ON during defrost;

o-Y = continuous mode, ON during defrost;

Fnd Fans delay after defrost: (0÷255min) Interval between end of defrost and evaporator fans start.

Fct Temperature differential avoiding short cycles of fans (0÷59°C; Fct=0 function disabled). If the difference of temperature between the evaporator and the room probes is more than the value of the Fct parameter, the fans are switched on.

FSt Fans stop temperature: (-50÷50°C/122°F) setting of temperature, detected by evaporator probe, above which fans are always OFF.

Fon Fan ON time: (0÷15 min) with Fnc = C_n or C_y, (fan activated in parallel with compressor), it sets the evaporator fan ON cycling time when the compressor is off. With Fon =0 and FoF ≠ 0 the fan are always off, with Fon=0 and FoF =0 the fan are always off.

FoF Fan OFF time: (0÷15 min) with Fnc = C_n or C_y, (fan activated in parallel with compressor), it sets the evaporator fan off cycling time when the compressor is off. With Fon =0 and FoF ≠ 0 the fan are always off, with Fon=0 and FoF =0 the fan are always off.

FAP Probe selection for fan management: nP = no probe; P1 =thermostat probe; P2 = evaporator probe; P3 =configurable probe; P4 = Probe on Hot Key plug.

ALARMS

ALC Temperature alarms configuration: (Ab; rE)

Ab= absolute temperature: alarm temperature is given by the ALL or ALU values. rE = temperature alarms are referred to the set point. Temperature alarm is enabled when the temperature exceeds the "SET+ALU" or "SET-ALL" values.

ALU MAXIMUM temperature alarm: (SET+110°C; SET+230°F) when this temperature is reached the alarm is enabled, after the "ALd" delay time.

ALL Minimum temperature alarm: (-50.0 ÷ SET°C; -58÷230°F) when this temperature is reached the alarm is enabled, after the "ALd" delay time.

- AFH Differential for temperature alarm/ fan recovery: (0,1+25,5°C; 1+45°F) Intervention differential for recovery of temperature alarm. It's also used for the restart of the fan when the FSt temperature is reached
- ALd Temperature alarm delay: (0+255 min) time interval between the detection of an alarm condition and alarm signalling.
- dAO Exclusion of temperature alarm at startup: (from 0.0 min to 23.5h) time interval between the detection of the temperature alarm condition after instrument power on and alarm signalling.

CONDENSER TEMPERATURE ALARM

- AP2 Probe selection for temperature alarm of condenser: nP = no probe; P1 = thermostat probe; P2 = evaporator probe; P3 = configurable probe; P4 = Probe on Hot Key plug.
- AL2 Low temperature alarm of condenser: (-55+150°C) when this temperature is reached the LA2 alarm is signalled, possibly after the Ad2 delay.
- Au2 High temperature alarm of condenser: (-55+150°C) when this temperature is reached the HA2 alarm is signalled, possibly after the Ad2 delay.
- AH2 Differential for temperature condenser alarm recovery: (0,1+25,5°C; 1+45°F)
- Ad2 Condenser temperature alarm delay: (0+255 min) time interval between the detection of the condenser alarm condition and alarm signalling.
- dA2 Condenser temperature alarm exclusion at start up: (from 0.0 min to 23.5h, res. 10min)
- bLL Compressor off with low temperature alarm of condenser: n = no: compressor keeps on working; Y = yes, compressor is switched off till the alarm is present, in any case regulation restarts after AC time at minimum.
- AC2 Compressor off with high temperature alarm of condenser: n = no: compressor keeps on working; Y = yes, compressor is switched off till the alarm is present, in any case regulation restarts after AC time at minimum.

DIGITAL INPUT

- i1P Digital input polarity: oP: the digital input is activated by opening the contact; CL: the digital input is activated by closing the contact.
- i1F Digital input configuration: EAL = external alarm: "EA" message is displayed; bAL = serious alarm "CA" message is displayed. PAL = pressure switch alarm, "CA" message is displayed; dor = door switch function; dEF = activation of a defrost cycle; AUS = not enabled; Htr = kind of action inversion (cooling - heating); FAn = not set it; ES = Energy saving.
- did: (0+255 min) with i1F = EAL or i1F = bAL digital input alarm delay: delay between the detection of the external alarm condition and its signalling.
with i1F = dor: door open signalling delay
with i1F = PAL: time for pressure switch function: time interval to calculate the number of the pressure switch activation.
- nPS Pressure switch number: (0 +15) Number of activation of the pressure switch, during the "did" interval, before signalling the alarm event (i2F = PAL).
If the nPS activation in the did time is reached, switch off and on the instrument to restart normal regulation.
- odc Compressor and fan status when open door: no = normal; Fan = Fan OFF; CPr = Compressor OFF; F_C = Compressor and fan OFF.
- rrd Outputs restart after doA alarm: no = outputs not affected by the doA alarm; yES = outputs restart with the doA alarm;
- HES Temperature increase during the Energy Saving cycle : (-30,0°C-30,0°C/22+86°F) it sets the increasing value of the set point during the Energy Saving cycle.

OTHER

- Adr Serial address (1+244): Identifies the instrument address when connected to a ModBUS compatible monitoring system.
- PbC Type of probe: it allows to set the kind of probe used by the instrument: PbC = PBC probe, ntc = NTC probe.
- onF Energy saving key enabling: nu = disabled; oFF = not set it; ES = enabled.
- dP1 Thermostat probe display
- dP2 Evaporator probe display
- dP3 Third probe display- *optional*.
- dP4 Fourth probe display.
- rSE Real set point: (readable only), it shows the set point used during the energy saving cycle or during the continuous cycle.
- rEL Software release for internal use.
- Ptb Parameter table code: readable only.

8. DIGITAL INPUT (ENABLED WITH P3P = N)

The free voltage digital input is programmable in different configurations by the "i1F" parameter.

8.1 DOOR SWITCH INPUT (i1F = dor)

It signals the door status and the corresponding relay output status through the "odc" parameter: no = normal (any change); Fan = Fan OFF; CPr = Compressor OFF; F_C = Compressor and fan OFF. Since the door is opened, after the delay time set through parameter "did", the door alarm is enabled, the display shows the message "dA" and the regulation restarts if rtr = yES. The alarm stops as soon as the external digital input is disabled again. With the door open, the high and low temperature alarms are disabled.

8.2 GENERIC ALARM (i1F = EAL)

As soon as the digital input is activated the unit will wait for "did" time delay before signalling the "EAL" alarm message. The outputs status don't change. The alarm stops just after the digital input is de-activated.

8.3 SERIOUS ALARM MODE (i1F = bAL)

When the digital input is activated, the unit will wait for "did" delay before signalling the "CA" alarm message. The relay outputs are switched OFF. The alarm will stop as soon as the digital input is de-activated.

8.4 PRESSURE SWITCH (i1F = PAL)

If during the interval time set by "did" parameter, the pressure switch has reached the number of activation of the "nPS" parameter, the "CA" pressure alarm message will be displayed. The compressor and the regulation are stopped. When the digital input is ON the compressor is always OFF.
If the nPS activation in the did time is reached, switch off and on the instrument to restart normal regulation.

8.5 START DEFROST (i1F = dFr)

It starts a defrost if there are the right conditions. After the defrost is finished, the normal regulation will restart only if the digital input is disabled otherwise the instrument will wait until the "MdF" safety time is expired.

8.6 INVERSION OF THE KIND OF ACTION: HEATING-COOLING (i1F = Htr)

This function allows to invert the regulation of the controller: from cooling to heating and viceversa.

8.7 ENERGY SAVING (i1F = ES)

The Energy Saving function allows to change the set point value as the result of the SET+ HES (parameter) sum. This function is enabled until the digital input is activated.

8.8 DIGITAL INPUTS POLARITY

The digital input polarity depends on the "i1P" parameter.

i1P=CL: the input is activated by closing the contact.

i1P=OP: the input is activated by opening the contact

9. TTL SERIAL LINE - FOR MONITORING SYSTEMS

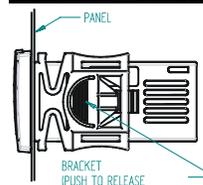
The TTL serial line, available through the HOT KEY connector, allows by means of the external TTL/RS485 converter, XJ485-CX, to connect the instrument to a monitoring system ModBUS-RTU compatible such as the X-WEB500/3000/300.

10. X-REP OUTPUT - OPTIONAL

As optional, an X-REP can be connected to the instrument, through the HOY KEY connector. The X-REP output **EXCLUDES** the serial connection.



To connect the X-REP to the instrument the following connectors must be used CAB-51F(1m), CAB-52F(2m), CAB-55F(5m),

11. INSTALLATION AND MOUNTING

Instrument XR60CX shall be mounted on vertical panel, in a 29x71 mm hole, and fixed using the special bracket supplied.
The temperature range allowed for correct operation is 0+60 °C. Avoid places subject to strong vibrations, corrosive gases, excessive dirt or humidity. The same recommendations apply to probes. Let air circulate by the cooling holes.

12. ELECTRICAL CONNECTIONS

The instrument is provided with screw terminal block to connect cables with a cross section up to 2,5 mm². Before connecting cables make sure the power supply complies with the instrument's requirements. Separate the probe cables from the power supply cables, from 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.

12.1 PROBE CONNECTION

The probes shall be mounted with the bulb upwards to prevent damages due to casual liquid infiltration. It is recommended to place the thermostat probe away from 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.

13. HOW TO USE THE HOT KEY**13.1 HOW TO PROGRAM A HOT KEY FROM THE INSTRUMENT (UPLOAD)**

1. Program one controller with the front keypad.
2. When the controller is ON, insert the "Hot Key" and push **X** key; the "uPL" message appears followed a by flashing "End"
3. Push "SET" key and the End will stop flashing.
4. Turn OFF the instrument remove the "Hot Key", then turn it ON again.

NOTE: the "Err" message is displayed for failed programming. In this case push again **Y** key if you want to restart the upload again or remove the "Hot Key" to abort the operation.

13.2 HOW TO PROGRAM AN INSTRUMENT USING A HOT KEY (DOWNLOAD)

1. Turn OFF the instrument.
2. Insert a programmed "Hot Key" into the 5 PIN receptacle and then turn the Controller ON.
3. Automatically the parameter list of the "Hot Key" is downloaded into the Controller memory, the "dOL" message is blinking followed a by flashing "End".
4. After 10 seconds the instrument will restart working with the new parameters.
5. Remove the "Hot Key" ..

NOTE the message "Err" is displayed for failed programming. In this case turn the unit off and then on if you want to restart the download again or remove the "Hot key" to abort the operation.

14. ALARM SIGNALS

Message	Cause	Outputs
"P1"	Room probe failure	Compressor output acc. to par. "Con" and "COF"
"P2"	Evaporator probe failure	Defrost end is timed
"P3"	Third probe failure	Outputs unchanged
"P4"	Fourth probe failure	Outputs unchanged
"HA"	Maximum temperature alarm	Outputs unchanged.
"LA"	Minimum temperature alarm	Outputs unchanged.
"HA2"	Condenser high temperature	It depends on the "Ac2" parameter

Message	Cause	Outputs
"LA2"	Condenser low temperature	It depends on the "bLL" parameter
"dA"	Door open	Compressor and fans restarts
"EA"	External alarm	Output unchanged.
"CA"	Serious external alarm (i1F=bAL)	All outputs OFF.
"CA"	Pressure switch alarm (i1F=PAL)	All outputs OFF.

14.1 ALARM RECOVERY

Probe alarms P1", "P2", "P3" and "P4" start some seconds after the fault in the related probe; they automatically stop some seconds after the probe restarts normal operation. Check connections before replacing the probe.

Temperature alarms "HA", "LA", "HA2" and "LA2" automatically stop as soon as the temperature returns to normal values.

Alarms "EA" and "CA" (with i1F=bAL) recover as soon as the digital input is disabled.

Alarm "CA" (with i1F=PAL) recovers only by switching off and on the instrument.

14.2 OTHER MESSAGES

Pon	Keyboard unlocked.
PoF	Keyboard locked
noP	In programming mode: none parameter is present in Pr1 On the display or in dP2, dP3, dP4: the selected probe is nor enabled
noA	None alarm is recorded.

15. TECHNICAL DATA

Housing: self extinguishing ABS.

Case: XR60CX frontal 32x74 mm; depth 60mm;

Mounting: XR60CX panel mounting in a 71x29mm panel cut-out

Protection: IP20; Frontal protection: XR60CX IP65

Connections: Screw terminal block ≤ 2.5 mm² wiring.

Power supply: according to the model: 12Vac/dc, ±10%; 24Vac/dc, ±10%; 230Vac ±10%, 50/60Hz, 110Vac ±10%, 50/60Hz

Power absorption: 3VA max

Display: 3 digits, red LED, 14.2 mm high; Inputs: Up to 4 NTC or PTC probes.

Digital input: free voltage contact

Relay outputs: compressor SPST 8(3) A, 250Vac; SPST 16(6)A 250Vac or 20(8)A 250Vac

defrost: SPST 8(3) A, 250Vac; fan: SPST 8(3) A, 250Vac or SPST 5(2) A

Data storing: on the non-volatile memory (EEPROM).

Kind of action: 1B; Pollution grade: 2; Software class: A.;

Rated impulsive voltage: 2500V; Overvoltage Category: II

Operating temperature: 0+60 °C; Storage temperature: -30+85 °C.

Relative humidity: 20+85% (no condensing)

Measuring and regulation range: NTC probe: -40+110°C (-40+230°F);

PTC probe: -50+150°C (-58+302°F)

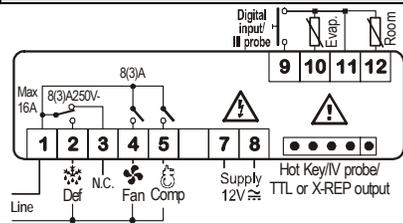
Resolution: 0,1 °C or 1 °C or 1 °F (selectable); Accuracy (ambient temp. 25°C): ±0,7 °C ±1 digit

16. CONNECTIONS

The X-REP output excludes the TTL output.. It's present in the following codes:

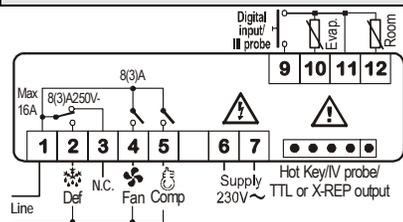
XR60CX-xx2xx, XR60CX-xx3xx;

16.1 XR60CX – 8A OR 16A COMP. RELAY - 12VAC/DV OR 24 VAC/DV



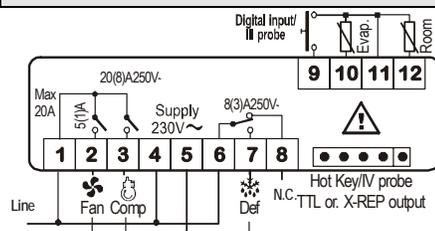
NOTE: The compressor relay is 8(3)A or 16(6)A according to the model.
24Vac/dc supply: connect to the terminals 7 and 8.

16.2 XR60CX – 8A OR 16A COMP. RELAY - 120VAC OR 230 VAC



NOTE: The compressor relay is 8(3)A or 16(6)A according to the model.
120Vac supply: connect to the terminals 6 and 7.

16.3 XR60C – 20A COMP. RELAY - 120VAC OR 230 VAC



120Vac supply: connect to the terminals 5 and 6.

17. DEFAULT SETTING VALUES

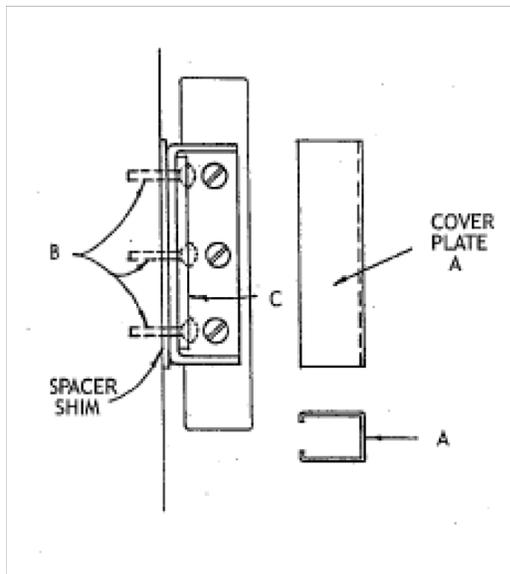
Label	Name	Range	°C/°F	
Set	Set point	LS+US	-5/0/0	---
Hy	Differential	0,1+25.5°C/ 1+255°F	2/0/4	Pr1
LS	Minimum set point	-50°C+SET/-58°F+SET	-50/-58	Pr2
US	Maximum set point	SET+110°C/ SET + 230°F	110/230	Pr2
Ot	Thermostat probe calibration	-12+12°C /-120+120°F	0/0/0	Pr1
P2P	Evaporator probe presence	n=not present; Y=pres.	Y	Pr1
OE	Evaporator probe calibration	-12+12°C /-120+120°F	0/0/0	Pr2
P3P	Third probe presence	n=not present; Y=pres.	n	Pr2
O3	Third probe calibration	-12+12°C /-120+120°F	0/0/0	Pr2
P4P	Fourth probe presence	n=not present; Y=pres.	n	Pr2
O4	Fourth probe calibration	-12+12°C /-120+120°F	0/0/0	Pr2
ODS	Outputs delay at start up	0+255 min	0	Pr2
AC	Anti-short cycle delay	0 + 50 min	1	Pr1
rtr	P1-P2 percentage for regulation	0 + 100 (100=P1 , 0=P2)	100	Pr2
CCt	Continuous cycle duration	0.0+24.0h	0.0	Pr2
CCS	Set point for continuous cycle	(-55.0+150.0°C) (-67+302°F)	-5/0	Pr2
COon	Compressor ON time with faulty probe	0 + 255 min	15	Pr2
COF	Compressor OFF time with faulty probe	0 + 255 min	30	Pr2
CF	Temperature measurement unit	°C ÷ °F	°C/°F	Pr2
rES	Resolution	in=integer; dE= dec.point	dE /in	Pr1
Lod	Probe displayed	P1-P2	P1	Pr2
rEd	X-REP display	P1 - P2 - P3 - P4 - SET - dtr	P1	Pr2
dLy	Display temperature delay	0 + 20.0 min (10 sec.)	0	Pr2
dtr	P1-P2 percentage for display	1 + 99	50	Pr2
tdF	Defrost type	EL=el. heater; in= hot gas	EL	Pr1
dFP	Probe selection for defrost termination	nP; P1; P2; P3; P4	P2	Pr2
dTE	Defrost termination temperature	-50 + 50 °C	8/46	Pr1
ldF	Interval between defrost cycles	1 + 120 ore	6	Pr1
MdF	(Maximum) length for defrost	0 + 255 min	30	Pr1
dSd	Start defrost delay	0+99min	0	Pr2
dFd	Displaying during defrost	r, it, SET, DEF	it	Pr2
dAd	MAX display delay after defrost	0 + 255 min	30	Pr2
Fdt	Draining time	0+120 min	0	Pr2
dPo	First defrost after startup	n=after ldF; y=immed.	n	Pr2
dAF	Defrost delay after fast freezing	0 + 23h e 50'	0.0	Pr2
Fnc	Fan operating mode	C-n, o-n, C-y, o-Y	o-n	Pr1
Fnd	Fan delay after defrost	0+255min	10	Pr1
Fct	Differential of temperature for forced activation of fans	0+50°C	10/20	Pr2
FSt	Fan stop temperature	-50+50°C/-58+122°F	2/36	Pr1
Fon	Fan on time with compressor off	0+15 (min.)	0	Pr2
Fof	Fan off time with compressor off	0+15 (min.)	0	Pr2
FAP	Probe selection for fan management	nP; P1; P2; P3; P4	P2	Pr2
ALc	Temperat. alarms configuration	rE= related to set; Ab = absolute	Ab	Pr2
ALU	MAXIMUM temperature alarm	Set+110.0°C; Set+230°F	110/230	Pr1
ALL	Minimum temperature alarm	-50.0°C+Set/ -58°F+Set	-50/-58	Pr1
AFH	Differential for temperat. alarm recovery	(0,1°C+25.5°C) (1°F+45°F)	1/2	Pr2
ALd	Temperature alarm delay	0 + 255 min	15	Pr2
dAO	Delay of temperature alarm at start up	0 + 23h e 50'	1.3	Pr2
AP2	Probe for temperat. alarm of condenser	nP; P1; P2; P3; P4	P4	Pr2
AL2	Condenser for low temperat. alarm	(-55 + 150°C) (-67+ 302°F)	-40/-40	Pr2
AU2	Condenser for high temperat. alarm	(-55 + 150°C) (-67+ 302°F)	110/230	Pr2
AH2	Differ. for condenser temp. alar. recovery	[0,1°C + 25.5°C] [1°F + 45°F]	5/4	Pr2
Ad2	Condenser temperature alarm delay	0 + 254 (min.) , 255=nU	15	Pr2
dA2	Delay of cond. temper. alarm at start up	0.0 + 23h 50'	1,3	Pr2
bLL	Compr. off for condenser low temperature alarm	n(0) - Y(1)	n	Pr2
AC2	Compr. off for condenser high temperature alarm	n(0) - Y(1)	n	Pr2
i1P	Digital input polarity	oP=opening; CL=closing	cL	Pr1
i1F	Digital input configuration	EAL, bAL, PAL, dor; dEF; Htr, AUS	dor	Pr1
did	Digital input alarm delay	0+255min	15	Pr1
Nps	Number of activation of pressure switch	0 + 15	15	Pr2
odc	Compress and fan status with open door	no; Fan; CP; F_C	F-c	Pr2
rrd	Regulation restart with door open alarm	n - Y	y	Pr2
HES	Differential for Energy Saving	(-30°C+30°C) (-54°F+54°F)	0/0	Pr2
Pbc	Kind of probe	Ptc; ntc	ntc	Pr2
Adr	Serial address	1+247	1	Pr2
onF	on/off key enabling	nu, oFF; ES	ntc	Pr1
dP1	Room probe display	--	--	Pr2
dP2	Evaporator probe display	--	--	Pr1
dP3	Third probe display	--	--	Pr1
dP4	Fourth probe display	--	--	Pr1
rSE	Valore set operativo	actual set	--	Pr2
rEL	Software release	--	--	Pr2
Ptb	Map code	--	--	Pr2

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E-mail: dixell@dixell.com - http://www.dixell.com

2 Only for models XR60CX-xx2xx, XR60CX-xx3xx;

5 Hinge And Latch Adjustment

5.1 Hinge Adjustment



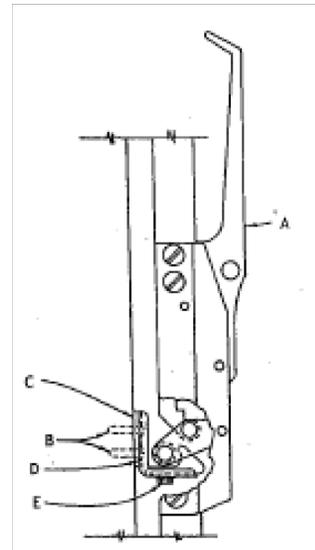
1. Remove exterior hinge cover plate by opening the refrigerator door. Place a screwdriver under interior portion of cover and gently pry cover outward. Pull straight out. Close cover.
2. Loosen the three (3) screws "B" which hold adjusting plate "C" in position.
3. To tighten gasket seal, place hand against exterior of door near hinges; gently press in on door so gasket sits firmly against cabinet face. Tighten screws "B".
4. When adjustment is complete, if hinges are adjusted so gasket seal is too tight, door will tend to spring open. Door must be readjusted. To test gasket seal, insert a dollar bill (or piece of paper of similar size) between the gasket and the cabinet opening. Close door; a slight resistance to removal of the dollar bill (test strip) should be felt. Check the perimeter of the door. If the latch is loose, see latch-adjusting information.
5. Replace cover plate "A."

Note: To accomplish different offsets, shims are utilized. If replacing hinges, make sure to reuse any shims furnished on the cabinet.

5.2 Latch and Strike Adjustment

1. Latch is fastened to door.
2. For up or down adjustment (proper latch engagement) loosen mounting screws "B".
3. Strike plate "C" remains in position.
4. Move strike "D" up or down as required and tighten screws "B" when adjustment is satisfactory. No play will be present in the latch handle with the door closed.
5. For in and out adjustment (proper gasket seal) loosen screw "E". Adjust in or out as required and tighten screw when adjustment is satisfactory.
6. The stainless steel hex head cap screw is 10/32" X 5/16" long. Use box wrench, open-end wrench, or ratchet to tighten. Do not use a nut driver or pliers.

Note: If replacing latch and strike assembly, make sure to reuse any shims furnished on the cabinet.



TROUBLESHOOTING SERVICE CHART

	SYMPTOM	POSSIBLE CAUSE	POSSIBLE CORRECTIVE STEP
A	Compressor will not start, no hum	1. Line disconnect switch open.	1. Close disconnect switch
		2. Fuse blown or breaker tripped.	2. Check electrical circuits and motor windings for shorts or grounds. Investigate for possible overloading. Replace fuse or reset breaker after fault is corrected.
		3. Thermal overload tripped.	3. Overloads are automatically reset. Check unit closely when compressor comes back on line.
		4. No cooling required	4. None. Wait until control calls for cooling.
		5. Control contacts stuck in open position.	5. Replace control.
		6. Loose wiring.	6. Check all wiring junctions, tighten all terminal screws.
		7. Improper wiring	7. Check wiring against diagram.
		8. Liquid line solenoid valve will not open.	8. Repair or replace solenoid coil
		9. Motor electrical trouble.	9. Check motor for open windings, Short circuit or burn out.
		10. Liquid line solenoid will not open.	10. Repair or replace coil.
B	Compressor will not start, hums but trips on thermal overload.	1. Low voltage to unit.	1. Determine reason and correct.
		2. Start capacitor failure or wrong.	2. Replace start capacitor.
		3. Run capacitor failure or wrong.	3. Replace run capacitor.
		4. Start relay failure or wrong.	4. Replace start relay.
		5. Motor electrical trouble.	5. Check motor for open windings, Short circuit or burn out.
		6. Internal mechanical trouble in compressor.	6. Replace compressor.
		7. Improper wiring	7. Check wiring against diagram.
		8. Excessively high discharge pressure.	8. See high discharge pressure symptom.
C	Compressor starts, but does not switch off of start winding.	1. Low voltage to unit.	1. Determine reason and correct.
		2. Run capacitor failure or wrong.	2. Replace run capacitor.
		3. Start capacitor failure or wrong.	3. Replace start capacitor.
		4. Start relay failure or wrong.	4. Replace start relay.
		5. Motor electrical trouble.	5. Check motor for open windings, Short circuit or burn out.
		6. Internal mechanical trouble in compressor.	6. Replace compressor.
		7. Improper wiring.	7. Check wiring against diagram.
		8. Excessively high discharge pressure.	8. See high discharge pressure symptom.

TROUBLESHOOTING SERVICE CHART

	SYMPTOM	POSSIBLE CAUSE	POSSIBLE CORRECTIVE STEP
D	Compressor starts and runs, but short cycles on overload protector.	1. Excessively high discharge pressure.	1. See high discharge pressure symptom.
		2. Low voltage to unit.	2. Determine reason and correct.
		3. High voltage to unit.	3. Determine reason and correct.
		4. Thermal overload protector defective.	4. Check current, Replace protector.
		5. Run capacitor failure or wrong.	5. Replace run capacitor.
		6. Motor electrical trouble.	6. Check motor for open windings, Short circuit or burn out.
		7. Improper wiring causing additional current to pass through overload protector.	7. Check wiring diagram. Check for added fan motors, heaters, etc., connected to wrong side of protector.
E	Compressor starts and runs, but short cycles on temperature or pressure controls.	1. Differential set too close.	1. Widen differential.
		2. High discharge pressure.	2. See high discharge pressure symptom.
		3. Low discharge pressure.	1. See low discharge pressure symptom.
F	Compressor runs long or continuously.	1. Shortage of refrigerant.	1. Leak check and repair.
		2. Control contacts stuck or frozen.	2. Clean contacts or replace control.
		3. Refrigerated air space has an excessive load.	3. Determine reason and correct.
		4. Dirty Condenser	4. Clean condenser.
		5. Evaporator coil iced.	5. Defrost and check defrost circuit.
		6. Restriction in refrigeration system.	6. Determine location and remove.
		7. Evaporator fan motors not running.	7. Determine reason and correct. Check door switch.
G	Compressor noisy or vibrating.	1. Flooding of refrigerant into crankcase.	1. Check expansion device and refrigerant charge.
		2. Improper piping support.	2. Relocate tubing or add hangers.
		3. Worn compressor.	3. Replace compressor.
		4. Loose parts or mounting.	4. Find and tighten.
		5. Condenser fan blade loose or impeded.	5. Check and repair.
H	High Discharge pressure.	1. Non-condensables in system.	1. Remove the non-condensables.
		2. System overcharged with refrigerant.	2. Correct the charge.
		3. Discharge shutoff valve partially closed.	3. Open valve.
		4. Condenser fans not running.	4. Check electrical circuit.
		5. Dirty condenser.	5. Clean.
I	Low discharge pressure.	1. Suction shutoff valve partially closed.	1. open valve.
		2. Insufficient refrigerant in system.	2. Check for leaks. Repair and add charge.
		3. Low suction pressure.	3. See low suction pressure symptom.

TROUBLESHOOTING SERVICE CHART

	SYMPTOM	POSSIBLE CAUSE	POSSIBLE CORRECTIVE STEP
J	High suction pressure.	1. Excessive load.	1. Reduce load or add additional equipment.
		2. Expansion valve overfeeding.	2. Check remote bulb. Adjust superheat.
K	Low suction pressure.	1. Insufficient refrigerant in system.	1. Check for leaks. Repair and add charge.
		2. Restriction in refrigeration system. Most notably the liquid line filter drier or capillary.	2. Determine location and remove.
		3. Expansion valve malfunctioning.	3. Check and reset for proper superheat.
L	Suction line frosted or sweating.	1. Expansion valve passing excess refrigerant or is oversized.	1. Readjust valve or replace with smaller valve.
		2. Expansion valve stuck open.	2. Clean valve of foreign particles, and replace if necessary.
		3. Evaporator fan motors not running.	3. Determine reason and correct. Check door switch.
		4. System overcharged with refrigerant.	4. Correct the charge.
M	Liquid line frosted or sweating	1. Restriction in liquid line filter drier.	1. Determine location and remove.
		2. Liquid line shutoff valve partially closed.	2. Open valve.
N	Ice accumulating on ceiling around evaporator and/or on fan guards or blades.	1. Defrost duration too long.	1. Adjust defrost termination.
		2. Fan delay not delaying fans after defrost period.	2. Defective fan delay thermostat. Replace.
		3. Defective timer.	3. Replace.
		4. Too many defrost cycles per day.	4. Adjust timer for less defrost cycles.
O	Evaporator coil not clearing of frost during defrost cycle.	1. Coil temperature not getting above freezing point during defrost.	1. Check heater operation, or hot gas solenoid valve.
		2. Not enough defrost cycles per day.	2. Adjust timer for more defrost cycles.
		3. Defrost cycle too short.	3. Adjust timer for longer defrost cycle.
		4. Poor door seal.	4. Adjust door latch, install new gasket.
		5. Defective timer or defrost thermostat.	5. Replace defective component.
P	Ice accumulating in drain pan.	1. Defective heater.	1. Replace heater.
		2. Unit not pitched properly.	2. Check and adjust if necessary.
		3. Drain line plugged.	3. Clean drain line.
		4. Defective drain line heater.	4. Replace heater.
		5. Poor contact between drain pan and heater element.	5. Repair.
		6. Defective timer or defrost thermostat.	6. Replace defective component.

NOTE: Jewett Refrigerators and Freezers are designed to operate in areas that are heated to 60° F (15.6° C). Installation in unheated areas may require a low temperature compressor protection kit for satisfactory operation.

WEEE Compliance

WEEE Compliance. This product is required to comply with the European Union's Waste Electrical & Electronic Equipment (WEEE) Directive 2002/96EC. It is marked with the following symbol. Thermo Fisher Scientific has contracted with one or more recycling/disposal companies in each EU Member State, and this product should be disposed of or recycled through them. Further information on our compliance with these Directives, the recyclers in your country, and information on Thermo Scientific products which may assist the detection of substances subject to the RoHS Directive are available at www.thermo.com/

Great Britain



WEEE Konformität. Dieses Produkt muss die EU Waste Electrical & Electronic Equipment (WEEE) Richtlinie 2002/96EC erfüllen. Das Produkt ist durch folgendes Symbol gekennzeichnet. Thermo Fisher Scientific hat Vereinbarungen getroffen mit Verwertungs-/Entsorgungsanlagen in allen EU-Mitgliedstaaten und dieses Produkt muss durch diese Firmen wiederverwertet oder entsorgt werden. Mehr Informationen über die Einhaltung dieser Anweisungen durch Thermo Scientific, die Verwerter und Hinweise die Ihnen nützlich sein können, die Thermo Fisher Scientific Produkte zu identifizieren, die unter diese RoHS. Anweisung fallen, finden Sie unter www.thermo.com/

Deutschland



Conformità WEEE. Questo prodotto deve rispondere alla direttiva dell'Unione Europea 2002/96EC in merito ai Rifiuti degli Apparecchi Elettrici ed Elettronici (WEEE). È marcato col seguente simbolo. Thermo Fisher Scientific ha stipulato contratti con una o diverse società di riciclaggio/smaltimento in ognuno degli Stati Membri Europei. Questo prodotto verrà smaltito o riciclato tramite queste medesime. Ulteriori informazioni sulla conformità di Thermo Fisher Scientific con queste Direttive, l'elenco delle ditte di riciclaggio nel Vostro paese e informazioni sui prodotti Thermo Scientific che possono essere utili alla rilevazione di sostanze soggette alla Direttiva RoHS sono disponibili sul sito www.thermo.com/

Italia



Conformité WEEE. Ce produit doit être conforme à la directive euro-péenne (2002/96EC) des Déchets d'Equipements Electriques et Electroniques (DEEE). Il est marqué par le symbole suivant. Thermo Fisher Scientific s'est associé avec une ou plusieurs compagnies de recyclage dans chaque état membre de l'union européenne et ce produit devrait être collecté ou recyclé par celles-ci. Davantage d'informations sur la conformité de Thermo Fisher Scientific à ces directives, les recycleurs dans votre pays et les informations sur les produits Thermo Fisher Scientific qui peuvent aider la détection des substances sujettes à la directive RoHS sont disponibles sur www.thermo.com/

France



Important

For your future reference and when contacting the factory, please have the following information readily available:

Model Number: _____

Serial Number: _____

Date Purchased: _____

The above information can be found on the dataplate attached to the equipment. If available, please provide the date purchased, the source of purchase (manufacturer or specific agent/rep organization), and purchase order number.

IF YOU NEED ASSISTANCE:

SALES DIVISION

Phone: 1-866-984-3766 (866-9-THERMO)

LABORATORY PARTS and SERVICE

Phone: 1-800-438-4851

TECHNICAL SUPPORT

Phone: 1-800-438-4851

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306819H01 Rev. B