Digital controller with defrost management
XR40CX

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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. 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 to “DIXEL 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 XR40CX, format 32 x 74 mm, is microprocessor based controller, suitable for applications on medium or low temperature refrigerating units. It has 2 relay outputs to control compressor 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, 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 XI485-CX, to a network line ModBUS-RTU compatible such as the dixel®, 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 “Con” and “Coff”. If there is no temperature sensed, the compressor is OFF.

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 (UF), 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 FST parameter. With FST = 0 the dripping time is disabled.

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.

• Switch the instrument off, if on = OFF.
• Not enabled.

KEY COMBINATIONS:

+ To lock & unlock the keyboard.
+ To enter in programming mode.
+ To return to the room temperature display.

4.1 USE OF LEDS

Each LED function is described in the following table.

<table>
<thead>
<tr>
<th>LED</th>
<th>MODE</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ON</td>
<td>Compressor enabled</td>
</tr>
<tr>
<td></td>
<td>Flashing</td>
<td>Anti-short cycle delay enabled</td>
</tr>
<tr>
<td></td>
<td>ON</td>
<td>Defrost enabled</td>
</tr>
<tr>
<td></td>
<td>Flashing</td>
<td>Drip time in progress</td>
</tr>
<tr>
<td></td>
<td>ON</td>
<td>An alarm is occurring</td>
</tr>
<tr>
<td></td>
<td>Flashing</td>
<td>Continuous cycle is running</td>
</tr>
<tr>
<td></td>
<td>ON</td>
<td>Energy saving enabled</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
<td>Measurement unit</td>
</tr>
<tr>
<td></td>
<td>Flashing</td>
<td>Programming phase</td>
</tr>
</tbody>
</table>

5. MAX & MIN TEMPERATURE MEMORIZATION

5.1 HOW TO SEE THE MIN TEMPERATURE

1. Press and release the "-" key.
2. The “L” message will be displayed followed by the minimum temperature recorded.
3. By pressing the "-" 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 "+" key.
2. The “H” message will be displayed followed by the maximum temperature recorded.
3. By pressing the "+" 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

1. Push and immediately release the SET key; the display will show the Setpoint value.
2. Push and immediately release the SET key or wait for 5s 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 Setpoint 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 “-” or “+” arrows within 10s.
4. To memorise the new set point value push the SET key again or wait 5s the normal display will be restored.

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:
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 + 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.

6.5.2 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" + n.

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 3s 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 or 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  and  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 "  " key for about 3 seconds. The compressor operates to maintain the desired temperature.

6.9 THE ON/OFF FUNCTION

With "off" = off, pushing the ON/OFF key, the instrument is switched off. The "off" message is displayed. In this configuration, the regulation is disabled. To switch the instrument on, push again the ON/OFF key.

WARNING: Loads connected to the normally closed contacts of the relays are always supplied and under voltage, even if the instrument is in stand by mode.

7. PARAMETERS

REGULATION

Hy Differential: (0.1÷25.5°C; 0÷25.5 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°C) Sets the maximum value for set point.
O1 Evaporator probe calibration: (-12.0÷12.0°C; -125÷125°F) allows to adjust possible offset of the evaporator probe.
P1 Evaporator probe presence: nP: not present; yP: present, the evaporator probe; yP: present, the terminal operates as third probe.
P2 Evaporator probe calibration: (-12.0÷12.0°C; -125÷125°F) allows to adjust possible offset of the evaporator probe.
P3 Pressure switch number: (0÷255) min) time interval between the pressure switch activation.
CPr Condenser temperature alarm (detected by the fourth probe) (-55÷150°C) when this temperature is reached the AL2 alarm is activated.
CPr = Probe on Hot Key plug.
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HES Temperature increase during the Energy Saving cycle: (±30.0°C-30.0°C)/22÷85°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.

**PcB** Type of probe: it allows to set the kind of probe used by the instrument: PBC = PBC probe, ntc = NTC probe.

**onOff** thermostat key enabling: nu = disabled; eFF = enabled; ES = not set it.

**Thermostat probe display**

**Evaporator probe display**

**Third probe display: optional.**

**Fourth 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.

**Pib** Parameter table code: readable only.

### 8. DIGITAL INPUT ENABLED WITH P3 ≥ N

The free voltage digital input is programmable in different configurations by the "1°F" parameter.

#### 8.1 DOOR SWITCH INPUT (1°F = dor)

It signals the door status and the corresponding relay output status through the "oodc" parameter. noFan = normal (any change); Cn, F, C = Compressor 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 rSE = yES. The alarm stops as soon as the external digital input is disabled. When the door is closed, the high and low temperature alarms are disabled.

#### 8.2 GENERIC ALARM (1°F = 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 (1°F = 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 (1°F = 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 (1°F = 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 (1°F = Htr)

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

#### 8.7 ENERGY SAVING (1°F = 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 "1°F" parameter. 1P=CL: the input is activated by closing the contact. 1P=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 for the external TTL/RS485 converter, X48S-CX, to connect to a monitoring system ModBUS-RTU compatible such as the X-WEB500/3000/3300.

### 10. X-REP OUTPUT – OPTIONAL

As optional, an X-REP can be connected to the instrument, trough the HOY KEY connector. The X-REP output excludes the serial connection. It connects to 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 XR40CX 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 0-40 °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 a key; the "uP" message appears followed by a 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 a 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 "Sid" message is blinking followed by a 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

<table>
<thead>
<tr>
<th>Message</th>
<th>Cause</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1*</td>
<td>Room probe failure</td>
<td>Compressor output acc. to par. &quot;Con&quot; and &quot;COF&quot;</td>
</tr>
<tr>
<td>P2*</td>
<td>Evaporator probe failure</td>
<td>Defrost end is timed</td>
</tr>
<tr>
<td>P3*</td>
<td>Third probe failure</td>
<td>Outputs unchanged</td>
</tr>
<tr>
<td>P4*</td>
<td>Fourth probe failure</td>
<td>Outputs unchanged</td>
</tr>
<tr>
<td>HA*</td>
<td>Maximum temperature alarm</td>
<td>Outputs unchanged</td>
</tr>
<tr>
<td>LA*</td>
<td>Minimum temperature alarm</td>
<td>Outputs unchanged</td>
</tr>
<tr>
<td>HA2*</td>
<td>Condenser high temperature</td>
<td>Depends on the &quot;ac2&quot; parameter</td>
</tr>
<tr>
<td>LA2*</td>
<td>Condenser low temperature</td>
<td>Depends on the &quot;bl&quot; parameter</td>
</tr>
<tr>
<td>DA*</td>
<td>Door open</td>
<td>Compressor according to rrd</td>
</tr>
<tr>
<td>EA*</td>
<td>External alarm</td>
<td>Output unchanged</td>
</tr>
<tr>
<td>CA*</td>
<td>Serious external alarm (1°F=BAL)</td>
<td>All outputs OFF</td>
</tr>
<tr>
<td>LA*</td>
<td>Pressure switch alarm (1°F=PAL)</td>
<td>All outputs OFF</td>
</tr>
</tbody>
</table>

### 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. Alarm "EA*" and "CA*" (with 1°F=BAL) recover as soon as the digital input is disabled. Alarm "CA*" (with 1°F=PAL) returns only by switching off and on the instrument.

### 14.2 OTHER MESSAGES

- **Pon**: Keyboard unlocked
- **Pof**: Power failure
- **nPm**: In programming mode: none parameter is present in Pr1
- **On**: On the display or in dp2, dp3, dp4: the selected probe is not enabled
- **noA**: None alarm is recorded.

### 15. TECHNICAL DATA

- **Housing**: self extinguishing ABS. Case: XR40CX frontal 32x74 mm; depth 60mm;
- **Mounting**: XR40CX panel mounting in a 71x26mm panel cut-out
- **Protection**: IP20; Frontal protection: XR40CX IP65
- **Connections**: Screw terminal block ≤ 2.5 mm² wiring.
- **Power supply**: according to the model: 12Vac/dc ±10%, 24Vac/dc ±10%, 230Vac ±10%, 56/60Hz; 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) A, 250Vac; or 20(8)A 250Vac
- **Defrost**: SPDT (8) A, 250Vac
- **Data storage**: on the non-volatile memory (EEPROM).
- **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
Installing and Operating Instructions

16. CONNECTIONS
The X-REP output excludes the TTL output. It's present in the following codes:
XR40CX-xx2xx, XR40CX-xx3xx;

16.1 XR40CX – 8A COMPRESSOR

12Vac/dc supply: connect to the terminals 7 and 8.
24Vac/dc supply: connect to the terminals 7 and 8.
120Vac supply: connect to the terminals 7 and 8.

16.2 XR40CX – 20A COMPRESSOR

12Vac/dc supply: connect to the terminals 7 and 8.
24Vac/dc supply: connect to the terminals 7 and 8.
120Vac supply: connect to the terminals 7 and 8.

17. DEFAULT SETTING VALUES

<table>
<thead>
<tr>
<th>Label</th>
<th>Name</th>
<th>Range</th>
<th>°C/F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set</td>
<td>Set point</td>
<td>5-19 S.U.S</td>
<td>-5.0 - 176.0</td>
</tr>
<tr>
<td>DrF</td>
<td>Differential</td>
<td>0.1÷25.5°C / 1÷125°F</td>
<td>-5.0 - 45.5</td>
</tr>
<tr>
<td>LS</td>
<td>Minimum set point</td>
<td>-50°C/SET-58°F/SET</td>
<td>-50.0 P1</td>
</tr>
<tr>
<td>US</td>
<td>Maximum set point</td>
<td>SET-110°C/SET - 230°F</td>
<td>110 Pr2</td>
</tr>
<tr>
<td>Dc</td>
<td>Thermostat probe calibration</td>
<td>-12÷1.5°C / -12÷2.7°F</td>
<td>0.0 P1</td>
</tr>
<tr>
<td>P2P</td>
<td>Evaporator probe presence</td>
<td>N/not present; Y/pres.</td>
<td>Y P1</td>
</tr>
<tr>
<td>ETP</td>
<td>Evaporator probe calibration</td>
<td>-12÷1.5°C / -12÷2.7°F</td>
<td>0.0 P1</td>
</tr>
<tr>
<td>P3P</td>
<td>Third probe presence</td>
<td>N/not present; Y/pres.</td>
<td>n P2</td>
</tr>
<tr>
<td>P3</td>
<td>Third probe calibration</td>
<td>-12÷1.5°C / -12÷2.7°F</td>
<td>0 P2</td>
</tr>
<tr>
<td>P4P</td>
<td>Fourth probe presence</td>
<td>N/not present; Y/pres.</td>
<td>n P2</td>
</tr>
<tr>
<td>P4</td>
<td>Fourth probe calibration</td>
<td>-12÷1.5°C / -12÷2.7°F</td>
<td>0 P2</td>
</tr>
<tr>
<td>Gd</td>
<td>Outputs delay at start up</td>
<td>0÷255 min</td>
<td>0 Pr2</td>
</tr>
<tr>
<td>AC</td>
<td>Anti-short cycle delay</td>
<td>0÷50 min</td>
<td>1 Pr2</td>
</tr>
<tr>
<td>fLr</td>
<td>P1-P2 percentage for regulation</td>
<td>0÷100 %</td>
<td>100 P2</td>
</tr>
<tr>
<td>CCi</td>
<td>Continuous cycle duration</td>
<td>0.0÷24.0 h</td>
<td>0.0 P2</td>
</tr>
<tr>
<td>CSS</td>
<td>Set point for continuous cycle</td>
<td>-55÷150.0°C (-67÷302°F)</td>
<td>-5 P2</td>
</tr>
<tr>
<td>COn</td>
<td>Compressor ON time with faulty probe</td>
<td>0÷255 min</td>
<td>15 P2</td>
</tr>
<tr>
<td>COF</td>
<td>Compressor OFF time with faulty probe</td>
<td>0÷255 min</td>
<td>30 P2</td>
</tr>
<tr>
<td>CF</td>
<td>Temperature measurement unit</td>
<td>°C = °F</td>
<td>°C P2</td>
</tr>
<tr>
<td>res</td>
<td>Resolution</td>
<td>min/integer; dE=dec.point</td>
<td>dE P1</td>
</tr>
<tr>
<td>Log</td>
<td>Probe displayed</td>
<td>P1/P2</td>
<td>P1 P2</td>
</tr>
<tr>
<td>dRE</td>
<td>X-REP display</td>
<td>P1 - P2 - P3 - P4 - SEt - dtr</td>
<td>P1 P2</td>
</tr>
<tr>
<td>dLy</td>
<td>Display temperature delay</td>
<td>0÷20.0 min (10 sec.)</td>
<td>0 P2</td>
</tr>
<tr>
<td>dFr</td>
<td>P1-P2 percentage for display</td>
<td>1÷99</td>
<td>50 P2</td>
</tr>
<tr>
<td>dFl</td>
<td>Defrost type</td>
<td>EL=ele. heater; in=hot gas</td>
<td>EL P1</td>
</tr>
<tr>
<td>dFPr</td>
<td>Probe selection for defrost termination</td>
<td>nP; P1; P2; P3; P4</td>
<td>P2 P2</td>
</tr>
<tr>
<td>dF1</td>
<td>Defrost termination temperature</td>
<td>-30÷50°C</td>
<td>8 P2</td>
</tr>
<tr>
<td>dIF</td>
<td>Interval between defrost cycles</td>
<td>1÷120 ore</td>
<td>6 P1</td>
</tr>
<tr>
<td>dMu</td>
<td>Maximum length for defrost</td>
<td>0÷255 min</td>
<td>30 P1</td>
</tr>
<tr>
<td>dEs</td>
<td>Start defrost delay</td>
<td>0÷5h</td>
<td>0 P2</td>
</tr>
<tr>
<td>dFe</td>
<td>Displaying during defrost</td>
<td>n=not; Y=pres.</td>
<td>2 P2</td>
</tr>
<tr>
<td>dEa</td>
<td>MAX display delay after defrost</td>
<td>0÷255 min</td>
<td>30 P2</td>
</tr>
<tr>
<td>Fdt</td>
<td>Draining time</td>
<td>0÷120 min</td>
<td>0 P2</td>
</tr>
<tr>
<td>dPl</td>
<td>First defrost after startup</td>
<td>n=after IdF; y=immed.</td>
<td>n P2</td>
</tr>
<tr>
<td>dAf</td>
<td>Defrost delay after fast freezing</td>
<td>0÷23 h 50’</td>
<td>0.0 P2</td>
</tr>
<tr>
<td>AL2</td>
<td>Temporal alarms configuration</td>
<td>n=not angled to set; Ab=absolute</td>
<td>Ab P2</td>
</tr>
<tr>
<td>ALU</td>
<td>Maximum temperature alarm</td>
<td>SET -110°C / SET -230°F</td>
<td>110 P1</td>
</tr>
<tr>
<td>ALL</td>
<td>Minimum temperature alarm</td>
<td>-50°C / SET -56°F / SET</td>
<td>-50.0 P1</td>
</tr>
<tr>
<td>APr</td>
<td>Differential for temporal alarm recovery</td>
<td>(0.1°C÷25.5°C) (1°F÷45°F)</td>
<td>0 P1</td>
</tr>
<tr>
<td>ALd</td>
<td>Temperature alarm delay</td>
<td>0÷255 min</td>
<td>15 P2</td>
</tr>
<tr>
<td>dAO</td>
<td>Delay of temperature alarm at start up</td>
<td>0÷23 h 50’</td>
<td>1.3 P2</td>
</tr>
<tr>
<td>AP2</td>
<td>Probe for temporal. alarm of condenser</td>
<td>nP; P1; P2; P3; P4</td>
<td>P4 P2</td>
</tr>
<tr>
<td>AL2</td>
<td>Condenser for low temperature alarm</td>
<td>(-55÷150°C) (-67÷302°F)</td>
<td>40 P2</td>
</tr>
<tr>
<td>ALz</td>
<td>Condenser for high temperature alarm</td>
<td>(-55÷150°C) (-67÷302°F)</td>
<td>110 P2</td>
</tr>
<tr>
<td>AHz</td>
<td>Defrost for condenser temp. alarm recovery</td>
<td>0÷255 min</td>
<td>5 P2</td>
</tr>
<tr>
<td>dAE</td>
<td>Condenser temperature alarm delay</td>
<td>0÷254 min, 255mU</td>
<td>15 P2</td>
</tr>
<tr>
<td>dAz</td>
<td>Delay of cond. temp. alarm at start up</td>
<td>0.0÷23 h 50’</td>
<td>1.3 P2</td>
</tr>
<tr>
<td>bLL</td>
<td>Compr. off for condenser low temperature alarm</td>
<td>n=P1 - Y(1)</td>
<td>n P2</td>
</tr>
<tr>
<td>AC2</td>
<td>Compr. off for condenser high temperature alarm</td>
<td>n=P1 - Y(1)</td>
<td>n P2</td>
</tr>
<tr>
<td>dIP</td>
<td>Digital input polarity</td>
<td>o=Opening; c=Closing</td>
<td>c P1</td>
</tr>
<tr>
<td>dIF</td>
<td>Digital input configuration</td>
<td>EAL = BAL, PAL, dEF, Htr, AUS</td>
<td>EAL P1</td>
</tr>
<tr>
<td>dld</td>
<td>Digital input delay</td>
<td>0÷255 min</td>
<td>5 P1</td>
</tr>
<tr>
<td>Nga</td>
<td>Number of activation of pressure switch</td>
<td>0÷15</td>
<td>15 P2</td>
</tr>
<tr>
<td>ddc</td>
<td>Compress status when open door</td>
<td>no; Fan; G; F; C</td>
<td>no P2</td>
</tr>
<tr>
<td>ndr</td>
<td>Regulation restart with open door alarm</td>
<td>n=Y</td>
<td>Y P1</td>
</tr>
<tr>
<td>HES</td>
<td>Differential for Energy Saving</td>
<td>(-30°C÷30°C) (-45°F÷45°F)</td>
<td>0 P2</td>
</tr>
<tr>
<td>Adr</td>
<td>Serial address</td>
<td>0÷247</td>
<td>1 P2</td>
</tr>
<tr>
<td>Pbc</td>
<td>Kind of probe</td>
<td>Ptc; ntc</td>
<td>ntc P2</td>
</tr>
<tr>
<td>npn</td>
<td>Offset key enabling</td>
<td>nu; Ot; ES</td>
<td>nu P1</td>
</tr>
<tr>
<td>dp1</td>
<td>Room probe display</td>
<td>–</td>
<td>– P2</td>
</tr>
<tr>
<td>dp2</td>
<td>Evaporator probe display</td>
<td>–</td>
<td>– P2</td>
</tr>
<tr>
<td>dp3</td>
<td>Fourth probe display</td>
<td>–</td>
<td>– P2</td>
</tr>
<tr>
<td>dSE</td>
<td>Voltage set point</td>
<td>acult set</td>
<td>– P1</td>
</tr>
<tr>
<td>rSE</td>
<td>Voltage set value</td>
<td>=</td>
<td>– P2</td>
</tr>
</tbody>
</table>

* Only for models XR40CX-xx2xx, XR40CX-xx3xx.