

XR160C - XR170C

with built-in RS485

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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.r.l." (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

All the models of this series are connectable to the XJ500 monitoring system through the two terminals of serial port RS485.

Models **XR160C** and **XR170C**, 32x74 mm format, are microprocessor based controllers suitable for applications on medium or low temperature refrigerating units. They are provided with three relay outputs to control compressor, defrost - which can be either electrical or hot gas - and the evaporator fans. Model **XR170C** also features an additional relay for the alarm or auxiliary output. They are also provided with two PTC or NTC probe inputs configurable by the User, one for temperature control, the other to control the defrost end temperature of the evaporator, two digital inputs (free contact) are configurable by parameter and an internal buzzer for acoustic signal. Each instrument is fully configurable through special parameters that can be easily programmed through the keypad.

3. CONTROLLING LOADS

3.1 REGULATION TEMPERATURE

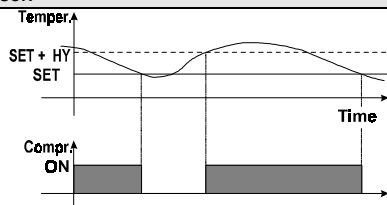
The regulation temperature can be programmed by "Pbr" parameter :

Pbr = 0: regulation on room probe

Pbr = 1: regulation on evaporator probe

Pbr = 2: regulation on probe difference value between Pb1 and Pb2. (room probe - Evaporator probe)

3.2 THE 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 "COF".

3.3 FAST FREEZING

When defrost is not in progress, it can be activated the keypad by holding the **▲** key pressed for about 3 seconds. The compressor operates in continuous mode for the time set through the "CCF" parameter. The cycle can be terminated before the end of the set time using the same activation key, **▲** for about 3 seconds.

3.4 DEFROST

Two defrost modes are available through the "tdF" parameter: defrost with electrical heater (tdF = 0) and hot gas defrost (tdF = 1). To control the defrost cycles: interval between defrosts (IdF), its maximum length (MdF) and the end defrost modes (EdF): timed or controlled by the evaporator's probe. At the end of defrost the drip time is controlled through the "Fdt" parameter.

3.5 CONTROL OF EVAPORATOR FANS

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

FnC=0 fans will switch ON and OFF with the compressor and **not run** during defrost;

FnC=1 fans will run continuously, but not during defrost

After defrost, there is a timed fan delay allowing for drip time, set by means of the "Fnd" parameter.

FnC=2 fans will switch ON and OFF with the compressor and **run** during defrost;

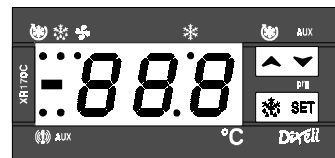
FnC=3 fans will run continuously also during defrost

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

3.6 FAN RELAY USED AS 2° COMPRESSOR

If **FnC=4** the fan relay is programmed to control a second compressor, in this case the **Fnd** parameter value is defined as time delay, in seconds, between turning on compressors 1 and 2.

4. FRONT PANEL COMMANDS



SET :To display target set point; in programming mode it selects a parameter or confirm an operation.
By holding it pressed for 5s the instrument Stand By started (If it is enable)
By holding it pressed for 3s when max or min temperature is displayed it will be erased.

▲ (UP) :To start a manual defrost

:To see the max. stored temperature; in programming mode it browses the parameter codes or increases the displayed value. By holding it pressed for 3s the fast freezing cycle is started

▼ (DOWN) :To see the min stored temperature; in programming mode it browses the parameter codes or decreases the displayed value. By holding it pressed for 3s the auxiliary relay is switched ON or OFF (If it is configured)

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	- Programming Phase (flashing with LED) - Anti-short cycle delay enabled
	ON	Fan enabled
	FLASHING	Programming Phase (flashing with LED)
	ON	Defrost enabled
	FLASHING	Drip time in progress
	ON	Fast freezing enabled
	ON	- ALARM signal - In "Pr2" indicates the parameter is also present in "Pr1"
AUX	ON	Auxiliary relay is ON

4.2 HOW TO SEE THE MIN TEMPERATURE

- Press and release the **▼** key.
- The "Lo" message will be displayed followed by the minimum temperature recorded.
- By pressing the **▼** key or waiting for 5s the normal display will be restored.

4.3 HOW TO SEE THE MAX TEMPERATURE

- Press and release the **▲** key.
- The "Hi" message will be displayed followed by the maximum temperature recorded.
- By pressing the **▲** key or waiting for 5s the normal display will be restored.

4.4 HOW TO RESET THE MAX AND MIN TEMPERATURE RECORDED

To reset the stored temperature, when max or min temperature is displayed :

- Press SET key until "rST" label starts blinking.

4.5 HOW TO SEE THE SET POINT

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

4.6 HOW TO CHANGE THE SETPOINT

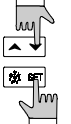
1. Push the **SET** key for 3 seconds to change the Set point value;
2. The value of the set point will be displayed and the and LEDs start blinking;
3. To change the Set value push the or arrows within 10s.
4. To memorise the new set point value push the **SET** key again or wait 10s.

4.7 HOW TO START A MANUAL DEFROST

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

4.8 TO ENTER IN PARAMETERS LIST "PR1"

To enter the parameter list "Pr1" (user accessible parameters) operate as follows:



1. Enter the Programming mode by pressing the Set and UP key for few seconds (and start blinking).
2. The instrument will show the first parameter present in "Pr1"

4.9 TO ENTER IN PARAMETERS LIST "PR2"

To enter in the parameter list "Pr2" (installer level) operate as follows:



To access parameters in "Pr2" a security code is required.

1. To enter in "Pr1" level.
 2. Select "Pr2" parameter and press the "**SET**" key.
 3. The "PAS" flashing message is displayed, shortly followed by "0 -" with a flashing zero.
 4. Use or to input the security code in the flashing digit; confirm the figure by pressing "**SET**". The security code is "321".
 5. If the security code is correct the access to "Pr2" is enabled by pressing "**SET**" on the last digit.
- NOTE:** each parameter in "Pr2" can be removed or put into "Pr1" (user level) by pressing "**SET**" + . When a parameter is present in "Pr1" LED is on.

4.10 HOW TO CHANGE THE PARAMETER VALUE

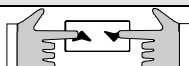
To change the parameter's value operate as follows:



1. Enter the Programming mode.
2. Select the required parameter with or .
3. Press the "**SET**" key to display its value (and LED starts blinking).
4. Use or to change its value.
5. 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 new programming is stored even when the procedure is exited by waiting the time-out.

4.11 HOW TO LOCK THE KEYBOARD

1. Keep pressed for more than 3 s the and keys.
2. The "POF" message will be displayed and the keyboard is locked. At this point it is only possible the viewing of the set point or the MAX o Min temperature stored.

4.11.1 TO UNLOCK THE KEYBOARD

Keep pressed together for more than 3s the and keys.

4.12 STAND BY FUNCTION

If the stand-by function is enabled (Onf = 1), by holding pressed the SET key for 5s., the instrument shows "OFF". The stand-by function switches OFF all the relays and stops the regulation. During the stand by if a XJ500 is connected, it does not record the instrument data and alarms.

N.B. When the instrument is under Stand-by, all the relays are under power supply. Don't connect any loads to the normal closed contact of the relays.

5. LIST OF PARAMETERS

Pbc Type of probe: (0 = PTC probe; 1= NTC probe).

Hy Differential: (0,2°C ÷ 30,0°C/ 1°F÷54°F): Intervention differential for set point, always positive. Compressor Cut IN is Set Point Plus Differential (Hy). Compressor Cut OUT is when the temperature reaches the set point.

LS Minimum set point limit: (- 50,0°C÷SET/ -58°F÷SET) Sets the minimum acceptable value for the set point.

US Maximum set point limit: (SET÷ 150°C / SET ÷302°F) Set the maximum acceptable value for set point.

AC Anti-short cycle delay: (0÷30 min) interval between the compressor stop and the following restart.

ALC Temperature alarm configuration

0 = Related to Set Point ; 1 = Alarms related to the absolute temperature.

ALP Probe for temperature alarm : permit to select which is the alarm probe.

0= room probe ; 1= evaporator probe

ALU High temperature alarm:

ALC= 0 , da 0 ÷ 50°C o 90°F

ALC= 1 , da ALL ÷ 150°C o 302°F

when this temperature is reached the alarm is enabled, after the ALd delay time.

ALL Low temperature alarm:

ALC = 0 , da 0 a 50 °C o 90°F

ALC = 1 , da - 50,0°C o -58°F a ALU

when this temperature is reached the alarm is enabled, after the ALd delay time.

ALd Temperature alarm delay: (0÷250 min) time interval between the detection of an alarm condition and alarm signalling.

dAO Delay of temperature alarm at start-up: (0÷720 min) time interval between the detection of the temperature alarm condition after instrument power on and the alarm signalling.

EdA Alarm delay at the end of defrost: (0÷250 min) Time interval between the detection of the temperature alarm condition at the end of defrost and alarm signalling.

dot Delay of temperature alarm after closing the door : (0÷250 min) Time interval between the detection of the temperature alarm condition after closing the door.

OdS Outputs activation delay at start up: (0÷250 min) 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.

Cct Thermostat override: (0 ÷990 min) allows to set the length of the continuous cycle. Can be used, for instance, when the room is filled with new products.

dAF Defrost delay after fast freezing: (0÷250 min) time interval between the end of the fast freezing and the following defrost related to it.

IdF Interval between defrosts: (1÷250h) Determines the time interval between the beginning of two defrost cycles.

dSd Delay start of defrost: (0÷59 min) This is useful when different defrost start times are necessary to avoid overloading the plant.

MdF (Maximum) duration of defrost: (0÷250 min) When **EdF** = 0, (not evaporator probe: timed defrost) it sets the defrost duration, when **EdF** = 1 (defrost end based on temperature) it sets the maximum length for defrost.

dte Defrost termination temperature: (- 50,0°C÷150°C/ -58°F÷302°F) (Enabled only when **EdF**=1) sets the temperature measured by the evaporator probe, which causes the end of defrost.

dFd Display during defrost:

0 = real temperature

1 = temperature at defrost start

2 = set point

3 = "dEF" label

4 = "dEG" label

dAd Defrost display time out: (0÷250 min) Sets the maximum time between the end of defrost and the restarting of the real room temperature display.

tdF Defrost type:

0 = electrical heater (Compressor OFF)

1 = hot gas (Compressor ON)

EdF Evaporator probe presence:

0 = not present (timed defrost end)

1 = present (defrost end based on temperature)

Fdt Drain down time: (0÷60 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:

0 = Immediately;

1 = after the IdF time

Fnc Fan operating mode:

0 = runs with the compressor, OFF during defrost;

1 = continuous mode, OFF during defrost;

2 = runs with the compressor, ON during defrost;

3 = continuous mode, ON during defrost;

4 = fan relay is used as 2° compressor output

FSt Fan stop temperature: (- 50,0°C÷150°C/ -58°F÷302°F) setting of temperature, detected by evaporator probe, above which the fan is always OFF.

Fnd Fan delay after defrost: (0÷250 min) The time interval between the defrost end and evaporator fans start.

Ot Thermostat probe calibration: (-12,0÷12,0°C/ -20÷20°F) allows to adjust possible offset of the thermostat probe.

OE Evaporator probe calibration: (-12,0÷12,0°C/ -20÷20°F) allows to adjust possible offsets of the evaporator probe.

rES Resolution (for °C): allows decimal point display.

0 = 0,1°C

1 = 1 °C

CF Temperature measurement unit:

0 = Celsius

1 = Fahrenheit.

WARNING: When the measurement unit is changed the SET point and the values of the parameters Hy, LS, US, ALU, ALL, dte, FSt, Ot and OE have to be modified

Pbr Regulation Probe : Allows to choose the regulation probe:

0 = Thermostat probe

1 = Evaporator probe

2 = Pb1-Pb2

Lod Local display : select which probe is displayed by the instrument:

0 = Thermostat probe

1 = Evaporator probe

Con Compressor ON time with faulty probe: (0÷250 min) time during which the compressor is active in case of faulty thermostat probe. With **COn**=0 compressor is always OFF.

COF Compressor OFF time with faulty probe: (0÷250 min) time during which the compressor is off in case of faulty thermostat probe. With **COF**=0 compressor is always active.

dIC Digital input operating mode: configure the digital input function:

0 = Start defrost

1 = Enabling energy saving mode

2 = Pressure switch

3 = Door open switch

4 = Relay AUX actuation

5 = generic alarm

6 = serious alarm mode

dIP Digital input polarity : determine if the digital inputs are activated for open or closed contact.

Valore	Door switch door	Configurable input
0	Active if closed	Active if closed
1	Active if closed	Active if open
2	Active if open	Active if closed
3	Active if open	Active if open

odc Compressor and fan status when open door:

- 0 = normal
- 1 = Fan OFF
- 2 = Compressor OFF
- 3 = Compressor and fan OFF

oAc Auxiliary relay operating mode:

- 0 = Relay configured as alarm
- 1 = Relay configured as auxiliary

oAA Aux. relay & digital input operating mode : determines to which digital input is related the auxiliary relay (oAc =1).

- 0 = Auxiliary relay works with the door switch input.
- 1 = Auxiliary relay works with the configurable digital input.

doA Open door alarm delay:(0÷250 min) delay between the detection of the open door condition and its alarm signalling: the flashing message "dA" is displayed.**LdE Delay of switch off relay after closing the door:**(0÷250 sec.) Determines the time to the light is ON after closing the door.**HES Temperature increase during the Energy Saving cycle :** (0,2° C + 30,0° C / 1÷54°F) Sets the increase of the set point during the Energy Saving cycle. If, for instance, SET = -20° C and HES = 2, the operation set point during the Energy Saving cycle will be SET = -18° C.**nPS Pressurestat switching number:** (0 ÷15) Number of activation of the pressure switch, during the "did" interval, before signalling the alarm event (dIC=2).**did Time interval/delay for digital input alarm:**(0÷250 min.) Time interval to calculate the number of activation of the pressure switch (dIC=2). If configured as external alarm (dIC=5), the did parameter defines the time delay between the detection and the signalling.**tbA Buzzer and alarm relay silencing:**

- 0= Buzzer and relay are independent
- 1= Buzzer and relay are silencing together by key

OnF Stand-by function:

- 0 = Stand-by function not enabled.
- 1 = Stand-by function enabled (under SET key control).

Ad1 RS485 serial address (0÷16): Identifies the instrument when it is connected to a monitoring system.**Ad2 RS485 serial address (0÷16):** Identifies the instrument when it is connected to a monitoring system.**Ptb Parameter table:** (read only) shows the factory default settings.**Rel Release software:** (read only)**Prd Second probe display:** (read only) display the temperature value normally not showed.**Pr2 Access to parameter list protected** (read only)**6. DIGITAL INPUTS**

These instruments can support up to 2 free contact digital inputs. One is always configured as door switch, the second is programmable in seven different configuration by the "dic" parameter.

If the configurable digital input is set as door switch, the first input will be excluded.

6.1 DOOR SWITCH INPUT

It signals the door status to the instrument and with the "odc" parameter the relay outputs can be:

- 0 = Fan and compressor not affected
- 1 = Fan OFF
- 2 = Compressor OFF
- 3 = Compressor and fan OFF

After a delay time (set through parameter "dOA") since the door is opened the alarm output is enabled and the display shows the message "dA". The alarm stops as soon as the external digital input is disabled. The high and low temperature alarms are disabled when the door is open and during the delay "dot" after closing it.

If the auxiliary relay is enabled as light door, it is switched ON when the door is open and then, after closing it, for the time set in "LdE" (safety time). The auxiliary relay can also be activated by ▼ key holding pressed it for three seconds (Only XR170).

6.2 CONFIGURABLE INPUT - START DEFROST (DIC= 0)

It executes 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 "MdI" safety time is expired. If the auxiliary relay is enabled, it can be activated by holding pressed the ▼ key for 3 s (Only XR170).

6.3 CONFIGURABLE INPUT - PRESSURE SWITCH (DIC=2)

If during the interval time set by "did" parameter, the pressure switch has reached the number of activation of the "nPS" parameter, the "dAL", alarm of digital input, will be activated. the compressor is switched OFF and the regulation will be stopped. The alarm can be reset by switching OFF the whole device.

The AUX relay is not affected and can be managed by the ▼ key holding pressed it for 3s (Only XR170).

6.4 CONFIGURABLE INPUT - ENERGY SAVING (DIC=3)

The Energy Saving function allows an operative set point which is higher than the usual set point. During Energy Saving the set point is as SET+HES. This function is enabled until the digital input is activated. The AUX relay is not affected and can be managed by the ▼ key holding pressed it for 3s (Only XR170).

6.5 CONFIGURABLE INPUT - RELAY AUX ACTUATION (DIC=4) (OAA=1) (OAC=1)

This function allows to activate / deactivate the digital input to switch on or off the auxiliary relay status.

6.6 CONFIGURABLE INPUT - GENERIC ALARM (DIC=5)

When the digital input is activated, the unit waits for "did" delay before signalling the "dAL" alarm message. The outputs status don't change, then the alarm will stop as soon as the digital input won't never be activated. The AUX relay is not affected and can be managed by the ▼ key holding pressed it for 3s (Only XR170).

6.7 CONFIGURABLE INPUT - SERIOUS ALARM MODE (DIC=6)

When the digital input is activated, the unit waits for "did" delay before signalling the "dAL" alarm message. The relay outputs are switched OFF, then alarm will stop as soon as the digital input won't never be activated. The AUX relay is not affected and can be managed by the ▼ key holding pressed it for 3s (Only XR170).

6.8 DIGITAL INPUTS POLARITY

The digital inputs polarity depends to "diP" parameter:

Valore	Door switch door	Configurable input
0	Active if closed	Active if closed
1	Active if closed	Active if open
2	Active if open	Active if closed
3	Active if open	Active if open

7. INSTALLATION AND MOUNTING

Instruments XR160C, XR170C shall be mounted on 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.

8. ELECTRICAL CONNECTIONS

The instruments are 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.

8.1 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.

9. ALARM SIGNALS

Message	Cause	Outputs
"P1"	Thermostat probe failure	Compressor output according to parameters "CO" and "COF"
"P2"	Evaporator probe failure	Outputs unchanged
"HA"	Maximum temperature alarm	Outputs unchanged
"LA"	Minimum temperature alarm	Outputs unchanged
"EE"	Data or memory failure	Outputs unchanged
"dA"	Defrost timeout alarm	Outputs unchanged
"dAL"	Digital input alarm	Outputs unchanged

The alarm message is displayed until the alarm condition is recovery.

All the alarm messages are showed alternating with room temperature except "P1" which is flashing.

"EE" can be erased to press any key then message "rES" is displayed for about 3s before normal operation is restored.

9.1 SILENCING BUZZER / ALARM RELAY OUTPUT

Once the alarm signal is detected the buzzer can be muted by pressing any key.

If the "tbA" parameter is "0" the alarm relay is disabled together the buzzer otherwise it remains active as long as the alarm condition lasts

N.B. The alarm relay (set by oAc = 0) is present only on XR170C model.

9.2 ALARM RECOVERY

Probe alarms : "P1" (probe1 faulty) and "P2" (probe2 faulty); they automatically stop 30s after the probe restarts normal operation. Check connections before replacing the probe.

Temperature alarms "HA" and "LA" automatically stop as soon as the thermostat temperature returns to normal values and when defrost starts.

Alarm "FF" automatically stops after 30 minutes.

External alarms "dAL" and "dA" stop as soon as the external digital input is disabled.

10. TECHNICAL DATA

Housing: self extinguishing ABS.

Case

XR160C, XR170C: frontal 32x74 mm; depth 70mm

Mounting

XR160C, XR170C: panel mounting in a 71x29 mm panel cut-out.

Frontal protection

XR160C, XR170C: IP65

Connections: Screw terminal block ≤ 2,5 mm² wiring.

Power supply

XR160C, XR170C: 12Vac/dc (opt.24Vac/dc), -10% +15%.

Power absorption: 3VA max.

Display: 3 digits, red LED, 14,2 mm high.

Inputs: 2 PTC or NTC configurable.

Relay outputs**compressor**

XR160C, XR170C: SPDT relay 8(3)A, 250Vac

defrost

XR160C, XR170C: SPDT relay 8(3) A, 250Vac

fans

XR160C, XR170C: SPST 8(3)A, 250Vac

alarm or auxiliary

XR170C: SPDT relay 8(3) A, 250Vac

Other output

XR160C, XR170C: buzzer for an acoustic signal of alarms

Serial Port :

XR160C, XR170C: RS485

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

Operating temperature: 0÷60 °C.

Relative humidity: 20÷85% (no condensing)

Storage temperature: -30÷85 °C.

Measuring and regulation range:

PTC: -50÷150°C (-58÷302°F)

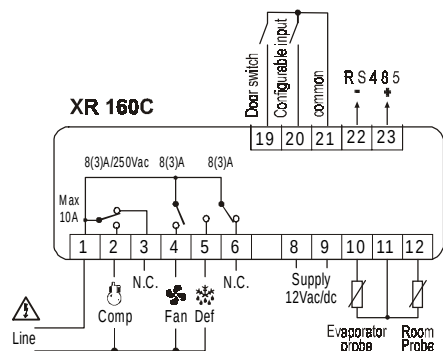
NTC: -50÷110°C (-58÷230°F)

Resolution: 0,1 °C or 1 °F (selectable).

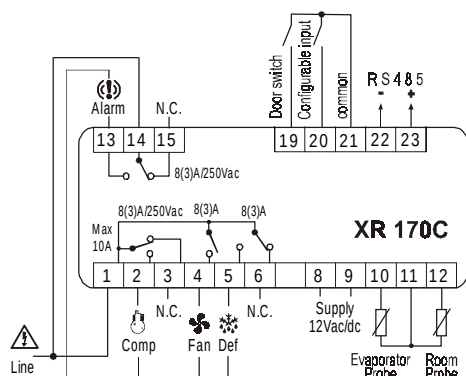
Accuracy of the controller at 25°C: range -40÷50°C (-40÷122°F): ±0,3 °C ±1 digit

11. CONNECTIONS

11.1 XR160C



11.2 XR170C



12. DEFAULT SETTING VALUES

Label	Name	Range	Livello	°C/°F
SP	Set Point	LS ÷ US	---	-5/0
Pbc	Type of probe	0 = PTC 1 = NTC	Pr2	0 or 1
hy	Differential	0,2°C ÷ 30,0°C 1°F ÷ 54°F	Pr1	2/4
LS	Minimum set point limit	50,0°C ÷ SP -58°F ÷ SP	Pr2	-30/-22
US	Maximum set point limit	SP ÷ 150°C SP ÷ 302°F	Pr2	20/68
Ac	Anti-short cycle delay	0 ÷ 30	Pr1	1
ALc	Temperature alarm configuration	0 = Related to Set Point 1 = Absolute temperature	Pr2	0
ALP	Probe for temperature alarm	0 = Room probe 1 = Evaporator probe	Pr2	0
ALU	High temperature alarm	0 ÷ 50°C ÷ 90°F ALL ÷ 150°C ÷ 302°F	Pr1	10/20
ALL	Low temperature alarm	0 ÷ 50°C ÷ 90°F -50,0°C ÷ -58°F ÷ ALU	Pr1	10/20
Ald	Temperature alarm delay	0' ÷ 250'	Pr2	15
dAo	Delay of temperature alarm at start-up	0' ÷ 720'	Pr2	90
EdA	Delay of temperature alarm at the end of defrost	0' ÷ 250'	Pr2	30
dot	Delay of temperature alarm after closing the door	0' ÷ 250'	Pr2	15
odS	Outputs activation delay at start up	0' ÷ 250'	Pr2	1
cct	Thermostat override	0 ÷ 990	Pr2	0
dAF	Defrost delay after fast freezing	0' ÷ 250'	Pr2	120
idF	Interval between defrosts	1h ÷ 250h	Pr1	6
dSd	Delay start of defrost	0' ÷ 59'	Pr2	0
MdF	(Maximum) duration of defrost	0' ÷ 250'	Pr1	30
dtE	Defrost termination temperature	50,0°C ÷ 150°C -58°F ÷ 302°F	Pr1	8/46
dFd	Display during defrost	0 = real temperature 1 = temperature at defrost start 2 = set point 3 = "dEF" label 4 = "dEG" label	Pr2	1
dAd	Defrost display time out	0' ÷ 250'	Pr2	30

Label	Name	Range	Livello	°C/°F
tdF	Defrost type	0 = electrical heater 1 = hot gas	Pr1	0
EdF	Evaporator probe presence	0 = not present 1 = present	Pr2	1
Fdt	Drain down time	0' ÷ 60'	Pr2	0
dPo	First defrost after start-up	0 = Immediately 1 = after the IdF interval time	Pr2	1
Fnc	Fan operating mode	0 = cycles on / off with the compressor, OFF during defrost 1 = continuous mode, OFF during defrost 2 = cycles on / off with the compressor, ON during defrost 3 = continuous mode, ON during defrost 4 = fan relay is used as 2 nd compressor output	Pr2	1
FSt	Fan stop temperature	50,0°C ÷ 150°C -58°F ÷ 302°F	Pr2	2/35
Fnd	Fan delay after defrost	0' ÷ 250'	Pr2	10
ot	Thermostat probe calibration	-12,0°C ÷ 12,0 °C -20°F ÷ 20°F	Pr1	0
oE	Evaporator probe calibration	-12,0°C ÷ 12,0 °C -20°F ÷ 20°F	Pr2	0
rES	Resolution	0 = With decimal point 1 = Without decimal point	Pr1	0
cF	Temperature measurement unit	0 = ° Celsius 1 = ° Fahrenheit	Pr2	0/1
Pbr	Regulation Probe	0 = Room probe 1 = Evaporator probe 2 = PB1-PB2	Pr2	0
Lod	Local display	0 = Room probe 1 = Evaporator probe	Pr2	0
Con	Compressor ON time with faulty probe	0' ÷ 250'	Pr2	15
CoF	Compressor OFF time with faulty probe	0' ÷ 250'	Pr2	30
dic	Digital input operating mode	0 = Start defrost 1 = Energy saving mode 2 = Pressure switch 3 = Door open switch 4 = Relay AUX actuation 5 = generic alarm 6 = serious alarm mode	Pr2	5
diP	Digital input polarity	0 = Both active if closes 1 = Door switch actives if close, configurable input actives if open 2 = Door switch actives if open, configurable input actives if closes 3 = Both active if opens	Pr2	0
odc	Compressor and fan status when open door	0 = normal 1 = Fan OFF 2 = Compressor OFF 3 = Compressor and fan OFF	Pr2	1
oAc	Auxiliary relay operating mode	0 = Configured as alarm 1 = Configured as auxiliary	Pr2	0
oAA	Aux. relay & digital input operating mode	0 = Relay auxiliary with door switch 1 = Relay auxiliary with configurable input	Pr2	0
doA	Open door alarm delay	0' ÷ 250'	Pr2	15
LdE	Delay of switch off relay after closing the door	0' ÷ 250'	Pr2	20
HES	Temperature increase during the Energy Saving cycle	0,2°C ÷ 30,0°C 1°F ÷ 54°F	Pr2	0,2
nPS	Pressure switch activation number	0 ÷ 15	Pr2	0
did	Time interval for digital input alarm	0' ÷ 250'	Pr2	5
tbA	Buzzer and alarm relay silencing	0 = parallel 1 = independent	Pr2	1
onF	Enabling OFF device	0 = Not enable 1 = Enable	Pr2	0
Ad1	Serial adress1 for RS485	0 ÷ 16	Pr1	0
Ad2	Serial address2 for RS485	0 ÷ 16	Pr1	1
Ptb	Parameters table	---	Pr2	---
rEL	Release SW	---	Pr2	---
Prd	Probe display	---	Pr2	---
Pr2	Parameters at installer level	---	Pr1	---

Present only in XR170C

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