

Digital controller with cooling or heating action

XR10CX

CONTENTS

1. GENERAL WARNING	1
2. GENERAL DESCRIPTION	1
3. CONTROLLING LOADS	1
4. FRONT PANEL COMMANDS	1
5. MAX & MIN TEMPERATURE MEMORIZATION	1
6. MAIN FUNCTIONS	2
7. PARAMETERS	2
8. DIGITAL INPUT (ENABLED WITH P3P = N)	3
9. TTL SERIAL LINE – FOR MONITORING SYSTEMS	3
10. X-REP OUTPUT – OPTIONAL	3
11. INSTALLATION AND MOUNTING	3
12. ELECTRICAL CONNECTIONS	3
13. HOW TO USE THE HOT KEY	3
14. ALARM SIGNALS	3
15. TECHNICAL DATA	3
16. CONNECTIONS	4
17. DEFAULT SETTING VALUES	4

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 **XR10C**, format 32 x 74 mm format is a single stage temperature controller suitable for applications in the field of refrigeration or heating. It provides a relay output to drive the compressor. It is also provided with 2 NTC or PTC probe inputs, the first one for temperature control, the second 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 third 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 **dixell** 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 THE REGULATION OUTPUT

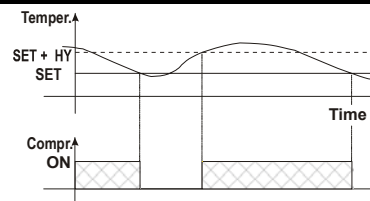
The regulation is performed according to the temperature measured by the probe.

The instruments are provided with the **CH** programmable parameter which enables the user to set the regulation both for heating or cooling applications:

- CH = CL: cooling applications
- CH = HT: heating applications

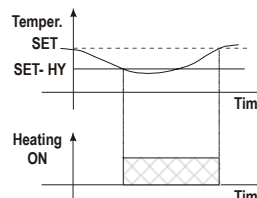
3.2 CH = CL: COOLING APPLICATIONS.

The Hy value is automatically set above 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.



3.3 CH = HT: HEATING APPLICATION.


The Hy value is automatically set under the Set Point. If the temperature decreases and reaches set point minus differential the regulation output is activated and then turned off when the temperature reaches the set point value again.





4. FRONT PANEL COMMANDS





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

 **(DEF)** Not enabled

 **(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	An alarm is occurring
	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  key.
2. The "Lo" 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 "Hi" 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 "St" 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 **▲** or **▼** arrows within 10s.
4. To memorise the new set point value push the **SET** key again or wait 10s.

6.3 HOW TO CHANGE A PARAMETER VALUE

To change the parameter's value operate as follows:

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.

6.4 THE HIDDEN MENU

The hidden menu Includes all the parameters of the instrument.

6.4.1 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. Released the keys, then push again the **Set** + **▼** 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 **▲** or **▼** to change its value.
6. Press **"SET"** to store the new value and move to the following parameter.

To exit: Press **SET** + **▲** 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.

6.4.2 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** + **▼**".

In HIDDEN MENU when a parameter is present in First Level the decimal point is on.

6.5 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.


6.6 TO UNLOCK THE KEYBOARD

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

6.7 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.

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.

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

CH Type of action: CL = cooling; Ht = heating.

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.

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

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 recovery: (0,1÷25,5°C; 1÷45°F) Intervention differential for recovery of temperature alarm.

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 (detected by the fourth probe)

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 = not enabled; AUS = not enabled; Htr = kind of action inversion (cooling - heating); FAn = do 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 status when open door: no; Fan = normal; CPr; F.C = Compressor 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

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**, **Fan** = normal (any change); **CPr**, **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 is **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 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.

8.6 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.

8.7 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.

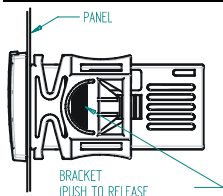
10. X-REP OUTPUT – OPTIONAL

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 **XR10CX** 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 **▲** 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 **▲** 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"
"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
"LA2"	Condenser low temperature	It depends on the "bLL" parameter
"dA"	Door open	Compressor according to rrd
"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**, **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** 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: XR10CX frontal 32x74 mm; depth 60mm;

Mounting: XR10CX panel mounting in a 71x29mm panel cut-out

Protection: IP20; **Frontal protection:** XR10CX 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 3 NTC or PTC probes.

Digital input: free voltage contact

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

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);

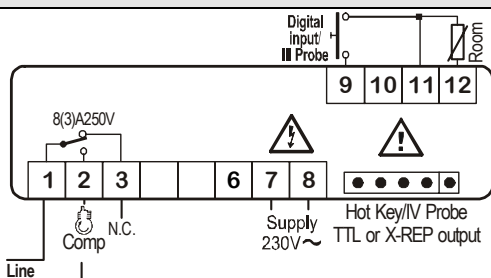
PTC probe: -50÷150 °C (-58÷302 °F)

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

16. CONNECTIONS

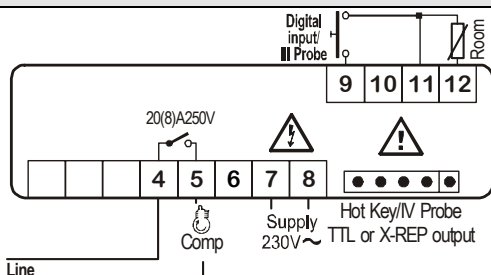
The X-REP output excludes the TTL output.. It's present in the following codes:
XR10CX- xx2xx, XR10CX -xx3xx;

16.1 XR10CX – 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 XR10CX – 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

Label	Name	Range	°C/°F	
Set	Set point	LS÷US	5.0/41	---
Hy	Differential	0.1÷25.5°C/ 1÷ 255°F	2.0/4	Pr1
LS	Minimum set point	-50°C÷SET/-58°F÷SET	-50.0/58	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
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
CO	Compressor ON time with faulty probe	0 ÷ 255 min	15	Pr2
CO	Compressor OFF time with faulty probe	0 ÷ 255 min	30	Pr2
CH	Kind of action	CL=cooling; Ht= heating	cL	Pr1
CF	Temperature measurement unit	°C ÷ °F	°C /°F	Pr2
rES	Resolution	in=integer; dE= dec.point	dE /in	Pr1
dLy	Display temperature delay	0 ÷ 20.0 min (10 sec.)	0	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'	1.0	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. alarm 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'	1,0	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	EAL	Pr1
did	Digital input alarm delay	0÷255min	5	Pr1
nPS	Number of activation of pressure switch	0 ÷ 15	15	Pr2
odc	Compress status when open door alarm	no; Fan; CPR; F_C	no	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
Adr	Serial address	0÷247	1	Pr2
PbC	Kind of probe	Ptc; ntc	ntc	Pr1
onF	on/off key enabling	nu, oFF; ES	nu	Pr2
dP1	Room probe display	--	--	Pr1
dP3	Third probe display	--	--	Pr1
dP4	Fourth probe display	--	--	Pr2
rSE	Real set point value	actual set	--	Pr2
rEL	Software release	--	--	Pr2
Ptb	Map code	--	--	Pr2