

Digital controller for CDU management XC30CX

1. GENERAL WARNING

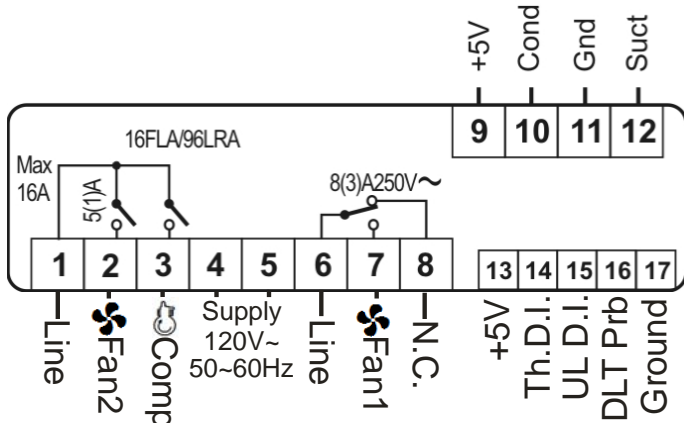
1.1 PLEASE READ BEFORE USING THIS MANUAL

- 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. WIRING CONNECTION



Suction probe: a ratiometric probe is required. Use the term. 9 (+5V) for supply, term. 11 for gnd and term. 12 for Signal

Condenser probe: the controller is able to manage NTC 10K probe and ratiometric probe.

- **NTC:** set par. P2C = ntc; connect the probe to term. 11 and 10
- **Ratiometric:** set par. P2C = 0-5; use the term. 9 (+5V) for supply, term. 11 for gnd and term. 10 for Signal

Thermostat input: use terminals 14-17

UL HP input: use terminals 15-17

DLT 86K sensor: set P3C = dLt, then connect the probe to terminals 16-17

CPA connection: set P3C = CAP then connect the CPA as for wiring diagram.

Power supply: use terminals 4-5

Compressor: use terminals 1-3

FAN 1: use terminals 6-7

FAN 2: use terminals 1-2

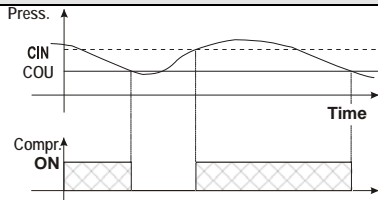
3. CONTROLLING LOADS

3.1 COMPRESSOR

The regulation is performed according to the pressure measured by the suction probe P1.

The compressor cut in is give by the **CIn** parameter.

The compressor cut out is give by the **Cou** parameter.



In case of fault in the regulation probe the start and stop of the compressor are timed through parameters "CON" and "COF".

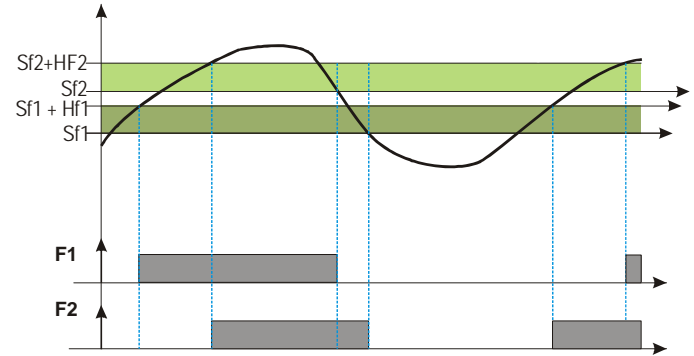
3.2 FAN MANAGEMENT (ONLY FOR XC30CX)

The XC30CX is able to control 1 or 2 condenser fans.

A direct regulation is performed (cooling). It depends on the parameter:

- SF1** Set point for fan1 (with NTC probe: $-40^{\circ}\text{C} \div \text{SF2}$ or $40^{\circ}\text{F} \div \text{SF2}$; with pressure probe: $\text{P2i} \div \text{SF2}$)
- HF1** Differential for fan 1 ($0.1 \div 10.0^{\circ}\text{C}/\text{bar}$; $1 \div 100^{\circ}\text{F}/\text{PSI}$)
- SF2** Set point for fan2 (with NTC probe: $\text{SF1} \div 110^{\circ}\text{C}$ or $\text{SF1} \div 230^{\circ}\text{F}$; with pressure probe: $\text{SF1} \div \text{P2E}$)
- HF2** Differential for fan 2 ($0.1 \div 10.0^{\circ}\text{C}/\text{bar}$; $1 \div 100^{\circ}\text{F}/\text{PSI}$)

A fan is switched on when the temperature (pressure) is higher than $\text{SF1} + \text{HF1}$ and switched off when it comes back to SF1, as explained in the following picture



3.3 FAN CYCLING

To share the running hours between the 2 fans, the XC30CX will record the operating hours of each fan. The controller will rotate the fan activation and de-activation to share the operating hours between the 2 fans.

Note: with only one fan, it will be activated with $T > \text{SF1} + \text{HF1}$; and switched off with $T < \text{SF1}$

4. FRONT PANEL COMMANDS



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

RESTART: It depends on the RSc parameter, with $\text{rSc} = \text{rSt}$ it allows a manual restart and a "dead band reset" with $\text{rSc} = \text{nP}$. only the dead band reset is allowed.

(UP): To see the condenser temperature for 5s in programming mode it browses the parameter codes or increases the displayed value.

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

SERVICE: To enter the service menu

Alarm menu: To enter the Alarm menu.

KEY COMBINATIONS:

UP + DOWN To lock & unlock the keyboard.

SET + DOWN To enter in programming mode.

SET + UP To return to the suction pressure display.

4.1 USE OF LEDS

Each LED function is described in the following table.

LED	MODE	FUNCTION
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LED	MODE	FUNCTION
	ON	Compressor enabled
	Flashing	Anti-short cycle delay enabled
	ON	Fan1 enabled
	ON	Fans enabled
kPA	ON	KPA display
kPA	Flashing	Programming mode
bar	ON	bar display
bar	Flashing	Programming mode
PSI	ON	PSI display
PSI	Flashing	Programming mode
	ON	You're browsing the service menu
	Flashing	A new alarm happened
	ON	You're browsing the alarm menu
	ON	An alarm is occurring

5. OTHER FUNCTIONS

5.1 RESET DEAD BAND

In the pressure is between COU and CIN and the compressor relay is off, it's possible to force it by pushing the **RESTART** key for 2s. The compressor will run till the **cou** threshold is reached.

5.2 EXTERNAL THERMOSTAT (14-17)

Function: the thermostat input, if present enables the regulation only when it is activated

Contacts: 14-17 free voltage

Parameters:

- di1 Thermostat digital input presence 14-17**
n = the regulation is performed independently from the status of digital input 14-17
Y = the regulation is performed only when the digital input 14-17 is enabled.
- i1P Thermostat digital input polarity 14-17**
OP = the digital input is activated by opening the contacts 14-17
CL = the digital input is activated by closing the contacts 14-17

5.3 UL SAFETY PRESSURE SWITCH (15-17)

Function: the UL safety input if present, switches off the compressor when it is activated.

Contacts: 15-17 free voltage

Parameters:

- di2 UL safety digital input presence 15-17**
n = the regulation is performed independently from the status of digital input 15-17
Y = the regulation is performed only when the digital input 15-17 is disabled.
- i1P UL safety digital input polarity 15-17**
OP = the digital input is activated by opening the contacts 15-17
CL = the digital input is activated by closing the contacts 15-17
- HPn UL safety digital input activation before compressor lock**
0 = always automatic restart
1÷15 = when the digital input is activated HPn times in a hour the regulation is locked and a manual restart is required.
- HPF Minimum time of compressor off when the UL d.i. is activated (0÷15min)**

5.3.1 Functioning

With UL safety digital input activated the following actions are performed

- a. The compressor is shut down.
- b. The display shows "HP" message alternated with suction probe
- c. The counter of HP alarm is incremented.

Automatic restart

When the UL d.i. is switched off the compressor can restart only when the HPF and AC timers are over.

If the UL d.i. is activated HPn time in a hour, a manual restart is required:

In this situation:

- a. The compressor is shut down.
- b. The display shows "HPL" message alternated with suction probe
- c. The counter of HP alarm is incremented.

Manual restart

- a. Switch controller off and on - or -
- b. With rSc = rSt push the RESTART key for more the 5s - or -
- c. Enter programming and set rSt = y.

5.4 BUMP START FUNCTION

**** The bump start function is enabled only with P3c <> CPA ***

Purpose: the bump start function is used to get refrigerant out of the compressor without losing all of the oil in the event of a flooded start where pump-down and crank-case heaters are not applicable or adequate. The

Parameters:

- bMP Bump start enabling**
n = bump start disabled
y = bump start enabled
- on Compressor on time (1÷15s;)**
- oFF Compressor off time (1÷15s)**
- nub Number of cycle during bump start (1÷15)**
- bEn Compressor stop time for next bump start (1.0÷23.5h; ris. 10 min)**

5.4.1 Functioning

At power on or after a power down or when the compressor remains off for all the bEn time, it is activated for "on" seconds and switched off for "oFF" seconds for "nub" times.

5.5 COMPRESSOR SHUT DOWN WITH HIGH DLT TEMPERATURE ALARM

Purpose: With P3c = dLt, to the 16-17 terminals it's possible to connect a NTC 86K DLT probe, to monitor the discharge line temperature. When the temperature reaches a set threshold the compressor is shut down.

Parameters

- doF DLT alarm temperature to stop compressor (don÷200°C; don÷392°F)**
- don DLT temperature for compressor restart (-30,0°C÷doF; -22÷doF°F)**
- ALd Stop compressor delay (0÷255s)**
- nPS Number of activation of DLT alarm in a hour to lock compressor**
0 = always automatic restart
1÷15 = when the DLT alarm happens nPS times in a hour the regulation is locked and a manual restart is required.
- dLF Minimum time of compressor off with dLt temperature alarm (0÷15min)**

5.5.1 Functioning

When the temperature detected by the DLT probe is higher than doF threshold the following actions are performed

- a. The compressor is shut down.
- b. The display shows "dLt" message alternated with suction probe
- c. The counter of dLt alarm is incremented.

Automatic restart

When the temperature detected by the DLT probe is lower than don the compressor can restart only when the dLF and AC timers are over.

If the temperature detected by the DLT probe reaches the doF threshold nPS time in a hour, a manual restart is required:

In this situation:

- a. The compressor is shut down.
- b. The display shows "dLL" message alternated with suction probe
- c. The counter of dLL alarm is incremented.


Manual restart

- a. Switch controller off and on - or -
- b. With rSc = rSt push the RESTART key for more the 5s - or -
- c. Enter programming and set rSt = y.

NOTE: In any case the compressor can restart only if the dLt temperature is less than don

6. MAIN INTERFACE

6.1 HOW TO SEE THE SETPOINT

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1. Push and immediately release the **SET** key: the display will show the Cin message.
 2. Push the **SET** key to see the value;
 3. Push and immediately release the **SET** key: the display will show the Cou message.
 4. Push the **SET** key to see the value.

6.2 HOW TO CHANGE A PARAMETER VALUE

To change the parameter's value operate as follows:

1. Enter the Programming mode by pressing the **Set + v** keys for 3s (the "PSI" or "bar" 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.

6.3 THE HIDDEN MENU

The hidden menu Includes all the parameters of the instrument.

6.3.1 HOW TO ENTER THE HIDDEN MENU

1. Enter the Programming mode by pressing the **Set + ▾** keys for 3s (the “PSI” or “bar” 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.

6.3.2 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.

6.4 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.

6.5 TO UNLOCK THE KEYBOARD

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

7. ALARM MENU

The controller records in the Alarm menu the total number of activation of the following alarms.

- UL safety pressure switch activation (up to 999) - **HP** menu
- High **dLt** temperature alarm (up to 999) - **dLt** menu
- Total number of manual restarts (HPL and dLL) up to 255 - **LOC** menu.

7.1 HOW TO SEE THE ALARM COUNTERS

1. Push and release the “ALR” key
2. The controller shows the HP label.
3. Push the SET key to see the number of activations.
4. The controller shows the dLt label.
5. Push the SET key to see the number of activations.
6. The controller shows the Loc label.
7. Push the SET key to see the number of activations.

8. SERVICE MENU

In the **SERVICE** menu are memorized the following functions:

- **Number of compressor activation:** **StH** (0÷999 res. 1000); **StL** (0÷999; res. 1)
ES StH = 22 StL = 568: total number of compressor activations = 22’568
- **Hours of compressor working:** **CHH** (0÷65; res. 1000) **CHL** (0÷ 999; res. 1);
NOTE: If the 65535 value is reached the memorization is locked and the H_C alarm is generated.
To reset the alarm: enter programming mode and set. rCh = y.
- **Hours of fan1 working:** **F1H** (0÷65; res. 1000) **F1L** (0÷ 999; res. 1);
NOTE: If the 65535 value is reached the memorization is locked and the H_F alarm is generated.
To reset the alarm: enter programming mode and set. rFh = y.
- **Hours of fan2 working:** **F2H** (0÷65; res. 1000) **F2L** (0 a 999; res. 1);
NOTE: If the 65535 value is reached the memorization is locked and the H_F alarm is generated.
To reset the alarm: enter programming mode and set. rFh = y.

8.1 HOW TO ENTER THE SERVICE MENU

Push for 3s the **SERVICE** key
Vengono visualizzati i menu: StH, StL, CHH, CHL, F1H, F1L, F2H, F2L

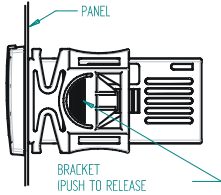
To exit: push and release the SERVICE key or the SET+UP keys

9. PARAMETERS

LABEL	DESCRIPTION	RANGE
COMPRESSOR REGULATION		
Cin	Compressor cut in	CoU – US
CoU	Compressor cut out	LS ÷ Cin
LS	Minimum set point	P1c=NTC: [-40,0°C ÷ Cou] [-40°F ÷ Cou] P1c=0-5 : P1i÷ Cou
US	Maximum set point	P1c=NTC : [CIN ÷ 110,0°C] [CIN ÷ 230°F] P1c=0-5 : CIN ÷P1E
odS	Outputs delay at start up	0 ÷ 255s
AC	Anti-short cycle delay	6 ÷ 900s
ono	Minimum time between two compressor starts	0÷15min
Con	Compressor ON time with faulty probe	0 ÷ 255min
CoF	Compressor OFF time with faulty probe	0 ÷ 255min
FAN REGULATION		
SF1	Set point for fan1	P2c=NTC : [-40,0°C ÷ SF2] [-40°F ÷ SF2] P2c=0-5 : P2i÷ SF2
HF1	Fan 1 differential	0.1÷10.0; 1÷100
SF2	Set point for fan2	P2c=NTC : [SF1 ÷ 110,0°C] [SF1 ÷ 230°F] P2c=0-5 : SF1÷ P2E
HF2	Fan 2 differential	0.1÷10.0; 1÷100
nFA	Number of fans on with P2 fault	0 ÷ 2
PROBE SETTING		
P1i	Start scale for probe 1	-1.5÷P1E ; -15÷P1E
P1E	End scale for probe 1	P1i÷99.9 ; P1i ÷999
P1F	Probe 1 offset	-12,0÷12,0; -120 ÷120
P2C	Probe 2 configuration	0-5 = ratiometric ; NTC
P2i	Start scale for probe 2	-1.5÷P2E ; -15÷P2E
P2E	End scale for probe 2	P2i÷99.9 ; P2i ÷999
P2F	Probe 2 offset	-12,0÷12,0; -120 ÷120
P3C	Probe 3 configuration (16-17)	nu, dLt = probe dLt (86K), CPA = interfaccia CPA
P3F	Probe 3 offset	-12,0÷12,0; -120 ÷120
MEASUREMENT UNIT		
Unt	Measurement unit for pressure: PSI, bar, kPa	PSI, bar, kPa
CF	Measurement unit for temperature	°C; °F
rES	Resolution for °C : decimal point, integer	dE(0) - in(1)
dLy	Pressure display delay	0÷255s
BUMP START FUNCTION		
bMP	Bump start enabling	no - YES
on	Compressor on time	1÷15s;
oFF	Compressor off time	1÷15s
nub	Number of cycle during bump start	1÷15
bEn	Compressor stop time for next bump start	1.0÷23.5h; ris. 10 min
DLT INPUT MANAGEMENT		
doF	DLT alarm temperature to stop compressor	don÷200°C; don÷392°F
don	DLT temperature for compressor restart	-30,0°C÷doF; -22÷doF°F
ALd	Stop compressor delay	0÷255s
nPS	Number of activation of DLT alarm in a hour to lock compressor	0÷15; 0 = always automatic restart
dLF	Minimum time of compressor off with dLL alarm	0÷15min
HIGH CONDENSER TEMPERATURE		
AU2	Condenser Temperature/Pressure threshold for high alarm	P2c=NTC : [SEF÷110,0°C] [SEF÷230°F] P2c=0-5 : SEF÷P2E
AH2	Differential for high Condenser Temperature/Pressure alarm recovery	P2c=NTC : [-40,0°C ÷ AU2] [-40°F ÷ AU2] P2c=0-5 : P2i÷ AU2
Ad2	High condenser temperature alarm delay	0÷255min
DIGITAL INPUT MANAGEMENT		
di1	Thermostat digital input presence 14-17	no - YES
i1P	Thermostat digital input polarity 14-17	OP – CL
di2	UL safety digital input presence 15-17	no - YES
i2P	UL safety digital input polarity 15-17	OP – CL
HPn	UL safety digital input activation before compressor lock	0÷15; 0 = always automatic restart
HPF	Minimum time of compressor off with UL d.i. alarm	0÷15min
COUNTER RESET		
rSC	Restart key function	nP - rSt
rSt	Regulation restart with dLL and HPL alarm	no - YES
rSA	Alarm counters reset (dLt, HP)	no - YES
rCA	Compressor activation counter reset	no - YES
rCH	Compressor running hours reset	no - YES
rFH	Fan running hours reset	no - YES
OTHERS		

LABEL	DESCRIPTION	RANGE
dP1	P1 probe display	(Probe value)
dP2	P2 probe display	(Probe value)
dP3	P3 probe display	(Probe value)
rEL	Firmware Release	Readable only
Ptb	Map code	Readable only

10. INSTALLATION AND MOUNTING



Instrument **XC30CX** 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 -10÷55 °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.

11. 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.

11.1 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.

12. HOW TO USE THE HOT KEY

12.1 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 **▲ + SERVICE** 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.

12.2 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.

13. ALARM SIGNALS

LABEL	MEANING	MODE
PoF	Keyboard locked	Flashing (3s)
Pon	Keyboard unlocked	Flashing (3s)
P1	Suction probe failure	Flashing
P2	Condenser probe failure	Flashing
P3	DLT probe failure	Flashing
HA	High condenser temperature alarm	Flashing
dLt	DLT temperature alarm	Flashing
dLL	DLT lock alarm	Flashing
HP	Safety UL pressure switch alarm	Flashing
HPL	Safety UL pressure switch lock alarm	Flashing
C-H	Compressor working hour counter alarm	Flashing
F-H	Fan working hour counter alarm	Flashing
HdL	255LOC/999HP/999dLt has been reached. it's necessary to reset the counters	Flashing

EE	EE alarm	Flashing
C01	Alarm from CPA	Flashing
C02	Alarm from CPA	Flashing
C03	Alarm from CPA	Flashing
C04	Alarm from CPA	Flashing
C05	Alarm from CPA	Flashing
C06	Alarm from CPA	Flashing
C07	Alarm from CPA	Flashing
C08	Alarm from CPA	Flashing
C09	Alarm from CPA	Flashing
C10	Alarm from CPA	Flashing
C11	Alarm from CPA	Flashing

Table 7
Table of Alert Codes

Code	Three Phase Recip	Three Phase Scroll	Single Phase
1	Discharge Temperature Trip	Discharge Temperature Trip	Discharge Temperature Trip
2	System Trip	System Trip	System Trip
3	Short Cycling	Short Cycling	Short Cycling
4	Locked Rotor	Locked Rotor	Locked Rotor
5	Open Circuit	Open Circuit	Open Circuit
6	Missing Phase	Missing Phase	Open Run
7	NA	Reverse Phase	Open Start
8	Welded Contactor	Welded Contactor	Welded Contactor
9	Low Voltage	Low Voltage	Low Voltage
10	Lost communications	Lost communications	Lost communications
11	DLT Sensor Failure	DLT Sensor Failure	DLT Sensor Failure

14. TECHNICAL DATA

Housing: self extinguishing ABS.

Case: **XC30CX** frontal 32x74 mm; depth 70mm;

Mounting: **XC30CX** panel mounting in a 71x29mm panel cut-out

Protection: IP20; **Frontal protection:** **XC30CX** IP65

Connections: spade on terminal blocks 6.2mm

Power supply: according to the model: 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 probes.

Digital input: free voltage contact

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

fan2: SPST 5A, 250Vac or SPST 16(6)A 250Vac

fan1: SPDT 8(3) A, 250Vac or SPST 16(6)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: -10÷55 °C; **Storage temperature:** -30÷85 °C.

Relative humidity: 20÷85% (no condensing)

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

NTC 86K probe: -20÷200°C (-4÷392°F)

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

15. DEFAULT SETTING VALUES

LABEL	DESCRIPTION	RANGE	Value	Level
Cin	Compressor cut in	CoU - US	45	Pr1
CoU	Compressor cut out	LS ÷ Cin	35	Pr1
LS	Minimum set point	P1c=NTC: [-40,0°C ÷ Cou] [-40°F ÷ Cou] P1c=0-5 : P1i÷ Cou	10	Pr1
US	Maximum set point	P1c=NTC : [CIN ÷ 110,0°C] [CIN ÷ 230°F] P1c=0-5 : CIN ÷ P1E	60	Pr1
odS	Outputs delay at start up	0 ÷ 255s	5	Pr1
AC	Anti-short cycle delay	6 ÷ 900s	30	Pr1
ono	Minimum time between two compressor starts	0÷15min	6	Pr1
Con	Compressor ON time with faulty probe	0 ÷ 255min	15	Pr1
CoF	Compressor OFF time with faulty probe	0 ÷ 255min	15	Pr1
SF1	Set point for fan1	P2c=NTC : [-40,0°C ÷ SF2] [-40°F ÷ SF2] P2c=0-5 : P2i÷ SF2	80	Pr1
HF1	Fan 1 differential	0.1÷10.0; 1÷100	15	Pr1
SF2	Set point for fan2	P2c=NTC : [SF1 ÷ 110,0°C] [SF1 ÷ 230°F] P2c=0-5 : SF1÷ P2E	90	Pr1
HF2	Fan 2 differential	0.1÷10.0; 1÷100	15	Pr1

nFA	Number of fans on with P2 fault	0 ÷ 2	1	Pr1
P1i	Start scale for probe 1	-1.5÷P1E ; -15÷P1E	0	Pr1
P1E	End scale for probe 1	P1i÷99.9 ; P1i ÷999	160	Pr1
P1F	Probe 1 offset	-12,0÷12,0; -120 ÷120	0	Pr1
P2C	Probe 2 configuration	0-5 = ratiometric; NTC	ntC	Pr1
P2i	Start scale for probe 2	-1.5÷P2E ; -15÷P2E	0	Pr1
P2E	End scale for probe 2	P2i÷99.9 ; P2i ÷999	435	Pr1
P2F	Probe 2 offset	-12,0÷12,0; -120 ÷120	0	Pr1
P3C	Probe 3 configuration (16-17)	nu, dLt = sonda dLt (86K), CPA = interfaccia CPA	nu	Pr1
P3F	Probe 3 offset	-12,0÷12,0; -120 ÷120	0	Pr1
Unt	Measurement unit for pressure: PSI, bar, kPA	PSI, bar, kPA	PSI	Pr1
CF	Measurement unit for temperature	°C; °F	°F	Pr1
rES	Resolution for °C : decimal point, integer	dE(0) - in(1)	in	Pr1
dLy	Pressure display delay	0÷255s	0	Pr1
bMP	Bump start enabling	no - YES	NO	Pr1
on	Compressor on time	1÷15s;	2	Pr1
oFF	Compressor off time	1÷15s	5	Pr1
nub	Number of cycle during bump start	1÷15	3	Pr1
bEn	Compressor stop time for next bump start	1.0÷23.5h; ris. 10 min	4.0	Pr1
doF	DLT alarm temperature to stop compressor	don÷200°C; don÷392°F	230	Pr1
don	DLT temperature for compressor restart	-30,0°C÷doF; -22÷doF°F	180	Pr1
Ald	Stop compressor delay	0÷255s	30	Pr1
nPS	Number of activation of pressure switch in a hour to stop compressor	0÷15; 0 = always automatic restart	4	Pr1
dLF	Minimum time of compressor off with dLL alarm	0÷15min	5	Pr1
AU2	Condenser Temperature/Pressure threshold for high alarm	P2c=NTC : [SEF÷110,0°C] [SEF÷230°F] P2c=0-5 : SEF÷P2E	140	Pr1
AH2	Differential for high Condenser Temperature/Pressure alarm recovery	P2c=NTC : [-40,0°C ÷ AU2] [-40°F ÷ AU2] P2c=0-5 : P2i÷ AU2	10	Pr1
Ad2	High condenser temperature alarm delay	0÷255min	0	Pr1
di1	Thermostat digital input presence 14-17	no - YES	YES	Pr1
i1P	Thermostat digital input polarity 14-17	OP – CL	CL	Pr1
di2	UL safety digital input presence 15-17	no - YES	YES	Pr1
i2P	UL safety digital input polarity 15-17	OP – CL	CL	Pr1
HPn	UL safety digital input activation before compressor lock	0÷15; 0 = always automatic restart	5	Pr1
HPF	Minimum time of compressor off with UL d.i. alarm	0÷15min	5	Pr1
rSC	Tasto reset function	nP - rSt	rSt	Pr1
rSt	Regulation restart with dLL and HPL alarm	no - YES	no	Pr1
rSA	Alarm counters reset (dLt, HP)	no - YES	no	Pr1
rCA	Compressor activation counter reset	no - YES	no	Pr1
rCH	Compressor running hours reset	no - YES	no	Pr1
rFH	Fan running hours reset	no - YES	no	Pr1
dP1	P1 probe display	(Probe value)	-	Pr1
dP2	P2 probe display	(Probe value)	-	Pr1
dP3	P3 probe display	(Probe value)	-	Pr1
rEL	Firmware Release	Readable only	4.3	Pr1
Ptb	Map code	Readable only	1	Pr1

16. LISTINGS



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