

Installation and Operating Instructions

XR530C - XR530D
XR570C- XR570D
XR572C

1. CONTENTS

- 2 GENERAL WARNING
- 3 GENERAL DESCRIPTION
- 4 CONTROLLING LOADS
- 5 CONTROL PANEL COMMANDS
- 6 FUNCTION AND PARAMETERS PROGRAMMING MENU
- 7 LIST OF PARAMETERS
- 8 DIGITAL INPUTS
- 9 INSTALLATION AND MOUNTING
- 10 ELECTRICAL CONNECTIONS
- 11 RS485 OUTPUT
- 12 REMOTE DISPLAY XR REP
- 13 ALARM SIGNALS
- 14 SELF DIAGNOSIS
- 15 TECHNICAL DATA
- 16 CONNECTIONS

2. GENERAL WARNING

Please read before using this manual

- This manual is part of the product and should be kept near the device for easy and quick reference.
- The controller 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.

Safety cautions

- 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 condense formation.
- Warning: disconnect all electrical connections before any kind of maintenance.
- The instrument shall never 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).
- Assure that the wires for probes, loads and power supply are separated and far enough from each other, without crossings or intertwining.
- In case of applications in critical industrial environments, the use of mains filters (our mod. FT1) in parallel with inductive loads could be useful.

3. GENERAL DESCRIPTION

Each model in the XR500 series is fitted with a Real Time Clock which allows programming of up to six daily defrost cycles, divided into holidays and working days. A "Day and Night" function with two different set points is fitted for energy saving. Due to the RS485 serial output all models can be integrated with a monitoring or supervising system.

XR530C, 32x74 format, and XR530D,

DIN rail format, are microprocessor based controllers suitable for applications on higher temperature refrigerating units. They are provided with two relay outputs, one for the compressor, the other for alarm output. Alarm conditions are also signalled by a buzzer. Model XR530D is also fitted with an auxiliary relay which can be triggered through the keypad. Models XR570C, 32x74, XR570D, DIN RAIL, and XR572C (coupled with XR40SL slave module), 32x74, are microprocessor controllers suitable for applications in low or medium temperature forced air refrigerating units. They are fitted with three relay outputs to control compressor, defrost - either electric or hot gas - and fans. Model XR572C also features an additional relay which can be triggered through the keypad and four digital inputs: door switch, external alarm and external activation of holiday defrost and "Day and Night" function. Alarm conditions are signalled by the internal buzzer and by a 0-12V/40mA output in model XR572C, while models XR570C and XR570D are provided with a suitable relay output.

4 CONTROLLING LOADS

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".

FAST FREEZING CYCLE

When defrost is not in progress, fast freezing can be activated by the "UP" key by holding it 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.

DEFROST

Through the RTC parameters up to six daily defrosts (subdivided into holidays and working days) can be programmed. In models XR570C, XR570D, XR572C, two defrost modes are available through the "tdF" parameter: defrost through electrical heaters (tdF=0) and hot gas defrost (tdF=1). The defrost termination mode, parameter "EdF", can be either timed (EdF=0) or controlled by the evaporator probe (EdF=1 or EdF=2). At the end of defrost the drain time starts - it is controlled through the "FdT" parameter.

EXTERNAL CONSENT FOR DEFROST END (PAR. dIC)

With dIC=3, the digital input can control the end of defrost. This feature can be used in a plant with more than one evaporator when some of them are controlled by devices able to signal, by means of an external contact, that the defrost is in progress. When the temperature of defrost end is reached (par. EdF), the controller checks the state of the digital input; if it is ON, the drain time starts (par. Fdt) and the normal regulation is stopped. When the digital

input is switched off, the controller re-starts the normal regulation. In any case the normal regulation re-starts when the maximum length for defrost (par. MdF) is expired.

CONTROL OF EVAPORATOR FANS (XR570C, XR570D, XR572C)

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

- FnC=0 fans will switch ON and OFF with the compressor
- FnC=1 fans will run continuously

Fans will not run:

- During defrost;
- When the door switch digital input is enabled (XR572C);

After defrost termination there is a timed fan delay allowing for drain time, set by parameter "Fnd" in minutes.

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

ENERGY SAVING

The Energy Saving function allows an operative set point which is higher than the usual set point. This function was developed for energy saving and can be set through parameters "ILE" and "dLE" for working days cycle, "ISE" and "dSE" for weekends. In the model XR572C it can be enabled through digital input #3.

NOTE: when the function is enabled the displayed temperature flashes.

5 CONTROL PANEL COMMANDS

SET TO DISPLAY TARGET SET POINT: by pressing and releasing this key the set point is displayed for 5s.

TO MODIFY SET POINT: by holding the key pressed for at least 2s set point change mode is entered: the set point is displayed and the LEDs of the first and third digits blink. To change the value use the "UP" and "DOWN" keys. The new value can be stored either by pressing the "SET" key (the instrument restores temperature display) or by waiting the exit time-out to expire (15s).

(UP): in programming mode or in "Function Menu" it browses the parameter codes or increases the value of the displayed variable. Hold pressed for a faster change.

TO START A FAST FREEZING CYCLE: in normal operation, by holding it pressed for 3s the fast freezing cycle is started. Such cycle can be interrupted by holding the "UP" key pressed for 3s.

(DOWN): in programming mode or in "Function Menu" it browses the parameter codes or decreases the value of the displayed variable. Hold pressed for a faster change.

TO INVERT THE AUXILIARY OUTPUT: In model XR572C, by holding it pressed for 3s the state of the auxiliary output is reversed.

AUX TO INVERT THE AUXILIARY OUTPUT only model XR530D: by holding it pressed for 3s the state of the auxiliary output is reversed.

TO START A MANUAL DEFROST: by holding it pressed for 3s the defrost cycle is started

KEY COMBINATIONS

+ TO UNLOCK THE KEYBOARD: when held pressed for 3s the keyboard is unlocked (see "LOC" function).

SET + TO ENTER ON FUNCTION MENU: when held pressed for 3s the Function Menu is entered.

SET + TO RETURN TO THE ROOM TEMPERATURE DISPLAY: programming end, return to the room temperature display.

USE OF LEDS



A series of light points on the front panels is used to monitor the loads controlled by the instrument. Each LED function is described in the following table.

LED	MODE	Function
	ON	Compressor enabled
	Flashing	- Programming Phase (flashing with) - Anti-short cycle delay enabled
	ON	Fan enabled (XR570C, XR570D, XR572C)
	Flashing	Programming Phase (flashing with LED)
	ON	Defrost enabled
	Flashing	Drip time in progress (XR570C, XR570D, XR572C)
	ON	Fast freezing enabled
	ON	- ALARM signal - In "Pr2" indicates the parameter is also present in "Pr1" or in "rIC"
AUX	ON	Auxiliary output ON (XR530D, XR572C)

CODES ON THE DISPLAY

CODE	MODE	MEANING
Flashing Temperature		Energy Saving enable
rST	Flashing for 3sec	Alarm output reset
POF	Flashing for 3sec	Keypad locking enable
POn	Flashing for 3sec	Keypad unlocking

6 FUNCTION AND PARAMETERS PROGRAMMING MENU

FUNCTION MENU

Includes all the main functions controlled by the instrument.

Access procedure:

- The menu is entered by holding the SET and DOWN keys pressed for three seconds. The label of the first function is displayed.
- The UP and DOWN keys are used to cycle backwards or forward in the menu.
- By pressing the SET key the currently displayed function is enabled.

LIST OF FUNCTIONS

- "dFt": displays for 5s the time remaining to next defrost in hours & 10 min groups [hh.m.]. (only in case of RTC fault)
- "Ptc2": displays for 5s the temperature of the evaporator probe.(No on XR530C and XR530D)
- "Pr- I": includes all user level accessible parameters.

- "Pr-2": includes all the instrument's parameters (at installer level). It can be accessed through a security code. Hence it is possible to modify all parameters and add or remove parameters from "Pr1" (user level) by pressing "SET" + "DOWN". In Pr2 when a parameter is enabled at user level, LED (Alarm LED) is on.
- "rLc": includes Real Time Clock parameters (user level).
- "dL": a security code protected function allowing to choose whether digital inputs are activated by opening or closing the contact, corresponding to normally open or normally closed circuit.
- Standard configuration: digital input is activated by closing the contact.
- "Lc": keyboard lock. When enabled the "POF" flashing message is displayed for a few seconds then the keys are locked. Only the set point display is enabled.
- "Lst-": start the instrument self test.
- "R-": displays any Alarm messages.
- "L-": exits from menu

From functions "dFt" and "Pt2" you can exit by pressing SET or by time out. The instrument will go back to "Functions Menu". From all other functions the exit is by time out and the instrument will again display the room temperature.

EXIT TIMEOUT

If no key is pressed for more than 15 seconds the instrument reverts to room temperature display mode.

ACCESSING "PR2" AND "dIG" AND SECURITY CODE INPUT

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

- Enter Function Menu, select label "Pr2" or "dIG" and press the "SET" key. The "PAS" flashing message is displayed, shortly followed by "0-" with a flashing zero.
- Use "UP" or "DOWN" to input the security code in the flashing digit;
- Confirm the figure by pressing "SET".
- Repeat operations 2 and 3 for the other digits.
- If the security code is correct the access to "Pr2" or "dIG" is enabled by pressing "SET" on the last digit, otherwise the security code input process restarts from the beginning.

If no key is pressed for more than 15 seconds the instrument reverts to room temperature display mode.

SECURITY CODE is 321

NOTE: each parameter in "Pr2" can be removed or put into "Pr1" or "rIC" (user level) by pressing "SET" + "DOWN". In "Pr2" when a parameter is present in "Pr1" or "rIC" LED (Alarm LED) is on.

CHANGING A PARAMETER'S VALUE

Each parameter is identified by a special alphanumeric code (label). To change the parameter's value operate as follows:

- Enter the "Function Menu" and select the parameters' list you require: Pr1, rIC, Pr2 or dIG.
- Browse the parameters' list using "UP" or "DOWN" until the required parameter is displayed.
- Press the "SET" key to display its value.
- Use "UP" or "DOWN" to change its value.
- Press "SET" to store the new value and skip to the following parameter.

TO EXIT: Press "SET" + "UP" or wait 15s without hitting a key.

NOTE: the set value is stored even when the procedure is exited by waiting the timeout to expire without pressing "SET".

7 LIST OF PARAMETERS

- H Differential : (maximum width 50°C/90°F; resolution 1°C/°F or 0.1°C). 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.
- L5 Minimum set point: (-50°C+ SET / -58°F+SET): Sets the minimum value that can be input for the set point, to prevent the end user from setting incorrect temperature values.
- L5 Maximum set point:(SET ÷ 50°C / SET ÷ 122°F). Set the maximum acceptable value for set point.
- R Anti-short cycle delay: (0÷30 min) minimum interval between the compressor stop and the following restart.
- d5 Outputs activation delay at start up: (0÷30min) 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.
- ALC Set point alarms configuration: (0=referred to set point; 1=absolute) determines if temperature alarms are relative to set point or if alarms are referred to absolute temperatures.
- ALU MAXIMUM temperature alarm: (when ALC =0 from 0 to 50 °C or from 0 to 90°F; when ALC = 1 from ALL to 50°C or from ALL to 122°F). When this temperature is reached the alarm is enabled, (possibly after the Ald delay time).
- ALL Minimum temperature alarm: (when ALC = 0 from 0 to 50 °C or from 0 to 90°F; when ALC = 1 from -50 °C to ALU or from -58 °F to ALU). When this temperature is reached the alarm is enabled, (possibly after the Ald delay time).
- Rd Temperature alarm delay: (0÷255 min) time interval between the detection of an alarm condition and alarm signalling.
- dR Delay of temperature alarm at startup: (from 0 min to 23h 50 min) time interval between the detection of the temperature alarm condition after instrument power on and alarm signalling.
- EdR Alarm delay at the end of defrost (0÷255 min) Time interval between the detection of the temperature alarm condition at the end of defrost and alarm signalling.
- CE Compressor ON time during freezing: (0÷24 hours) allows to set the length of the continuous cycle. Can be used, for instance, when the room is filled with new products.
- dFF Defrost delay after continuous cycle: (0÷23 h 50 min) time interval between the end of the continuous cycle and the following defrost related to it.
- IdF Interval between defrost cycles: (1÷99 hours) Determines the time interval between the beginning of two defrost cycles. It is used in case of Real Time Clock fault.
- IdF (Maximum) length for defrost: (0÷255 min)
XR530C, XR530D: it sets the defrost duration.
XR570C, XR570D, XR572C: when EdF = 0 (timed defrost) it sets the defrost duration, when EdF = 1 or 2 (defrost termination based on temperature) it sets the maximum length for defrost.
- SdF Set point for SMARTFROST: (-30÷30 °C/ -22÷86 °F) Only in models XR570C, XR570D, XR572C. Evaporator temperature which starts IdF counting (interval between defrosts) in SMARTFROST mode.
- dE Defrost termination tempera-

ture: (-50÷50 °C/ -58÷122 °F) Only in models XR570C, XR570D, XR572C. Sets the temperature measured by the evaporator probe, which terminates the defrost.

dFd Temperature displayed during defrost: (0 = real temperature; 1 = temperature at defrost start; 2 = set point; 3 = "dEF" label)

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

EdF Defrost type: Only in models XR570C, XR570D, XR572C. (0 = electrical heater; 1 = hot gas).

EdF Defrost mode: Only in models XR570C, XR570D, XR572C.

EdF = 0 Time controlled defrost. The defrost lasts for the duration of time set in parameter MdF. On termination the drain down time starts (param. Fdt)

EdF = 1 Temperature controlled defrost. Defrost terminates when the evaporator reaches the temperature set in parameter dtE (defrost termination temperature).

NOTE: If at the start of defrost the evaporator temperature is higher than dtE then the defrost will be skipped.

EdF = 2 SMARTFROST mode. The time IdF (interval between defrosts) is increased when the compressor is running (even non consecutively) and the evaporator temperature is less than the value in "SdF" (set point for SMARTFROST). Defrost terminates on temperature. This mode is available only when the Real Time Clock is faulty.

Fdt Drain time: (0÷60 min) Only in models XR570C, XR570D, XR572C. Time interval between reaching defrost termination temperature and the restoring of the controllers' normal operation. This time allows the evaporator to eliminate water drops that might have formed during defrost.

dPD First defrost after startup: (0 = Immediately; 1 = after the IdF time) Used in case of Real Time Clock fault only.

FnC Fans operating mode: Only in models XR570C, XR570D, XR572C. (0 = runs with the compressor, OFF during defrost; 1 = continuous mode, OFF during defrost)

Fnd Fan delay after defrost: (0 to 255 min) Only in models XR570C, XR570D, XR572C. The time interval between end of defrost and evaporator fans start.

FSt Fan stop temperature: (-50÷50°C/-58÷122°F) Only in models XR570C, XR570D, XR572C. If the temperature, detected by the evaporator probe is above FSt the fan is stopped. Serves to avoid blowing warm air around the room.

R Thermostat probe calibration: (-30÷30°C, resolution 0.1 °C; or -54÷54 °F, resolution 1 °F) Permits calibration of the thermostat probe.

CE Evaporator probe calibration: (-30÷30°C, resolution 0.1 °C; or -54÷54 °F, resolution 1 °F). Only in models XR570C, XR570D, XR572C. Permits calibration of the of the evaporator probe.

rES Resolution (for °C): (0 = 1°C; 1 = 0.1 °C) allows decimal point display.

CF Temperature measurement unit 0 = Celsius; 1 = Fahrenheit.

COF 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.

dE Digital input #1 operating mode: 4 operating modes can be selected: 0 = generic alarm: the buzzer and the alarm output are enabled, the flashing message "EA" is displayed, the other outputs are not modified; 1 = klixon alarm: the buzzer and the alarm output are enabled, the flashing message "CA" is displayed, the other outputs are set to OFF state; 2 = serious alarm mode: same as for Klixon alarm, but the flashing "OFF" message is displayed.

3 = external consent for defrost end: when the temperature of defrost end is reached (par. EdF), the controller checks the state of the digital input; if it is ON, the drain time starts (par. Fdt) and the normal regulation is stopped. When the digital input is switched off, the controller re-starts the normal regulation. In any case the normal regulation re-starts when the maximum length for defrost (par. MdF) is expired.

d Digital input #1 delay: (0÷255 min) delay between the detection of the external alarm condition (input #1) and its signalling.

dOA Open door alarm delay - Digital input #2 (0÷255 min) (Only models XR572C with 4 digital input) delay between the detection of the open door condition (input #2) and its signalling.

EBR Buzzer and alarm relay silencing: (0 = mute disabled, 1 = mute enabled).

Rd1..Rd2 RS485 serial address (0÷94): identifies the instrument within a control or supervising system.

Pcb Parameter table (read only) It shows the code of the map used in factory to set the parameters.

RTC (REAL TIME CLOCK) PARAMETERS

To disable a defrost cycle set it to zero. E. G. If Ld6=0.0 then the sixth defrost cycle is disabled

Working days defrost start 1.6:

(00.0÷24.0 h; resolution 10 min; 00.0 disabled the defrost). These parameters set the beginning of the six programmable defrost cycles during working days. Ex. When Ld2 = 12.4 the second defrost starts at 12.4 during working days (Monday..Saturday).

Sd1..Sd6 Sundays defrost start 1.6: (00.0÷24.0 h; resolution 10 min; 00.0 disabled the defrost). These parameters set the beginning of the six programmable defrost cycles on Sundays. Ex. When Sd2 = 3.4 the second defrost starts at 3.40 on Sundays.

ILE Energy Saving cycle start during working days: (00.0 ÷ 24.0h; resolution 10 min; 00.0 disabled the cycle). During the Energy Saving cycle the set point is increased by the value in HES so that the operation set point is SET + HES. Obviously the operation set point shall comply with the product preservation requirements. During the Energy Saving cycle the temperature displayed flashes.

dE Energy Saving cycle length during working days: (0 ÷ 23; resolution 1 hour). Sets the duration of the Energy Saving cycle on working days. Ex. When ILE = 20.2 and dLE = 11 the Energy Saving cycle starts at 20.20 and ends at 7.20 (11 hours later) of the following morning on working days (from Monday to Friday).

ISE Energy Saving cycle start on

Saturdays: (00.0 ÷ 24.0h; resolution 10 min; 00.0 disabled the cycle). The Energy Saving cycle on Saturdays can last up to 72 hours. If the Energy Saving cycle on Saturday shall be automatically linked to the working days cycle, set "ISE" (starting time) to a time before the end of the working days Energy Saving cycle.

Energy Saving cycle length on Saturdays:

(0÷23; resolution 1 hour)

HES Temperature increase during the Energy Saving cycle (0÷30°C or 0÷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.

Current day:

(1÷7; resolution 1 day). Where Monday = 1.... Sunday = 7.

Current hour:

(0÷23; resolution 1 hour)

Current minute: (0÷59; 1 minute)

8 DIGITAL INPUTS

FUNCTION "diG"

The "diG" function, included in the Function Menu and protected by a security code, allows to choose whether the digital inputs shall be activated by closing or opening the contact.

Once the function has been selected and the security code entered, the "Inx" label will be displayed, where x is the first digital input enabled for the instrument and can vary from 1 to 4. The labels can be browsed using the "UP" and "DOWN" keys - to access the value press "SET". Values can be modified in the 0 ÷ 1 range:

0 = digital input is activated by opening the contact;

1 = digital input is activated by closing the contact.

Standard configuration: digital input is activated by closing the contact.

To exit do not press any key for 15s. Models **XR530C**, **XR530D**, **XR570C** and **XR570D** are fitted with 1 non-insulated digital input, which can be configured by means of "dIC" parameter.

Model **XR572C** can have up to 4 opto-insulated inputs; whose power (12V) is supplied by the XR40SL.

INPUT #1: CONFIGURABLE.

The kind of actions depends on the setting of parameter "dIC" as reported in the Parameters Menu.

INPUT #2: DOOR OPEN SWITCH.

Signals the room door opening to the instrument. When it is enabled the fans don't run. After a delay time (set through parameter "dOA") since when the door is opened the alarm output is enabled and the display shows the message "dA".

INPUT #3: ENABLING THE ENERGY SAVING CYCLE

Sets the instrument to Energy Saving mode. The Energy Saving cycle proceeds until the input is active.

INPUT #4: HOLIDAY DEFROST

When active the daily defrosts are controlled using the parameters referred to Sunday cycles.

9 INSTALLATION AND MOUNTING

Instruments **XR530C**, **XR570C** and **XR572C** are panel mounted, in a 29x71 mm hole, and fixed using the special bracket supplied. **XR530D**, **XR570D** and the slave module **XR40SL** shall be mounted on an omega DIN rail. The ambient 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.

10 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 input connection 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.

Model **XR572C** is connected to the slave module **XR40SL** through a multipolar connector (included). The slave module accommodates the instrument relays, the transformer and, on request, the serial port. The power supply for the whole system and the relay commands are conveyed through the connection cable.

PROBES 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 and from the warmest place during defrost, to prevent premature defrost termination.

11 RS485 OUTPUT

The models **XR530C**, **XR530D**, **XR570C**, **XR570D** can be connected by means of TTL serial outputs, to the external module XJRS485 serial module to interface the instrument with the monitoring and supervising system XJ500. The models **XR572C**, on request, can be provided with the RS485 internal serial interface.

12 REMOTE DISPLAY XR REP

Each instrument has an output to the remote display XR REP. The XR REP repeats the temperature shows by the controller.

13 ALARM SIGNALS

Message - Mode	Cause	Outputs
"EE" Flashing	Data or memory failure	Alarm output ON; Other outputs unchanged
"P1" Flashing	Probe 1 failure	Alarm output ON; Compressor output according to param. "COOn" and "COF"
"P2" * Flashing with room temper.	Probe 2 failure	Alarm output ON; Other outputs unchanged; Defrost termination is timed
"rtC" Flashing with room temper.	Real Time Clock failure	Alarm output ON; Other outputs unchanged; Defrosts according to "IdF"
"HA" Flashing with room temper.	Maximum temperature alarm	Alarm output ON; Other outputs unchanged.
"LA" Flashing with room temper.	Minimum temperature alarm	Alarm output ON; Other outputs unchanged.
"FF" Flashing with room temper.	Fast freezing interrupted by power failure	Alarm output ON; Other outputs unchanged.
"EA" Flashing with room temper.	External alarm	Alarm output ON; Other outputs unchanged.

Message - Mode	Cause	Outputs
"CA" Flashing with room temper.	Klixon alarm	Alarm output ON; Other outputs OFF.
"OFF" Flashing with room temper.	Serious external alarm	Alarm output ON; Other outputs OFF.
"dA" ** Flashing with room temper.	Door open alarm	Alarm output ON; Other outputs unchanged.

* only on models **XR570C**, **XR570D**, **XR572C**

** only on the model **XR572C** with 4 digital inputs

SILENCING BUZZER / ALARM RELAY OUTPUT

Once the alarm signal is detected the buzzer and the alarm output can be disabled by pressing any key. The display signal remains as long as the alarm condition remain. Disabling can be inhibited by setting "tbA" to 0 in which case the alarm relay remains active as long as the alarm condition lasts.

ALARM "EE"

The instruments in the Dixell range are provided with an internal check verifying data integrity. Alarm "EE" flashes when a failure in the internal memory is detected. In such case the alarm output enabled.

WHAT TO DO

1. Cancel the alarm by pressing a key.
2. Check the value of all parameters and restore correct values when wrong.
3. Check the correct instrument operation and in case of further errors call the service.

REAL TIME CLOCK ALARM (RTC)

The RTC alarm signals a failure in the instrument internal clock. In such case defrosts are controlled by parameters "IdF" and "dPO" and the Function Menu displays label "dFT", showing the time to the next defrost.

ALARM RESET THROUGH KEY-BOARD

It is referred to alarms "EE" and "rtC" and "FF". Reset is performed by pressing any key while the alarm is being signalled, then message "rES" is displayed for about 3s before normal operation is restored.

ALARM RECOVERY

Probe alarms "P1" and "P2" start 30 seconds after the fault in the related probe; they automatically stop 30 seconds 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 "EA", "CA", "OFF" and "dA" stop as soon as the external digital input is disabled.

14 SELF DIAGNOSIS

The device self test can be forced by triggering function "tSt" in the Function Menu. Self test progress:

- 1) Each segment or decimal point is turned on alternatively (3 segments are on in parallel);
- 2) All digits in the display are turned on, one by one;
- 3) All digits in the display are turned on simultaneously;
- 4) LEDS are activated, one by one;
- 5) All relays are activated, one by one, for 3s, regardless of configuration;

6) Digital input test:

♦ If a key is pressed the "Fx" message is displayed (x = number of the key pressed).

♦ If a digital input is enabled the "Inx" message is displayed (x = number of the enabled input).

7) All the parameters and their values are displayed in sequence.

Once the self test cycle is over the instrument restores normal operation.

15 TECHNICAL DATA

HOUSING: self extinguishing ABS.

CASE

XR530C, XR570C, XR572C: frontal 32x74 mm; depth 70mm;

XR530D, XR570D, XR40SL: 4 DIN modules 70x85 mm; depth 61mm.

MOUNTING

XR530C, XR570C, XR572C: panel mounting in a 71x29 mm panel cut-out.

XR530D, XR570D, XR40SL: DIN RAIL mounted in a omega (3) din rail .

FRONTAL PROTECTION

XR530C, XR570C, XR572C: IP65

CONNECTIONS

Screw terminal block ≤ 2,5mm² wiring. **XR572C** is connected to the slave module **XR40SL** through a multipolar connector.

POWER SUPPLY

XR530C, XR570C: 12Vac/dc, -10% +15% **XR530D, XR570D, XR40SL:**

110/230Vac, ± 10% 50/60Hz (opt. 24Vac, ± 10% 50/60Hz).

XR572C: supplied by the slave **XR40SL**

POWER ABSORPTION: 3VA max.

DISPLAY

3 digits, red LED, 14,2mm high

INPUTS

XR530C, XR530D: 1 PTC probe

XR570C, XR570D, XR572C 2 PTC probes

RELAY OUTPUTS

COMPRESSOR

XR530D, XR570D, XR530C, XR570C relay SPST 8(3)A, 250Vac

XR572C relay SPST 16(6) A, 250Vac

DEFROST

XR570D: relay SPST 5(2)A, 250Vac

XR570C: relay SPST 8(3)A, 250Vac

XR572C: relay SPDT 8(3)A, 250Vac

FANS

XR570C, XR570D relay SPST 5(2)A, 250Vac

XR572C: relay 8(3)A, 250Vac

ALARM

XR530C, XR570C relay SPDT 8(3)A, 250Vac

XR530D, XR570D relay SPST 5(2)A, 250Vac

AUXILIARY

XR530D: relay SPST 5(2)A, 250Vac

XR572C: relay SPDT 8(3)A, 250Vac

RS485 OUTPUT

XR530C, XR530D, XR570C, XR570D TTL output for external serial module XJRS485

XR572C: RS485 serial output (optional)

OTHER OUTPUTS

Buzzer for acoustical alarm

XR572C: alarm output 12Vdc 40mA

DATA STORING: on the non-volatile memory (EEPROM).

OPERATING TEMPERATURE

0÷60 °C

RELATIVE HUMIDITY

20÷85% (no condensing)

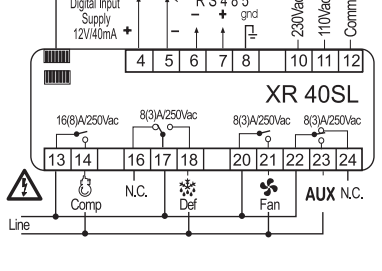
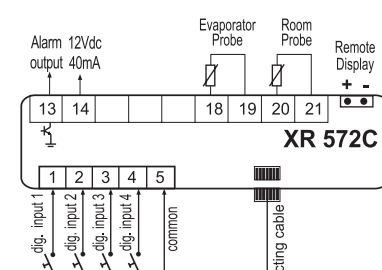
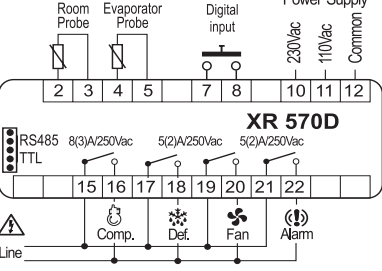
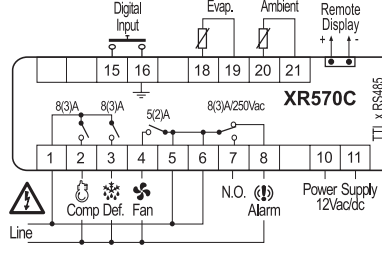
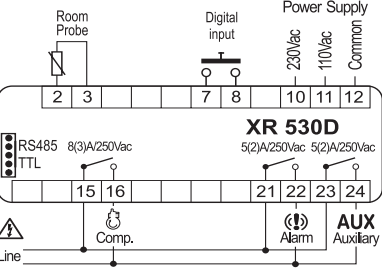
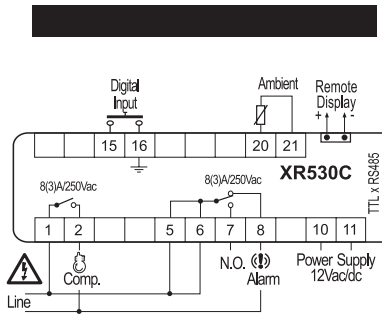
STORAGE TEMPERATURE

-30÷85 °C

MEASURING RANGE: -55÷50 °C

RESOLUTION: 0.1 °C or 1 °C or 1 °F

ACCURACY OF THE CONTROLLER AT 25°C: ±0,3 °C ±1 digit



DEFAULT SETTING MODELS XR530C - XR530D

PARAMETER	RANGE	LEVEL	DEFAULT
Set point	LS+US	Pr1	3/38 °C/°F
Hy	1÷50°C o 1÷90°F	Pr1	2/4
LS	-50.0°C÷Set or -58°F÷Set	Pr2	-10/14
US	Set÷50.0°C Set÷122°F	Pr2	20/68
AC	0÷30 min	Pr2	1
OdS	0÷30 min	Pr2	1
ALC	0=Relative; 1=Absolute	Pr2	0
ALU	with ALC=1: ALL÷50°C/122°F with ALC=0: 0÷50°C/90°F	Pr2	10/18
ALL	with ALC=1: -50°C/-58°F÷ALU with ALC=0: 0÷50°C/90°F	Pr2	10/18

ALd	0 ÷ 255 min	Pr2	15
dAO	0÷ 23h e 50'	Pr2	1.3
EdA	0 ÷ 255 min	Pr2	30
CCt	0 ÷ 24 hours	Pr2	4
dAF	0÷ 23h e 50'	Pr2	1.0
IdF	1 ÷ 99 hours	Pr2	8
MdF	0 ÷ 255 min	Pr2	20
dFd	0=Real; 1=Start 2=Set; 3=dEF	Pr2	1
dAd	0 ÷ 255 min	Pr2	30
dPO	0=After 30s; 1=after IdF	Pr2	1
Ot	-30÷30°C or -54÷54°F	Pr2	0/0
rES	0 = 1°C; 1 = 0,1°C	Pr2	1
CF	0 = °C; 1 = °F	Pr2	0/1
COOn	0÷255 min	Pr2	15
COF	0÷255 min	Pr2	30
dIC	0=Generic; 1=Klixon; 2=Cut-off; 3=External consent	Pr2	0

dId	0÷255 min	Pr2	5
tBA	0=Disable 1=Enable	Pr2	1
Ad1	0÷94	Pr2	0
Ad2	0÷94	Pr2	1
Ptb		Pr1	--

REAL TIME CLOCK PARAMETERS			
Ld1	0.0÷24.0	Pr2	7.0
Ld2	0.0÷24.0	Pr2	20.0
Ld3	0.0÷24.0	Pr2	0.0
Ld4	0.0÷24.0	Pr2	0.0
Ld5	0.0÷24.0	Pr2	0.0
Ld6	0.0÷24.0	Pr2	0.0
Sd1	0.0÷24.0	Pr2	7.0
Sd2	0.0÷24.0	Pr2	20.0
Sd3	0.0÷24.0	Pr2	0.0
Sd4	0.0÷24.0	Pr2	0.0
Sd5	0.0÷24.0	Pr2	0.0
Sd6	0.0÷24.0	Pr2	0.0
ILE	0.0÷24.0	Pr2	0.0
dLE	0÷23	Pr2	0
ISE	0.0÷24.0	Pr2	0.0
dSE	0÷72	Pr2	0
HES	0÷30 °C or 0÷54 °C	Pr2	0/0
ddd	1÷7	rtC	1
HHH	0÷23	rtC	0
nnn	0÷59	rtC	0

DEFAULT SETTING MODELS XR570C - XR570D - XR572C

PARAMETER	RANGE	LEVEL	DEFAULT
Set point	LS+US	Pr1	-5/23 °C/°F
Hy	1÷50°C o 1÷90°F	Pr1	2/4
LS	-50.0°C÷Set or -58°F÷Set	Pr2	-30/-22
US	Set÷50.0°C Set÷122°F	Pr2	20/68
AC	0÷30 min	Pr2	1
OdS	0÷30 min	Pr2	1
ALC	0=Relative; 1=Absolute	Pr2	0
ALU	with ALC=1: ALL÷50°C/122°F with ALC=0: 0÷50°C/90°F	Pr2	10/18
ALL	with ALC=1: -50°C/-58°F÷ALU with ALC=0: 0÷50°C/90°F	Pr2	10/18

ALd	0 ÷ 255 min	Pr2	15
dAO	0' ÷ 23h 50'	Pr2	1.3
EdA	0 ÷ 255 min	Pr2	30
CCt	0 ÷ 24 hours	Pr2	4
dAF	0' ÷ 23h e 50'	Pr2	2.0
IdF	1 ÷ 99 hours	Pr2	6
MdF	0 ÷ 255 min	Pr2	30
SdF	-30 ÷ 30 °C / -22 ÷ 86°F	Pr2	0/32
dIE	-50 ÷ 50 °C / -58 ÷ 122°F	Pr2	8/46
dFd	0=Real; 1=Start 2=Set; 3=dEF	Pr2	1
dAd	0 ÷ 255 min	Pr2	30

tdF	0=Resistor 1=Hot gas</
-----	------------------------