

Digital controller with defrost, fans and auxiliary relay management

XW60LR – XW60LRH

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.

A SAFETY PRECAUTIONS 1.2

- 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.
- Dixell Srl reserves the right to change the composition of its products, even without notice, ensuring the same and unchanged functionality.

GENERAL DESCRIPTION 2.

Models XW60LR, XW60LRH , format 38x185mm, are microprocessor based controller, suitable for applications on medium or low temperature ventilated refrigerating units. It has 4 relay outputs to control compressor, fan and defrost, which can be either electrical or reverse cycle (hot gas) It could be provided with a Real Time Clock which allows programming of up to 6 daily defrost cycles, divided into holidays and workdays. A "Day and Night" function with two different set points is fitted for energy saving. It is also provided with up to three NTC or PTC probe inputs, the first one for temperature control, the second one, to be located onto the evaporator, to control the defrost termination temperature and to managed the fan. Third probe can operates as digital input.

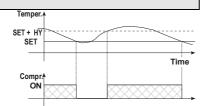
The HOT KEY output allows to connect the unit, by means of the external module XJ485-CX, to a network line ModBUS-RTU compatible such as the dixell monitoring units of X-WEB family. It allows to program the controller by means the HOT KEY programming keyboard.

The instrument is fully configurable through special parameters that can be easily programmed through the keyboard

3. CONTROLLING LOADS

3.1 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"

3.2 DEFROST

Two defrost modes are available through the "tdF" parameter: defrost through electrical heater (tdF = EL) and hot gas defrost (tdF = in).

The defrost interval depends on the presence of the RTC (optional). If the RTC is present is controlled by means of parameter "EdF"

with EdF=in the defrost is made every "IdF" time - standard way for controller without RTC. with EdF = "rtc", the defrost is made in real time depending on the hours set in the parameters

Ld1..Ld6 on workdays and in Sd1...Sd6 in holidays; Other parameters are used to control defrost cycles: its maximum length (MdF) and two defrost modes: timed or controlled by the evaporator's probe (P2P).

At the end of defrost dripping time is started, its length is set in the Fdt parameter. With Fdt =0 the dripping time is disabled

CONTROL OF EVAPORATOR FANS 3.3

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

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

- FnC = o_n fans will run even if the compressor is off, and not run during defrost;
- After defrost, there is a timed fan delay allowing for drip time, set by means of the "Fnd" parameter. fans will switch ON and OFF with the compressor and run during defrost;
- $FnC = C_Y$ fans will switch ON and OFF with the compre-FnC = o_Y fans will run continuously also during defrost

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

3.3.1 Forced activation of fans

This function managed by the Fct parameter is designed to avoid short cycles of fans, that could happen when the controller is switched on or after a defrost, when the room air warms the evaporator. Functioning: if the difference of temperature between the evaporator and the room probes is more than the value of the Fct parameter, the fans are switched on. With Fct=0 the function is disabled.

3.3.2 Cyclical activation of the fans with compressor off.

When Fnc = c-n or c-Y (fans in parallel to the compressor), by means of the Fon and FoF parameters the fans can carry out on and off cycles even if the compressor is switched off. When the compressor is stopped the fans go on working for the Fon time. With Fon =0 the fans remain always off, when the compressor is off.

3.4 AUXILIARY RELAY CONFIGURATION - TERM.3-5, PAR. OA3

The functioning of the auxiliary relay (terminals. 3-5) can be set by the oA3 parameter, according to the kind of application. In the following paragraph the possible setting:

3.4.1 Light relay - oA3= Lig

With oA3 = Lig, the 3-5 relay is set as light. It is activated by key or when i1F = dor.

3.4.2 Alarm relay - oA3= AUS

There are 2 possibilities: Activation via digital input (oA3= AUS, i1F or i2F = AUS)

With oA3 = AUS and i2F or i1F = AUS the relay 3-5 is activated via digital input and remains ON until the digital input is activated or is silenced by pressing any key.

Auxiliary thermostat (es. anti-sweat heaters) b.

- Parameters involved:
 - ACH Type of regulation: heating/cooling;
 - SAA Set point auxiliary relay Differential for auxiliary relay
 - SHy - ArP Probe for auxiliary relay
 - Sdd Auxiliary output off during defrost

By means of these 5 parameters the functioning of the auxiliary relay can be set. NOTE: Set oA3=AUS and ArP= nP (no probe for auxiliary output).

In this case the relay 3-5 can be activated only by digital input with i1F or i2F = AUS.

3.4.3 On/off relay - oA3 = onF

In this case the relay is activated when the controller is turned on and de-activated when the controller is in stand-by mode.

3.4.4 Neutral zone regulation

With oA3 = db the relay 3-5 can control a heater element to perform a neutral zone action. oA3 cut in = SET-HY oA3 cut out = SET

3.4.5 Alarm relay

With oA3 = ALr the relay 3-5 operates as alarm relay. It is activated every time an alarm happens. Its status depends on the tbA parameter:

With "tbA = y", the relay is silenced by pressing any key.

With "tbA = n", the alarm relay remains on until the alarm condition recovers.

3.4.6 Night blind management during energy saving cycles

With oA3 = HES, the relay 3-5 operates to manage the night blind: the relay is energised when the energy saving cycle is activated, by digital input, frontal button or RTC (optional).

FRONT PANEL COMMANDS

XW60LR - STANDARD FRONTAL PANEL



4.2 **XW60LR - STEEL FINISHING**





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

(DEF) To start a manual defrost

(UP): To see the max. stored temperature; in programming mode it browses the parameter codes or increases the displayed value.

1 (DOWN) To see the min stored temperature; in programming mode it browses the parameter codes or decreases the displayed value

To switch the instrument off, if onF = oFF

To switch the light, if oA3 = Lig

KEY COMBINATIONS:



To lock & unlock the keyboard.

To enter in programming mode.

To return to the room temperature display.

4.4 USE OF LEDS

Each LED function is described in the following table.						
LED	MODE	FUNCTION				
*	ON	Compressor enabled				
楙	Flashing	Anti-short cycle delay enabled				
懋	ON	Defrost enabled				
懋	Flashing	Drip time in progress				
***	ON	ans enabled				
5	Flashing	ans delay after defrost in progress.				
(!)	ON	n alarm is occurring				
(**)	ON	Continuous cycle is running				
ÿ)	ON	Energy saving enabled				
ý.	ON	Light on				
AUX	ON	Auxiliary relay on				
°C	ON	Measurement unit				
°C	Flashing	Programming phase				

MAX & MIN TEMPERATURE MEMORIZATION

5.1 HOW TO SEE THE MIN TEMPERATURE

- Press and release the v 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 A key

- The "Hi" message will be displayed followed by the maximum temperature recorded.
- 3. By pressing the A key again or by waiting 5s the normal display will be restored.

HOW TO RESET THE MAX AND MIN TEMPERATURE RECORDED 5.3

- Hold press the SET key for more than 3s, while the max. or min temperature is displayed. (rSt message will be displayed)
- To confirm the operation the "rSt" message starts blinking and the normal temperature will be 2 displayed.

6. MAIN FUNCTIONS

6.1 TO SET THE CURRENT TIME AND DAY (ONLY FOR INSTRUMENTS WITH RTC)

- When the instrument is switched on, it's necessary to program the time and day.
 - Enter the Pr1 programming menu, by pushing the SET + 👻 keys for 3s. 1 2
 - The rtc parameter is displayed. Push the SET key to enter the real time clock menu. The Hur (hour) parameter is displayed.
 - 4 Push the SET and set current hour by the UP and Down keys, then push SET to confirm the value.
 - 5 Repeat the same operations on the Min (minutes) and dAy (day) parameters.

To exit: Push SET+UP keys or wait for 15 sec without pushing any keys

HOW TO SEE THE SET POINT 6.2



3

Push and immediately release the SET key: the display will show the Set 1 point value: 2 Push and immediately release the SET key or wait for 5 seconds to

display the probe value again.

6.3 HOW TO CHANGE THE SET POINT

- 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" LED starts blinking;
- 3 To change the Set value push the ▲ or ◄ arrows within 10s.
- To memorise the new set point value push the SET key again or wait 10s. 4

6.4 HOW TO START A MANUAL DEFROST

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

6.5 HOW TO CHANGE A PARAMETER VALUE

- To change the parameter's value operate as follows
- 1.
- 2
- 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.

6.6 THE HIDDEN MENU

The hidden menu includes all the parameters of the instrument.

6.6.1 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.
- Select the required parameter. 3
- 4. Press the "SET" key to display its value
- 5 Use
 or
 to change its value.
- Press "SET" to store the new value and move to the following parameter.
- To exit: Press SET + A 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.

6.6.2 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.

HOW TO LOCK THE KEYBOARD 6.7

- Keep pressed for more than 3 s the UP + DOWN keys. 1
- 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.

6.8 TO UNLOCK THE KEYBOARD

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

6.9 THE CONTINUOUS CYCLE

When defrost is not in progress, it can be activated by holding the " A " key pressed for about 3 seconds. The compressor operates to maintain the "ccS" set point for the time set through the "CCt" parameter. The cycle can be terminated before the end of the set time using the same activation key " for 3 seconds.

6.10 THE ON/OFF FUNCTION

(I)

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

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

7. PARAMETERS

Real time clock menu (only for controller with RTC): to set the time and date and defrost rtc start time.

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. P2P Evaporator probe presence: n= not present: the defrost stops by time; y= present: the defrost
- stops by temperature
- OE Evaporator probe calibration: (-12.0÷12.0°C; -120÷120°F). allows to adjust possible offset of the evaporator probe. P3P Third probe presence (P3): n= not present:, the terminals 13-14 operate as digital input.; y=
- present:, the terminals 13-14 operate 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.
- 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.
- Percentage of the second and first probe for regulation (0÷100; 100 = P1, 0 = P2): it rtr allows to set the regulation according to the percentage of the first and second probe, as for the following formula (rtr(P1-P2)/100 + P2).
- CCt Compressor ON time during continuous cycle: (0.0+24.0h; res. 10min) Allows to set the length of the continuous cycle: compressor stays on without interruption for the CCt time. Can be used, for instance, when the room is filled with new products.
- CCS Set point for continuous cycle: (-50÷150°C) it sets the set point used during the continuous cycle
- COn Compressor ON time with faulty probe: (0+255 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+255 min) time during which the compressor is OFF in case of faulty thermostat probe. With COF=0 compressor is always active

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.
- Lod Instrument display: (P1; P2, P3, P4, SET, dtr): it selects which probe is displayed by the instrument: P1 = Thermostat probe; P2 = Evaporator probe; P3 = Third probe(only for model with this option enabled); P4 = NOT SET IT, SET = set point; dtr = percentage of visualization.
- rEd X- REP display (optional): (P1; P2, P3, P4, SET, dtr): it selects which probe is displayed by X- REP: P1 = Thermostat probe; P2 = Evaporator probe; P3 = Third probe(only for model with this option enabled); P4 = NOT SET IT, SET = set point; dtr = percentage of visualization.

- Display delay: (0 ÷20.0m; resul. 10s) when the temperature increases, the display is updated of 1 °C/1°F after this time
- Percentage of the second and first probe for visualization when Lod = dtr (0÷100; 100 = dtr P1, 0 = P2): if Lod = dtr it allows to set the visualization according to the percentage of the first and second probe, as for the following formula (dtr(P1-P2)/100 + P2)

DEFROST

- EdF Defrost mode (only for controller with RTC):
- rtc = Real Time Clock mode. Defrost time follows Ld1+Ld6 parameters on workdays and Sd1+Sd6 on holidays
- in = interval mode. The defrost starts when the time "ldf" is expired.
- Defrost type: EL = electrical heater; in = hot gas tdF
- dFP Probe selection for defrost termination: nP = no probe; P1 =thermostat probe; P2 = evaporator probe; P3 =configurable probe; P4 = NOT SET IT.
- dtE Defrost termination temperature: (-50÷50 °C/ -58÷122°F) sets the temperature measured by the evaporator probe, which causes the end of defrost.
- IdF Interval between defrost cycles: (0÷120h) Determines the time interval between the beginning of two defrost cycles.
- (Maximum) length for defrost: (0+255min) When P2P = n, (not evaporator probe: timed MdF defrost) it sets the defrost duration, when P2P = y (defrost end based on temperature) it sets the maximum length for defrost.
- dSd Start defrost delay: (0+59min) This is useful when different defrost start times are necessary to avoid overloading the plant.
- dFd Temperature displayed during defrost: (rt = real temperature; it = temperature at defrost start; SEt = set point; dEF = "dEF" label)
- dAd MAX display delay after defrost: (0÷120min). Sets the maximum time between the end of defrost and the restarting of the real room temperature display
- Fdt Drip time: (0+120 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: (y = immediately; n = after the IdF time)
- dAF Defrost delay after continuous cycle: (0+23.5h) time interval between the end of the fast freezing cycle and the following defrost related to it.

FANS

- FnC Fans operating mode: C-n= runs with the compressor, OFF during defrost;
- o-n = continuous mode, OFF during defrost;
 - C-Y = runs with the compressor, ON during defrost;
 - o-Y = continuous mode, ON during defrost;
- Fnd Fans delay after defrost: (0+255min) Interval between end of defrost and evaporator fans start.
- Fct Temperature differential avoiding short cycles of fans (0+59°C; Fct=0 function disabled). If the difference of temperature between the evaporator and the room probes is more than the value of the Fct parameter, the fans are switched on.
- FSt Fans stop temperature: (-50÷50°C/122°F) setting of temperature, detected by evaporator probe, above which fans are always OFF.
- Fon Fan ON time: (0÷15 min) with Fnc = C_n or C_y, (fan activated in parallel with compressor). it sets the evaporator fan ÓN cycling time when the compressor is off. With Fon =0 and FoF ≠ 0 the fan are always off, with Fon=0 and FoF =0 the fan are always off.
- FoF Fan OFF time: (0+15 min) with Fnc = C_n or C_y, (fan activated in parallel with compressor). it sets the evaporator fan off cycling time when the compressor is off. With Fon =0 and FoF \neq 0 the fan are always off, with Fon=0 and FoF =0 the fan are always off.
- FAP Probe selection for fan management: nP = no probe; P1 =thermostat probe; P2 = evaporator probe; P3 =configurable probe; P4 = NOT SET IT
- AUXILIARY RELAY CONFIGURATION (terms. 3-5) oA3 = AUS
- ACH Kind of regulation for auxiliary relay: Ht = heating; CL = cooling
- SAA Set Point for auxiliary relay: (-50,0÷110,0°C; -58÷230°F) it defines the room temperature set point to switch auxiliary relay
- SHy Differential for auxiliary output: (0,1 ÷ 25,5°C / 1÷255 °F) Intervention differential for auxiliary output set point.

 - With ACH = cL AUX Cut in is SAA + SHy; . AUX Cut out is SAA With ACH = Ht AUX Cut in is SAA SHy; . AUX Cut out is SAA
- Probe selection for auxiliary: nP = no probe, the auxiliary relay is switched only by button; P1 = Probe 1; P2 = Probe 2; P3 = Probe 3; P4 = NOT SET IT. ArP
- Sdd Auxiliary relay off during defrost: n = the auxiliary relay 3-5 operates during defrost.
- y = the auxiliary relay 3-5 is switched off during defrost.

ALARMS

ALP Probe selection for alarm: nP = no probe, the temperature alarms are disabled; P1 = Probe 1; P2 = Probe 2; P3 = Probe 3; P4 = NOT SET IT.

- 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/ fan recovery: (0,1+25,5°C; 1+45°F) Intervention differential for recovery of temperature alarm. It's also used for the restart of the fan when the FSt temperature is reached
- 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 start-up: (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
- AP2 Probe selection for temperature alarm of condenser: nP = no probe; P1 =thermostat probe; P2 = evaporator probe; P3 =configurable probe; P4 = NOT SET IT. 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)

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- 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 or 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.

AUXILIARY RELAY tbA

Alarm relay silencing (with oA3 =ALr): n= silencing disabled: alarm relay stays on till alarm condition lasts,

- r =silencing enabled: alarm relay is switched OFF by pressing a key during an alarm
- oA3 Fourth relay configuration (3-5): dEF, FAn: do not select it!. ALr: alarm; Lig: light; AuS: Auxiliary relay; onF: always on with instrument on; db= neutral zone; cP2 = second compressor; dF2: do not select it!;. HES:. night blind.
- AoP Alarm relay polarity: it set if the alarm relay is open or closed when an alarm happens. CL= terminals 1-4 closed during an alarm; oP = terminals 1-4 open during an alarm

DIGITAL INPUTS

i1P Digital input 1 polarity (13-14): oP: the digital input is activated by opening the contact; CL: the digital input is activated by closing the contact.

- i1F Digital input 1 configuration (13-14): 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= activation of a defrost cycle; AUS=not enabled; Htr= kind of action inversion (cooling - heating); FAn= not set it; ES= Energy saving; HdF = Holiday defrost (enable only with RTC); onF = to switch the controller off.
- did (0+255 min) with i1F= EAL or i1F = bAL digital input alarm delay (13-14): 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
- 2nd digital input polarity (13-19): oP: the digital input is activated by opening the contact; CL: the digital input is activated by closing the contact.
- 2nd digital input configuration (13-19): EAL= external alarm: "EA" message is displayed; bAL= serious alarm "CA" message is displayed. PAL= pressure switch alarm, "CA" message is i2F displayed; dor= door switch function; dEF= activation of a defrost cycle; AUS=not enabled; Httr= kind of action inversion (cooling – heating); FAn= not set it; ES= Energy saving; HdF = Holiday defrost (enable only with RTC); on F = to switch the controller off.
- d2d (0+255 min) with i2F= EAL or i2F= bAL 2nd digital input alarm delay (13-19): delay between the detection of the external alarm condition and its signalling. with i2F= dor: door open signalling delay
 - with i2F= 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. Compressor and fan status when open door: no = normal; Fan = Fan OFF; CPr =

- odc Compressor OFF; F_C = Compressor and fan OFF
- 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) it sets the increasing value of the set point during the Energy Saving cycle.
TO SET CURRENT TIME AND WEEKLY HOLIDAYS (ONLY FOR MODELS WITH RTC)

- Hur Current hour (0 ÷ 23 h)
- Min Current minute (0 ÷ 59min)
- Current day (Sun ÷ SAt) dAY
- Hd1 First weekly holiday (Sun ÷ nu) Set the first day of the week which follows the holiday times
- Hd2 Second weekly holiday (Sun ÷ nu) Set the second day of the week which follows the holiday times.

N.B Hd1,Hd2 can be set also as "nu" value (Not Used). TO SET ENERGY SAVING TIMES (ONLY FOR MODELS WITH RTC)

- Energy Saving cycle start during workdays: (0 ÷ 23h 50 min.) During the Energy Saving ILE cycle the set point is increased by the value in HES so that the operation set point is SET +
- HES Energy Saving cycle length during workdays: (0 \div 24h 00 min.) Sets the duration of the dLE Energy Saving cycle on workdays.
- Energy Saving cycle start on holidays. (0 ÷ 23h 50 min.) ISE
- Energy Saving cycle length on holidays (0 ÷ 24h 00 min.) dSE

TO SET DEFROST TIMES (ONLY FOR MODELS WITH RTC)

- Ld1+Ld6 Workday defrost start (0 ÷ 23h 50 min.) These parameters set the beginning of the 6 programmable defrost cycles during workdays. Ex. When Ld2 = 12.4 the second defrost starts at 12.40 during workdays.
- Sd1+Sd6 Holiday defrost start (0 + 23h 50 min.) These parameters set the beginning of the 6 programmable defrost cycles on holidays. Ex. When Sd2 = 3.4 the second defrost starts at 3.40 on holidays.

N.B. : To disable a defrost cycle set it to "nu" (not used). Ex. If Ld6=nu ; the sixth defrost cvcle is disabled

OTHER

XW60LR - XW60LRH

- 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 on/off key enabling: nu = disabled; oFF = enabled; ES = not set it.
- dP1 Thermostat probe display

DIGITAL INPUT

- dP2 Evaporator probe display
- dP3 Third probe display- optional.

Ptb Parameter table code: readable only.

The first digital input is enabled with P3P = n.

With P3P = n and i1F = i2F the second digital input is disabled

Real set point: it shows the set point used during the energy saving cycle or during the continuous cycle. rFI Software release for internal use.

3/6

The free voltage digital inputs are programmable by the "i1F" and i2F parameters.

8.1 GENERIC ALARM (i1F or i2F = 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.

8.2 SERIOUS ALARM MODE (i1F or i2F = 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 deactivated.

8.3 PRESSURE SWITCH (i1F or i2F = 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.

8.4 DOOR SWITCH INPUT (i1F or i2F = dor)

It signals the door status and the corresponding relay output status through the "odc" parameter: no = normal (any change); Fan = Fan OFF; CPr = Compressor OFF; F_C = Compressor and fan 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.

8.5 START DEFROST (i1F or i2F = dEF)

It starts a defrost if there are the right conditions. After the defrost is finished, the normal regulation will restart only if the digital input is disabled otherwise the instrument will wait until the "**MdF**" safety time is expired.

8.6 SWITCH THE AUXILIARY RELAY (i1F or i2F = AUS)

With oA3 = AUS the digital input switched the status of the auxiliary relay

8.7 ENERGY SAVING (i1F or i2F = ES)

The Energy Saving function allows to change the set point value as the result of the SET+ HES (parameter) sum. This function is enabled until the digital input is activated.

8.8 HOLIDAY DEFROST (i1F or i2F = HDF) –ONLY FOR MODELS WITH RTC This function enabled the holiday defrost setting.

8.9 ON OFF FUNCTION (i1F or i2F = onF)

To switch the controller on and off.

8.10 DIGITAL INPUTS POLARITY

The digital input polarity depends on the "i1P" parameter.

i1P or i2P =CL: the input is activated by closing the contact.

i1P or i2P=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-WEB500/3000/3000.

10. X-REP OUTPUT – OPTIONAL

As optional, an X-REP can be connected to the instrument, trough the HOY KEY connector. The X-REP output **EXCLUDES** the serial connection.

To connect the X-REP to the instrument the

following connectors must be used CAB-

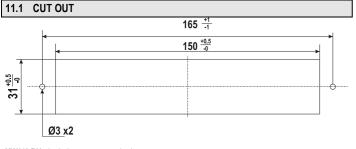
51F(1m), CAB-52F(2m), CAB-55F(5m),



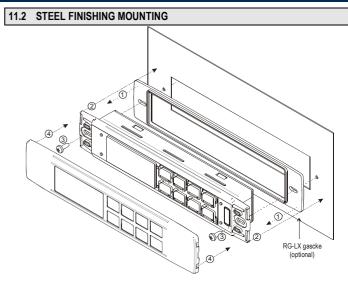
1. INSTALLATION AND MOUNTING

The controller shall be mounted on vertical panel, in a 150x31 mm hole, and fixed using two screws \oslash 3 x 2mm (only for XW60LR).

XW60LR: to obtain an IP65 protection grade use the front panel rubber gasket (mod. RG-L). 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 the air circulate by the cooling holes.



 $\ensuremath{\textbf{XW60LRH}}\xspace$: the holes are not required



12. ELECTRICAL CONNECTIONS

The instruments are provided with screw terminal block to connect cables with a cross section up to 2,5 mm² for the digital and analogue inputs. Relays and power supply have a Faston connection (6,3mm). Heat-resistant cables have to be used. 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. **N.B.** Maximum current allowed for all the loads is 20A.

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.
- When the controller is <u>ON</u>, 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. <u>Turn OFF</u> the instrument remove the "Hot Key", then turn it ON again.

NOTE: the "Err" message is displayed for failed programming. In this case push again A key if you want to restart the upload again or remove the "Hot key" to abort the operation.

13.2 HOW TO PROGRAM AN INSTRUMENT USING A HOT KEY (DOWNLOAD)

Turn OFF the instrument.

- 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".
- 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"
"P2"	Second probe failure	Defrost end is timed
"P3"	Third 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 and fans restarts
"EA"	External alarm	Output unchanged.
"CA"	Serious external alarm (i1F=bAL)	All outputs OFF.
"rtc"	Real time clock alarm	Alarm output ON; Other outputs unchanged; Defrosts according to par. "IdF" Set real time clock has to be set
rtF	Real time clock board failure	Alarm output ON; Other outputs unchanged; Defrosts according to par. "IdF" Contact the service

14.1 ALARM RECOVERY

Probe alarms P1", "P2", "P3" start some seconds after the fault in the related probe; they automatically stop some seconds after the probe restarts normal operation. Check connections before replacing the probe.

Temperature alarms "HA", "LA" "HA2" and "LA2" automatically stop as soon as the temperature returns to normal values.

Alarms "EA" and "CA" (with i1F=bAL) recover as soon as the digital input is disabled. Real time clock alarm rtC, it stops as soon as the correct hour and day are set.

Installing and operating instructions

EMERSO

Real time clock alarm $\ensuremath{\text{rtF}}$, the clock board has to be replaced. Contact the service.

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
15.	TECHNICAL DATA
Housiı	ng: self extinguishing ABS.
Case:	facia 38x185 mm; depth 40mm
Mount	ing : panel mounting in a 150x31 mm panel cut-out with
	Only for XW60LR: two screws. Ø3x2mm, distance between holes 165mm
	tion: IP20;
	I protection: IP65 Only for XW60LR with frontal gasket mod RG-L or RG-LX.
	ctions: Screw terminal block ≤1 mm ² heat-resistant wiring for very low voltage, Screw terminal
block ≤	2,5 mm ² heat-resistant wiring for low voltage (110 or 230Vac).
	supply: 230Vac or. 110Vac ± 10%, 50/60Hz.
Power	absorption: 7VA max.
	y: 3 digits, red LED, 14,2 mm high.
	: Up to 4 NTC or PTC probes.
	inputs: free of voltage
	outputs: Total current on loads MAX. 20A
	ompressor: relay SPST 20(8) A, 250Vac
	ght: relay SPST 5A, 250Vac
	ans: relay SPST 5 A, 250Vac
	efrost: relay SPST 8(3) A, 250Vac
	output : buzzer (optional)
	output : TTL as alternate to X-REP output output : optional as alternate to TTL serial output
	unication protocol: Modbus - RTU
	toring: on the non-volatile memory (EEPROM).
	al clock back-up: 24 hours (only for model with RTC)
	f action: 1B; Pollution grade: normal; Software class: A.;
	oltage Category: II
	ting temperature: 0+60 °C; Storage temperature: -30+85 °C.
	/e humidity: 20÷85% (no condensina)
	ring and regulation range: NTC probe: -40+110°C (-40+230°F);
	PTC probe: -50+150°C (-58+302°F)
Resolu	ution: 0,1 °C or 1 °F (selectable); Accuracy (ambient temp. 25°C): ±0,7 °C ±1 digit
16.	CONNECTIONS
16/	8)A 5A 5A MAX 8(3)A Hot Key / TTL

16(8)A	1 5	A 5/	A M/	^ب X A ۲	8(3)		Hot	Key / T	TL	
1	2 3	4	5	6	7	89	10	11 1	<u>2 13</u>	14 15
COMP-		FAN -	Line -	DEF	NC	Supply 230V~	<u>b</u> s	R M m m m m	₽ ₽ ₽	D.1.2

Supply: 120Vac: connect to terminals 8-9. NOTE: on models with X-REP option, connect the X-REP to the HOT KEY receptacle

Set Set point rtc* Real time clock m Hy Differential LS Minimum set point US Maximum set point Ot P1 probe calibratic P2P P2 probe calibratic P3P P3 probe calibratic OG P3 probe calibratic OdS Outputs delay at s AC Anti-short cycle de AC1 Second compress rtr P1-P2 percentage CCt Continuous cycle de CCS Set point for contil COF Compressor OFF CF Temperature mea rES Resolution Lod Probe displayed rEd2 X-REP display dLy Display temperatu dtr Pafrost terminatio IdF Defrost type dFP Probe selection fo dtd Displaying during dAd MAX display delay Fdt Displaying during dAd MAX	Vame Vame Vame Vame Vame Vame Value	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	°C/°F -5.0 - 2.0 -50.0 110 0.0 Y 0.0 N 0 0 1 5 100 0.0 - 5 15 30	Level Pr1 Pr2 Pr2 Pr1 Pr2 Pr2 Pr2 Pr2 Pr2 Pr2 Pr2 Pr2
Set Set point rtc* Real time clock m Hy Differential LS Minimum set point US Maximum set point Ot P1 probe calibratic P2P P2 probe presence OE P2 probe calibratic P3P P3 probe calibratic OdS Outputs delay at s AC Anti-short cycle de AC1 Second compresson CC1 Continuous cycle CC3 Set point for contil CO6 Compresson OFF CF Temperature mark dT2 Probe displayed rES Resolution Lod Probe displayed rES Resolution Lod Probe selection fo dtF Defrost type dFP Probe selection fo dtF Defrost delay after de Fac Pan of time with of Fac Pan of time with of GF Fan off time with of GHC Probe selection fo dtF Differential for auxil GH2 Pr	enu t t n n e n n e n n e n n t t t t t t t	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	-5.0 -50.0 -50.0 110 0.0 Y 0.0 N 0 0 0 1 5 100 0.0 -5 15 30	Pr1 Pr2 Pr1 Pr2 Pr1 Pr2 Pr1 Pr2 Pr2
rtc* Real time clock m Hy Differential LS Minimum set point US Maximum set point Ot P1 probe calibratic P2P P2 probe presence OB P3 probe presence OdS Outputs delay at stand AC Anti-short cycle deditation OdS Outputs delay at stand AC Anti-short cycle deditation CCC Continuous cycle (CCCS Set point for contri COC Compressor ONT CF Temperature meaintreature meaintreature meaintreature meaintreature rEG Resolution Lod Probe displayed rEd2 X.REP display dLy Display temperature dTF Probe selection for dT Defrost type dFP Probe selection for dAM MAX display delay after fuel Defrost termination for Att defrost delay after dAd MAX display delay after fuel Defrost termination for SA Start defrost after <t< td=""><td>t nn h h h h h h h h h h h h h h h h h h</td><td>$\begin{array}{c} (-55,0^{\circ}C+SET) \\ (SET+150,0^{\circ}C) \\ (-12,0^{\circ}C+12,0^{\circ}C) \\ n-Y \\ (-12,0^{\circ}C+12,0^{\circ}C) \\ n-Y \\ (-12,0^{\circ}C+12,0^{\circ}C) \\ 0+255 \\ (min.) \\ 0+255 \\ (min.) \\ 0+255 \\ (min.) \\ 0+255 \\ (sec.) \\ 0+100 \\ (100=P1, 0=P2) \\ 0+24H0 \\ (144) \\ (-55.0^{\circ}C+150,0^{\circ}C) \\ 0+255 \\ (min.) \\ 0+255 \\ (m$</td><td>2.0 -50.0 110 0.0 Y 0.0 n 0 0 1 5 100 0.0 -5 15 30</td><td>Pr1 Pr2 Pr1 Pr2 Pr2</td></t<>	t nn h h h h h h h h h h h h h h h h h h	$\begin{array}{c} (-55,0^{\circ}C+SET) \\ (SET+150,0^{\circ}C) \\ (-12,0^{\circ}C+12,0^{\circ}C) \\ n-Y \\ (-12,0^{\circ}C+12,0^{\circ}C) \\ n-Y \\ (-12,0^{\circ}C+12,0^{\circ}C) \\ 0+255 \\ (min.) \\ 0+255 \\ (min.) \\ 0+255 \\ (min.) \\ 0+255 \\ (sec.) \\ 0+100 \\ (100=P1, 0=P2) \\ 0+24H0 \\ (144) \\ (-55.0^{\circ}C+150,0^{\circ}C) \\ 0+255 \\ (min.) \\ 0+255 \\ (m$	2.0 -50.0 110 0.0 Y 0.0 n 0 0 1 5 100 0.0 -5 15 30	Pr1 Pr2 Pr1 Pr2
LS Minimum set poin US Maximum set poin Ot P1 probe calibratic P2P P2 probe calibratic P3P P3 probe presenc O3 P3 probe calibratic P3P P3 probe calibratic OdS Outputs delay at s AC Anti-short cycle de CCS Set point for contic COn Compressor ONF CF Temperature mea rES Resolution Lod Probe displayed rEd ² X-REP display dLy Display temperatu dtr P1-P2 percentage EdF* Kind of interval for tdF Defrost type dFP Probe selection for dtE Defrost type dFD Draining time dPo First defrost delay after Fan Operating more rEG Fan off time with of FoF Fan off time with of FoF Fan off time with of FAP Probe selection for ACH Kind of action for SAA Set Point for auxil SHy Differential for auxil SHy Differential for auxil AP2 Probe selection for ACH Kind of action for SAA Set Point for auxil SHy Differential for auxil AP2 Probe selection for ACH Kind of action for SAA Set Point for auxil SHy Differential for auxil AP2 Probe selection for ACH Kind of action for SAA Set Point for auxil SHy Differential for auxil AP2 Probe selection for ACH Kind of action for SAA Set Point for auxil SHy Differential for auxil AP2 Probe selection for ACH Kind of action for SAA Set Point for auxil SH2 Differential for auxil AP2 Probe for temperature alarms ALL Minimum tempera AC2 Condenser for hig AA2 Delay of cond. tem Compr. off fi bLL temperature alarms AC2 temperature alarms AC3 Third relay configu- AC4 tarm relay polarii 11P Digital input polarii 11P Digi	t t t t t t t t t t t t t t t t t t t	$\begin{array}{c} (-55,0^{\circ}C+SET) \\ (SET+150,0^{\circ}C) \\ (-12,0^{\circ}C+12,0^{\circ}C) \\ n-Y \\ (-12,0^{\circ}C+12,0^{\circ}C) \\ n-Y \\ (-12,0^{\circ}C+12,0^{\circ}C) \\ 0+255 \\ (min.) \\ 0+255 \\ (min.) \\ 0+255 \\ (min.) \\ 0+255 \\ (sec.) \\ 0+100 \\ (100=P1, 0=P2) \\ 0+24H0 \\ (144) \\ (-55.0^{\circ}C+150,0^{\circ}C) \\ 0+255 \\ (min.) \\ 0+255 \\ (m$	-50.0 110 0.0 Y 0.0 n 0 0 0 1 5 100 0.0 -5 15 30	Pr2 Pr2 Pr1 Pr2
US Maximum set poir 0t P1 probe calibratic P2P P2 probe presenc. 03 P3 probe calibratic OdS Outputs delay at stand AC1 Second compress rtf P1-P2 percentage Ct Continuous cycle AC1 Second compress rtf P1-P2 percentage Ct Continuous cycle CCC Continuous cycle CCC Continuous cycle CCT Compressor ON ti COF Temperature meaintic rEd Resolution Lud Piobe displayed rEd X-REP display dLy Display temperature dTd Defrost termination dLF Defrost termination dLF Defrost delay after Fot	t t t t t t t t t t t t t t t t t t t	$\begin{array}{c} (\text{SET} + 150,0^\circ\text{C}) \\ \hline (-12,0^\circ\text{C} + 12,0^\circ\text{C}) \\ \hline n - Y \\ \hline (-12,0^\circ\text{C} + 12,0^\circ\text{C}) \\ \hline n - Y \\ \hline (-12,0^\circ\text{C} + 12,0^\circ\text{C}) \\ \hline 0 + 255 (\text{min.}) \\ \hline 0 + 255 (\text{min.}) \\ \hline 0 + 50 (\text{min.}) \\ \hline 0 + 255 (\text{sec.}) \\ \hline 0 + 100 (100\text{-P1}, 0\text{-P2}) \\ \hline 0 + 24H0(144) \\ \hline (-55.0^\circ\text{C} + 150,0^\circ\text{C}) \\ \hline 0 + 255 (\text{min.}) \\ \hline 0 + 25 (\text{min.}$	110 0.0 Y 0.0 n 0 0 1 5 100 0.0 -5 15 30	Pr2 Pr1 Pr2
Ot P1 probe calibratic P2 P2 probe presence OE P2 probe calibratic P3P P3 probe calibratic OG Q3 probe calibratic Od Outputs delay at s AC Anti-short cycle de AC Anti-short cycle de AC Anti-short cycle de AC Second compress rtr P1-P2 percentage CCC Set point for contil COF Compressor ON ti COF Compressor OFF CF Temperature mea rES Resolution Lod Probe displayed rES Resolution Lod Probe displayed rES Resolution Lod Probe selection fo dtf Defrost terminatio dtf Interval between di MAF Maximum) lengthere dtf Defrost termination dtf Defrost termination dtf Darining time dPO <t< td=""><td>n n n a n tart up lay or start delay for regulation luration nuous cycle me with faulty probe time with faulty probe time with faulty probe surement unit re delay for display defrost defrost temperature efrost cycles</td><td>$\begin{array}{c} (-12,0^{\circ}C \div 12,0^{\circ}C) \\ n - Y \\ (-12,0^{\circ}C \div 12,0^{\circ}C) \\ n - Y \\ (-12,0^{\circ}C \div 12,0^{\circ}C) \\ 0 \div 255 (min.) \\ 0 \div 255 (min.) \\ 0 \div 255 (sec.) \\ 0 \div 100 (100=P1, 0=P2) \\ 0 \div 24H0(144) \\ (-55.0^{\circ}C \div 150,0^{\circ}C) \\ 0 \div 255 (min.) \\ 0 \div$</td><td>0.0 Y 0.0 n 0 0 1 5 100 0.0 -5 15 30</td><td>Pr1 Pr2 Pr2</td></t<>	n n n a n tart up lay or start delay for regulation luration nuous cycle me with faulty probe time with faulty probe time with faulty probe surement unit re delay for display defrost defrost temperature efrost cycles	$\begin{array}{c} (-12,0^{\circ}C \div 12,0^{\circ}C) \\ n - Y \\ (-12,0^{\circ}C \div 12,0^{\circ}C) \\ n - Y \\ (-12,0^{\circ}C \div 12,0^{\circ}C) \\ 0 \div 255 (min.) \\ 0 \div 255 (min.) \\ 0 \div 255 (sec.) \\ 0 \div 100 (100=P1, 0=P2) \\ 0 \div 24H0(144) \\ (-55.0^{\circ}C \div 150,0^{\circ}C) \\ 0 \div 255 (min.) \\ 0 \div$	0.0 Y 0.0 n 0 0 1 5 100 0.0 -5 15 30	Pr1 Pr2
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OdS Outputs delay at s AC Anti-short cycle de AC1 Second compressor rtr P1-P2 percentage CCC Set point for contil COn Compressor ON ti CDF Compressor OFF FF Resolution Lod Probe displayed rES Resolution Lod Probe displayed rEZ X-REP display dLy Display temperatu dtr P1-P2 percentage EGF* Kind of interval for dtF Defrost terminatio dtdf Defrost terminatio dtdf Displaying during ddd MAX display delay Fdt Displaying during dAd MAX display delay affer de For Fan operating mo Fdt Differential of tac activation of fans FSt Fan ont time with of FAP For Fan off time with of FAP Probe selection fo Sdd Auxiliary relay ope ACH Kind	tart up lay or start delay for regulation luration nuous cycle me with faulty probe surement unit re delay for display defrost c defrost termination t temperature efrost cycles	0 + 255 (min.) 0 + 50 (min.) 0 + 255 (sec.) 0 + 100 (100=P1, 0=P2) 0 + 24H0(144) (-55.0°C + 150,0°C) 0 + 255 (min.) 0 + 255 (min.) °C - °F dE - in P1 - P2 - P3 - P4 - SEt - dtr	0 1 5 100 0.0 -5 15 30	Pr2 Pr1 Pr2 Pr2 Pr2 Pr2
AC Anti-short cycle de AC1 Second compress rtr P1-P2 percentage CCS Set point for conti CCS Set point for conti CCG Compressor OFF CF Temperature mea rES Resolution Lod Probe displayed rEd X-REP display dLy Display temperatu dtr P1-P2 percentage EdF* Kind of interval for dtF Defrost type dfP Probe selection fo dtE Defrost terminatio ldF Interval between d MdF (Maximum) length dAd MAX display delay fdd Displaying during dAd MAX display delay fdf Displaying during dAd MAX display delay Fdt Darioning time dFd Defrost delay after fdr Displaying during dAd MAX display delay For Fan off time with of FAT Fan top temperature <td>lay or start delay for regulation luration nuous cycle me with faulty probe time with faulty probe surement unit re delay for display defrost c defrost termination n temperature efrost cycles</td> <td>0 + 50 (min.) 0 + 255 (sec.) 0 + 100 (100=P1, 0=P2) 0 + 24H0(144) (-55.0°C + 150,0°C) 0 + 255 (min.) 0 + 255 (min.) °C - °F dE - in P1 - P2 - P3 - P4 - SEt - dtr</td> <td>1 5 100 0.0 -5 15 30</td> <td>Pr1 Pr2 Pr2 Pr2</td>	lay or start delay for regulation luration nuous cycle me with faulty probe time with faulty probe surement unit re delay for display defrost c defrost termination n temperature efrost cycles	0 + 50 (min.) 0 + 255 (sec.) 0 + 100 (100=P1, 0=P2) 0 + 24H0(144) (-55.0°C + 150,0°C) 0 + 255 (min.) 0 + 255 (min.) °C - °F dE - in P1 - P2 - P3 - P4 - SEt - dtr	1 5 100 0.0 -5 15 30	Pr1 Pr2 Pr2 Pr2
AC1 Second compress rtr P1-P2 percentage CCt Continuous cycle e CCS Set point for contin COn Compressor ON ti COF Compressor OFF CF Temperature mea rES Resolution Lod Probe displayed rEd ² X-REP display dLy Display temperatu dtr P1-P2 percentage EdF* Kind of interval for tdF Defrost type dFP Probe selection fo dFD Probe selection for dFD Defrost type dFF Maximum) length dSd Start defrost delay dFd Displaying during dFd Displaying during dFd Displaying during dFd Displaying during dFd Displaying during dFd Displaying during fFd Fan delay after dAF Defrost terminatio dFd Displaying during fFd Fan delay after de Frt Differential of te activation of fans FSt Fan stop tempera Fon Fan of time with of FAP Probe selection for ACH Kind of action for SAA Set Point for auxiil SHy Differential for tem ArP Probe selection for SAA Set Point for auxiil SHy Differential for tem ALC Temperat. alarms ALL Minimum tempera AL2 Condenser for hig AH2 Differ for condense AL2 Condenser for hig AL2 temperature alarm Compr. off fi bLL temperature alarm Compr. off fi Digital input polarii 11F Digital input for tor AC3 Third relay configu	or start delay for regulation luration nuous cycle me with faulty probe surement unit re delay for display defrost c defrost termination n temperature efrost cycles	0 + 255 (sec.) 0 + 100 (100=P1, 0=P2) 0 ÷ 24H0(144) (-55.0°C + 150.0°C) 0 ÷ 255 (min.) 0 ÷ 255 (min.) °C - °F dE - in P1 - P2 - P3 - P4 - SEt - dtr	5 100 0.0 -5 15 30	Pr2 Pr2 Pr2
rtr P1-P2 percentage CCt Continuous cycle (CCS Set point for contii COn COP Compressor OFF CF Temperature mea rES Resolution Lod Probe displayed rEd* X-REP display dLy Display temperatu dtr P1-P2 percentage EdF* Kind of interval for tdF Defrost type dFP Probe selection for dtF Defrost type dfD Defrost terminatio ddF Interval between d MdF (Maximum) length dSd Start defrost delay dFd Draining time dPo First defrost delay after Fnc Fan operating mo Fnd Fan off time with of FoF Fan off time with of FoF Fan off time with of FAP Probe selection for ACH Kind of action for SAA Set Point for auxill SHy Differential for auxill SHy <t< td=""><td>for regulation luration uous cycle me with faulty probe surement unit re delay for display defrost c defrost termination n temperature efrost cycles</td><td>0 + 100 (100=P1, 0=P2) 0 ÷ 24H0(144) (-55.0°C + 150,0°C) 0 ÷ 255 (min.) 0 ÷ 255 (min.) °C - °F dE - in P1 - P2 - P3 - P4 - SEt - dtr</td><td>100 0.0 -5 15 30</td><td>Pr2 Pr2</td></t<>	for regulation luration uous cycle me with faulty probe surement unit re delay for display defrost c defrost termination n temperature efrost cycles	0 + 100 (100=P1, 0=P2) 0 ÷ 24H0(144) (-55.0°C + 150,0°C) 0 ÷ 255 (min.) 0 ÷ 255 (min.) °C - °F dE - in P1 - P2 - P3 - P4 - SEt - dtr	100 0.0 -5 15 30	Pr2 Pr2
CCt Continuous cycle d CCS Set point for conti COn Compressor ON Fi CF Temperature mea rES Resolution Lod Probe displayed rEd X-REP display dLy Display temperatu dtr P1-P2 percentage EdF* Kind of interval for tdF Defrost type dFP Probe selection fo dtE Defrost terminatio df Interval between d MdF (Maximum) length dSd Start defrost delay dFd Displaying during dAd MAX display delay dFd Displaying during dAd MAX display delay dFd Displaying during dAd MAX display delay aff Defrost terminatio rfot Fan off time with o Fot Differential of te activation of fans FSt Fan stop temperat Fon Fan off time with o Fof Fan off time with o Fof Fan off time with o ACH Kind of action for SAA Set Point for auxill SHy Differential for aux ArP Probe selection for ALP Alarm probe selection for ALC Temperature alarms ALU MAXIMUM temperature ALC Temperature alarms ALL Minimum temperature AC2 Condenser for hig AA2 Delay of cond. tem Compr. off fi bLL temperature alarm Compr. off fi bl L temperature alarm Compr. off fi Compr. off	turation nuous cycle me with faulty probe surement unit re delay for display defrost r defrost termination t temperature efrost cycles	0 + 24H0(144) (-55.0°C + 150.0°C) 0 + 255 (min.) 0 + 255 (min.) °C - °F dE - in P1 - P2 - P3 - P4 - SEt - dtr	0.0 -5 15 30	Pr2
CCS Set point for contii COn Compressor ON ti COF Compressor ON ti COF Compressor OFF F Femperature mea rES Resolution Lod Probe displayed rE2 X-REP display dLy Display temperature dtr P1-P2 percentage EGF* Kind of interval for dfP Probe selection fo dfE Defrost terminatio dfG Displaying during dAd MAX display delay Fdt Draining time dPo First defrost after dAF Defrost temperating mo Fdt Defrost delay after de activation of fans FSt Fan operating mo Fod FoF Fan off time with of FAP Probe selection for ACH Kind of action for SAA Set Point for auxil SHP Differential for auxil SHP Probe selection for SAA Set Point for auxil SHP	nuous cycle me with faulty probe time with faulty probe surement unit re delay for display defrost r defrost termination t temperature efrost cycles	(-55.0°C + 150,0°C) 0 + 255 (min.) 0 + 255 (min.) °C - °F dE - in P1 - P2 - P3 - P4 - SEt - dtr	-5 15 30	
COn Compressor ON ti COF Compressor OFF CF Temperature mea rES Resolution Lod Probe displayed rEd² X-REP display dLy Display temperatu dtr P1-P2 percentage EdF* Kind of interval for dLF Defrost type dFP Probe selection fo dtE Defrost terminatio ldF Interval between d MdF Interval between d MdF Displaying during dAd MAX display delay Fdt Draining time dPo First defrost after dFD Displaying during dAd MAX display delay Fdt Draining time dPo First defrost after dFD Ean off time with of For Fan on time with of FOF Fan off time with of FAP Probe selection fo ACH Kind of action for SAS Set Point for auxil AHP Probe selection f	me with faulty probe time with faulty probe surement unit re delay for display defrost r defrost termination t temperature efrost cycles	0 ÷ 255 (min.) 0 ÷ 255 (min.) °C - °F dE - in P1 - P2 - P3 - P4 - SEt - dtr	15 30	112
COF Compressor OFF CF Temperature meases rES Resolution Lod Probe displayed rEd2 X.REP display dLy Display temperature dtr P1-P2 percentage EdF* Kind of interval for tdF Defrost type dFP Probe selection fo dtE Defrost terminatio ldF Interval between d MdF (Maximum) length dSd Start defrost delay dFd Displaying during dAd MAX display delay Fdt Draining time dFd Defrost delay after dFa Defrost delay after fer Differential of tra activation of fans FSt For Fan oft time with of FAP Probe selection fo ACH Kind of action for SAA Set Point for auxili SHY Differential for tem ArP Probe selection fo Sdd Auxiliary relay ope ALL Mi	time with faulty probe surement unit re delay for display defrost r defrost termination t femperature efrost cycles	0 ÷ 255 (min.) °C - °F dE – in P1 - P2 - P3 - P4 - SEt – dtr	30	Pr2
rES Resolution Lod Probe displayed rEd² X-REP display dLy Display temperatu dtr P1-P2 percentage EdF* Kind of interval for tdF Defrost type dFP Probe selection fo dt Defrost terminatio dfF Interval between d MdF (Maximum) length dSd Start defrost delay dFd Displaying during dAd MAX display delay dFd Defrost defrost after dAF Defrost delay after de Fct Differential of ta activation of fans FSt F3T Fan stop tempera Fon Fan on time with of FAP Probe selection for ACH Kind of action for auxil SHy Differential for auxil SHy Differential for auxil SHy Differential for tempera ALC Temperature alarms ALL Minimum tempera ALL Temperature alarms	e delay for display defrost defrost termination h temperature efrost cycles	dE – in P1 - P2 - P3 - P4 - SEt – dtr		Pr2
Lod Probe displayed rEd ² X-REP display dLy Display temperatu dtr P1-P2 percentage Edf* Kind of interval for tdF Probe selection fo dtf Defrost type dtF Probe selection fo dtf Interval between di Mdf (Maximum) length dSd Start defrost delay dFd Displaying during dAd MAX display delay Fdt Darining time dPo First defrost after dFr Fan operating mo Fnc Fan operating mo Fat Parloa beslection fo activation of fans FSt Fan off time with of FAP For Fan off time with of FAP Probe selection fo Sdd Act Kind of action for r ACH Kind of action for r ALA Arm probe select ALC Temperatu alarms ALU Maximunu temperatu	for display defrost defrost termination temperature efrost cycles	P1 - P2 - P3 - P4 - SEt – dtr	°C	Pr2
 rEd² X-REP display dLy Display temperatu dtr P1-P2 percentage EdF* Kind of interval for dfP Probe selection for ddF Defrost type dfP Probe selection for ddF Defrost termination IdF Interval between d MdF (Maximum) length dfd Displaying during dAd MAX display delay Fdt Draining time dPo First defrost after dAF Defrost delay after Fnc Fan operating mo Fnd Fan delay after defrost delay after Fon Fan on time with of FAP Probe selection for ACH Kind of action for . SAA Set Point for auxil SHP Differential for auxil ArP Probe selection for Sdd Auxiliary relay ope ALP Alarm probe selection for Sdd Auxiliary relay ope ALL Minimum temperature alarm AdA Temperature alarm AdA Condenser for hig AH2 Differential for temperating and the probe for comperating and temperature alarm AdA Delay of temperating and temperature alarm AdA Delay of temperating and temperature alarm AdA Differ for condems Ad2 Condenser for hig Ad4 Alarm relay disabilition and temperature alarm Compr. off for bLL temperature alarm Condenser for hig AA1 Trelay disabilition alarm Ad2 Condenser for hig Ad2 Infer for condems Ad2 Delay of cond. temperature alarm Compr. off for blL temperature alarm Compr. off for bla alarm relay polari fl Digital input polarit flif Digital input 1 con 	for display defrost defrost termination temperature efrost cycles		dE	Pr1
dLy Display temperature dtr P1-P2 percentage EdF* Kind of interval for tdF Defrost type dfFP Probe selection for dtE Defrost terminatio ddF Interval between d MdF (Maximum) length dSd Start defrost delay dFD Probe selection for dAd MAX display delay dHD Displaying during dAM MAX display delay Fdt Draining time dPO First defrost after dAM MAX display delay after Fnc Fan delay after defrost after for Fan delay after defrost delay after defrost after for Fan stop tempera For Fan off time with of fans For Fan off time with of fans FAP Probe selection for SAA Set Point for auxill SHP Differential for auxill SHP Differential for auxill SHP Differential for tempera	for display defrost defrost termination temperature efrost cycles		P1	Pr2
dtr P1-P2 percentage EdF* Kind of interval for tdF Defrost type dFP Probe selection for dtE Defrost type dtF Probe selection for dtE Defrost type dtF Defrost terminatio ldF Interval between d MdF (Maximum) length dSd Start defrost delay dFd Displaying during dAd MAX display delay Fdt Draining time dPo First defrost delay after Fnc Fan operating mo for Fan an ota the with of For Fan stop tempera For Fan off time with of FoF Fan off time with of FoF Fan off time with of FAP Probe selection for SAA Set Point for auxill SHy Differential or tar AP Probe selection for SAA Set Point for auxill SHy Differential or tem ALC Temperatualarms ALL </td <td>for display defrost defrost termination temperature efrost cycles</td> <td>P1 - P2 - P3 - P4 - SEt - dtr</td> <td>P1</td> <td>Pr2</td>	for display defrost defrost termination temperature efrost cycles	P1 - P2 - P3 - P4 - SEt - dtr	P1	Pr2
EdF* Kind of interval for tdF Defrost type dFP Probe selection fo dtE Defrost type dfF Probe selection fo dtE Defrost terminatio ldF Interval between d MdF (Maximum) length dSd Start defrost delay dFd Displaying during dAd MAX display delay Fdt Draining time dPo First defrost after dAF Defrost delay after Fric Fan operating mo Fnd Fan delay after de Fct Differential of ta activation of fans FST Fan stop tempera Fon Fan off time with o FoF Fan off time with o FAP Probe selection for ACH Kind of action for SAA Set Point for auxil SHy Differential for aux ArP Probe selection for ACH Kind of action for SAA Set Point for auxil SHy Differential for aux ArP Probe selection for ALC Temperat. alarms ALU MAXIMUM tempera AL2 Condenser for low AU2 Condenser tempera the Alarm relay disabil oA3 Third relay configu AP Alarm relay polari 11P Digital input polarit 11F Digital input polarit 11F Digital input polarit	defrost defrost termination temperature efrost cycles	0 ÷ 20.0min (ris. 10 sec.)	0.0	Pr2 Pr2
tdF Defrost type dFP Probe selection fo dtE Defrost termination ldF Interval between d MdF (Maximum) length dSd Start defrost delay dFd Displaying during dAd MAX display delay Fdt Draining time dPo First defrost after dAF Defrost delay after dFc First defrost after dAF Defrost delay after de activation of fans FSt FST Fan stop tempera Fon Fan oft time with of FAP Probe selection for ACH Kind of action for SAA Set Point for auxil SHy Differential for aux AP Probe selection fo Sdd Auxiliary relay ope ALL Marm probe selection fo ALP Alarm probe selection fo ALP Alarm probe selection fo ALL MaxIMUM tempera ALL Marm probe selection for ALL Marm probe selection for	r defrost termination n temperature efrost cycles	1 ÷ 99 rtc÷in	50 in	Pr2 Pr2
dFP Probe selection for dtE Defrost terminatio ldF Interval between d MdF (Maximum) length dSd Start defrost delay dFd Displaying during dAd MAX display delay Fdt Draining time dPo First defrost after dAF Defrost delay aftei Fnc Fan operating mo Fnd Fan delay aftei Fnc Fan operating mo Fnd Fan stop tempera For Fan off time with of FoF Fan off time with of FAP Probe selection fo ACH Kind of action for . SAA Set Point for auxil ArP Probe selection fo ALD Auxiliary relay ope ALP Alarm probe selection fo Sdd Auxiliary relay ope ALL Minimum tempera ALL Minimum tempera ALL Minimum tempera AL2 Condenser for low AU2 Condenser for low AU2	n temperature efrost cycles	EL – in	EL	Pr1
dtE Defrost terminatio IdF Interval between d MdF (Maximum) length dSd Start defrost delay dFd Displaying during dAd MAX display delay Fdt Draining time dPo First defrost after dAF Defrost delay after dFnc Fan operating mo Fnd Fan delay after de Fct Differential of ter activation of fans FSt Fon Fan oft time with of FOF Fan off time with of FAP Probe selection for ACH Kind of action for SAA Set Point for auxil ArP Probe selection for Sdd Auxiliary relay ope ALD Alarm probe selection for Sdd Auxiliary relay ope ALL Minimum temperature alarms ALU MAXIMUM tempe ALL Differential for temperature alarms Ad2 Condenser for hig AH2 Condenser for hig AL2 Condenser for hig	n temperature efrost cycles	nP - P1 - P2 – P3 - P4	P2	Pr2
MdF (Maximum) length dSd Start defrost delay dFd Displaying during GAd MAX display delay Fdt Draining time dPo First defrost after dAF Defrost delay after dFc Differential of te activation of fans FSt Fan Start defrost of the with of For Fan off time with of FAP Probe selection for ACH Kind of action for auxil SHy Differential for tem ALC Temperature alarms ALU MaxIMUM temperature ALL Minimum temperature AP2 Probe for temperature alarms AQ2 Condenser for low AQ2 Condenser for low AQ2 <td< td=""><td></td><td>(-55.0°C ÷ 50.0°C)</td><td>8.0</td><td>Pr1</td></td<>		(-55.0°C ÷ 50.0°C)	8.0	Pr1
dSd Start defrost delay dFd Displaying during dAd MAX display delay Fdt Draining time dPo First defrost after dAF Defrost delay after dAF Defrost delay after dAF Defrost delay after dFc Differential of ter activation of fans FSt FST Fan stop tempera Fon Fan ontime with of FAP Probe selection for ACH Kind of action for aux ACH Kind of action for aux ACH Acing roles allow of temperating one ALL Marm probe selection for Sdd Auxiliary relay ope ALL Marm probe selection for Sdd Auxiliary relay ope ALL Marm probe selection for Sdd Auxiliary relay ope ALL Marm probe selection for ALD Alarm probe selection for ALU MAXIMUM temper ALL Maximum temperating alarm ALU Maximum temperating alarm AQ2	for defrect	0 ÷ 120 (ore)	6	Pr1
dFd Displaying during dAd MAX display delay Fdt Draining time dPo First defrost after dAF Defrost delay after Fnc Fan operating mo Fnd Fan delay after dFt Differential of tr activation of fans For Fan off time with of For Fan off time with of FAP Probe selection for ACH Kind of action for . SAA Set Point for auxil SHP Differential for auxil AP Probe selection fo ALC Temperat. alarms ALU MAXIMUM temperature ALL Minimum temperation ALL Differential for temperat. AP2 Probe for temperat. AD Delay of temperat. AP2 Probe for temperat. AD2 Condenser for low AD2 Delay of cond. tem Compr. off MA2 Delay of cond. tem Compr. off AD2 Delay of cond.		0 ÷ 255 (min.)	30	Pr1
 dAd MAX display delay Fdt Draining time dPo First defrost after dAF Defrost delay aftei Fnc Fan operating mo Fnd Fan delay aftei fac Fan stop tempera FSt Fan stop tempera Fon Fan off time with of FAP Probe selection for ACH Kind of action for auxili SHy Differential for auxili ALL Minimum tempera ALL Minimum tempera ALL Minimum tempera AL2 Condenser for hig AH2 Differential for temperat AL2 Condenser for hig AH2 Differential after temperature alarm Compr. off fi bLL temperature alarm temperature alarm temperature alarm temperature alarm temperature alarm AA2 Delay of cond. temperature alarm temperature alarm		0 ÷ 255 (min.)	0	Pr2
Fdt Draining time dPo First defrost after dAF Defrost delay after Fnc Fan delay after de Fct Differential of te activation of fans FSt Fan stop tempera Fon Fan on time with of FoF Fan of time with of FAP Probe selection for ACH Kind of action for SAA Set Point for auxili SHY Differential for aux APP Probe selection for Sdd Auxiliary relay ope ALD Alarm probe select ALC Temperat. alarms ALL Minimum tempera ALL Minimum tempera ALL Differential for tem AAD Delay of temperat AL2 Condenser for low AU2 Delay of cond. tem		rt - it - SEt – dEF 0 ÷ 255 (min.)	it 30	Pr2 Pr2
 dPo First defrost after dAF Defrost delay after Fnc Fan operating mo Fnd Fan delay after de Fct Differential of tractivation of fans FSt Fan stop tempera Fon Fan on time with of Fon Fan off time with of FAP Probe selection for ACH Kind of action for. SAA Set Point for auxili SHy Differential or auxili ArP Probe selection for ACH Auxiliary relay ope ALP Alarm probe select ALL Minimum tempera ALL Minimum tempera ALL Minimum tempera ALL Minimum tempera AL2 Condenser for low AU2 Condenser for low AU2 Condenser for low AU2 Condenser for low AU2 Condenser tempera AL2 Differ. for condens Ad2 Delay of compr. off fi bLL temperature alarm Compr. off fi AC2 temperature alarm Compr. off fi BL1 temperature alarm Compr. off fi BL2 temperature alarm Compr. off fi BL3 Third relay configure AAP Alarm relay polari IIP Digital input polari IIP Digital input polari 	alter dell'ost	0 ÷ 255 (min.) 0 ÷ 255 (min.)	0	Pr2
dAF Defrost delay after Fnc Fan operating mo Fnc Fan operating mo Fnc Fan operating mo Fct Differential of teractivation of fans FSt Fan stop tempera Fon Fan on time with of FoF Pan off time with of FAP Probe selection for ACH Kind of action for auxil SHy Differential for auxil ALD Marm probe selection for ALL Maimy relay ope ALL MAXIMUM tempera ALL Maximum tempera AP2 Probe for temperature alarms AD Delay of temperature AP2 Probe for condenser for low AU2 Condenser for low AU2 Condenser tempera Compr. off f AC2 temperature alarm Compr. off f AC2 temperature alar	start-up	n – Y	n	Pr2
 Fnc Fan operating mo Fnd Fan delay after de Fot Differential of tet activation of fans FSt Fan stop tempera Fon Fan on time with of FoF Fan off time with of FAP Probe selection fo ACH Kind of action for auxili SHA Set Point for auxili SHY Differential for aux ArP Probe selection fo Sdd Auxiliary relay ope ALP Alarm probe selection fo Sdd Auxiliary relay ope ALP Alarm probe selection fo Sdd Auxiliary relay ope ALP Alarm probe selection fo Sdd Auxiliary relay ope ALL Minimum tempera ALL Minimum temperation ALL Minimum temperation AL2 Condenser for low AU2 Condenser for low AU2 Differ. for condensis Ad2 Delay of cond. tem Compr. off for bLL temperature alarm Compr. off for bLL temperature alarm AC3 Third relay configure AA7 Pirid relay configure AA8 Alarm relay disabilition A3 Third relay configure A09 Alarm relay polari 11P Digital input 1 con 		0 ÷ 24.0h; ris. 10min	0.0	Pr2
Fct Differential of teactivation of fans FSt Fan stop tempera Fon Fan of time with of FoF Fan off time with of FAP Probe selection for ACH Kind of action for SAA Set Point for auxili SHP Differential for auxili ArP Probe selection for Sdd Auxiliary relay ope ALP Alarm probe selection for ALD Alarm probe selection for ALU MAXIMUM tempe ALL Minimum temperation ALL Minimum temperation ALL Differential for temperation AD Delay of temperation AL2 Condenser for low AU2 Condenser for low AU2 Condenser tempera AL2 Delay of cond. tem Compr. off for MA2 Delay of cond. tem Compr. off for AC2 temperature alarm COmpr. off for MA2 Delay of cond. tem Compr. off for		C_n - O_n - C_Y – O_Y	o-n	Pr1
activation of fans FSt Fan stop tempera Fon Fan on time with of FoF Fan off time with of FAP Probe selection fo ACH Kind of action for. SAA Set Point for auxili SHy Differential for aux ArP Probe selection fo Sdd Auxiliary relay ope ALP Alarm probe selec ALC Temperat. alarms ALU MAXIMUM temperat. ALL Minimum temperat. ALL Minimum temperat. ALL Minimum temperat. ALL Temperature alarm ALD Delay of temperat. AL2 Condenser for low AU2 Condenser for low AU2 Condenser for low AU2 Condenser temperat. AC2 temperature alarm Compr. off fi AC2 temperature alarm tbA Alarm relay disabil oA3 Third relay configu. AOP Alarm relay polari 11P Digital input polari 11F Digital input 1 con		0 ÷ 255 (min.)	10	Pr1
FSt Fan stop tempera Fon Fan on time with o FoF Fan off time with o FAP Probe selection for ACH Kind of action for auxil SHy Differential for aux ArP Probe selection for Sdd Auxiliary relay ope ALP Alarm probe select ALC Temperat. alarms ALU MAXIMUM tempe ALL Minimum tempera ALL Minimum tempera ALL Temperature alarm ALU Temperature alarm ALU Delay of temperat AP2 Probe for temperat AP2 Probe for temperat AL2 Condenser for low AU2 Condenser for low AU2 Condenser for low AU2 Condenser temperat Compr. off f bLL temperature alarm Compr. off f AC2 temperature alarm temperature alarm Compr. off f AC2 temperature alarm Differ for condens AG2 Third relay configu AD3 Third relay configu AD4 Alarm relay polari 11P Digital input 1 con	mperature for forced		10	Pr2
Fon Fan on time with of FoF Fan off time with of FAP Probe selection fo ACH Kind of action for SAA Set Point for auxili SHy Differential for auxiliant SHP Probe selection fo Sdd Auxiliary relay ope ALP Alarm probe selection fo Sdd Auxiliary relay ope ALC Temperat. alarms ALU MAXIMUM tempe ALL Minimum temperat ALL Minimum temperat ALL Differential for tem AL2 Condenser for low AU2 Condenser for low AU2 Condenser for low AU2 Delay of cond. tem Compr. off the Marm relay disabil oA3 Third relay configure AA2 Abarm relay disabil oA3 Third relay configure AAP		(0°C ÷ 50°C)		
FoF Fan off time with of FAP Probe selection fo ACH Kind of action for . SAA Set Point for auxil SHy Differential for auxil ArP Probe selection fo Sdd Auxiliary relay ope ALP Alarm probe selection fo Sdd Auxiliary relay ope ALP Alarm probe selection fo Sdd Auxiliary relay ope ALD Alarm probe selection fo ALU MAXIMUM tempe ALL Minimum temperature alarm ALd Temperature alarm AL2 Condenser for low AU2 Condenser tempe AL2 Delay of cond. tem Compr. off f bLL temperature alarm COMP Alarm relay disabli oA3 Third relay configure OA9 Alarm relay polari		(-55.0°C ÷ 50.0°C)	2	Pr1
FAP Probe selection for ACH Kind of action for SAA Set Point for auxili SHy Differential for auxiliant ArP Probe selection for Sdd Auxiliary relay ope ALP Alarm probe select ALD Alarm probe select ALC Temperat. alarms ALU MAXIMUM temperat ALL Minimum temperat ALL Minimum temperat ALL Differential for tem ALD Delay of temperat AP2 Probe for temperat AL2 Condenser for low AU2 Condenser for low AU2 Condenser temperat AL2 Delay of cond. tem Compr. off f bLL temperature alarm Compr. off f bA2 Delay of cond. tem Compr. off f bL temperature alarm Compr. off f bA2 temperature alarm CA2 temperature alarm bA3 Third relay configui<		0÷15 (min.)	0	Pr2 Pr2
ACH Kind of action for SAA Set Point for auxili SHy Differential for aux ArP Probe selection for Sdd Auxiliary relay ope ALP Alarm probe selec ALC Temperat. alarms ALU MAXIMUM temperature ALL Minimum temperature ALL Minimum temperature ALL Minimum temperature ALL Temperature alarm ACD Delay of temperature AD2 Probe for temperature AL2 Condenser for low AU2 Condenser temperature ACD Delay of cond. tem Compr. off fi bLL temperature alarm Compr. off fi AC2 temperature alarm tbA Alarm relay disabili oA3 Third relay configu ADP Alarm relay polari i1P Digital input polari i1F Digital input 1 con		0÷15 (min.) nP - P1 - P2 - P3 – P4	P2	Pr2
 SAA Set Point for auxili SHy Differential for aux ArP Probe selection for Sdd Auxiliary relay ope ALP Alarm probe select ALC Temperat. alarms ALU MAXIMUM temperation ALL Minimum temperation ALL Minimum temperation ALL Temperature alarm AFH Differential for tem ALD Temperature alarm AC Temperature alarm AC Temperature alarm ALD Delay of temperative AU2 Condenser for low AU2 Condenser for low AU2 Condenser for low AU2 Condenser temperative alarm Compr. off for bLL temperature alarm Compr. off for temperature alarm temperature alarm Compr. off for temperature alarm t		CL – Ht	cL	Pr2
 SHy Differential for aux ArP Probe selection fo Sdd Auxiliary relay ope ALP Alarm probe selection ALL Minimum temperature alarms ALL Minimum temperature alarn ALL Minimum temperature alarn ALH Differential for temperature alarn ALD Delay of temperature alarn AL2 Condenser for low AU2 Delay of cond. temperature alarm Compr. off ft bLL temperature alarm Compr. off and Alarm relay disabilit oA3 Third relay configure AoP Alarm relay polari 11P Digital input polari 11F Digital input 1 con 		(-55.0°C ÷ 150,0°C)	0,0	Pr2
Sdd Auxiliary relay ope ALP Alarm probe select ALC Temperat. alarms ALU MAXIMUM tempe ALL Minimum temperat. alarms ALU MAXIMUM tempe ALL Minimum temperat. ALL Minimum temperat. ALL Minimum temperat. ALD Delay of temperat. AL2 Delay of temperat. ADD Delay of temperat. AL2 Condenser for low AU2 Condenser for low AU2 Condenser for low AU2 Condenser temperat. AD2 Delay of cond. tem Compr. off f bLL temperature alarm Compr. off f bLL temperature alarm Compr. off f bL temperature alarm Condarser temperature alarm Condarser temperature alarm AC2 temperature alarm AD3 Third relay configure. oA3 Third relay polari i1P Digital input polari i1F </td <td></td> <td>(0,1°C ÷ 25,5°C)</td> <td>2,0</td> <td>Pr2</td>		(0,1°C ÷ 25,5°C)	2,0	Pr2
ALP Alarm probe select ALC Temperat. alarms ALU MAXIMUM temperat ALL Minimum temperat ALD Temperature alarm ADD Delay of temperat AD2 Probe for temperat AL2 Condenser for hig AH2 Differ. for condens Ad2 Condenser temperat AD2 Delay of cond. tem Compr. off f bLL temperature alarm Compr. off f bLL temperature alarm Compr. off f bA2 temperature alarm Compr. off f bA3 Third relay configure OA3 Third relay configure OB Alarm relay polarii i1P Digital input polarii	auxiliary relay	nP - P1 - P2 - P3 – P4	nP	Pr2
ALc Temperat. alarms ALU MAXIMUM temperat. ALL Minimum temperat ALL Minimum temperat ALT Temperature alarm ADD Delay of temperat ADD Delay of temperat AL2 Condenser for low AU2 Condenser for hig AH2 Differ. for condens AD2 Condenser temperature alarm Compr. off fi bLL temperature alarm Compr. off fi AC2 temperature alarm Compr. off fi AC2 temperature alarm Compr. off fi AC2 temperature alarm Compr. off fi AC2 temperature alarm DA Alarm relay disabili OA3 Third relay configu AOP Alarm relay polari i1P Digital input polari i1F Digital input 1 con		n – Y	n	Pr2
ALU MAXIMUM temperative ALL Minimum temperative AFH Differential for temperative ALD Temperature alarr dAO Delay of temperative dAO Delay of temperative AP2 Probe for temperative AU2 Condenser for low AU2 Condenser for low AU2 Condenser temperative dA2 Delay of cond. tem Compr. off ft bLL temperature alarr Compr. off ft Al2 Delay of cond. tem Compr. off ft Al2 Delay of cond. tem Compr. off ft Al2 Delay of cond. tem Compr. off ft Alarm relay disabil oA3 oA3 Third relay configure AoP Alarm relay polarii 11P Digital input polarii 11F Digital input 1 con	ion	nP - P1 - P2 - P3 – P4	P1	Pr2
ALL Minimum temperat AFH Differential for tem ALd Temperature alarr dAO Delay of temperat AP2 Probe for temperat AP2 Probe for temperat AP2 Condenser for low AU2 Condenser for low AU2 Condenser temperature alarr Compr. off ft bLL temperature alarr toAA alarm relay disabil oA3 Third relay configu AOP Alarm relay polari i1P Digital input polari i1F Digital input 1 con		rE – Ab ALc=rE: 0.0÷ 50.0°C	Ab	Pr2
AFH Differential for tem ALd Temperature alarr dAO Delay of temperat AP2 Probe for temperat AL2 Condenser for low AU2 Condenser for hig AH2 Differ. for condens Ad2 Condenser tempe dA2 Delay of cond. tem Compr. off f bLL temperature alarr Compr. off f AC2 temperature alarr tbA Alarm relay disabli oA3 Third relay configu AOP Alarm relay polari i1P Digital input polari i1F Digital input 1 con	alure alarm	ALc=Ab: ALL÷150°C	110,0	Pr1
AFH Differential for tem ALd Temperature alarr dAO Delay of temperat AP2 Probe for temperat AL2 Condenser for low AU2 Condenser for hig AH2 Differ. for condens Ad2 Condenser tempe dA2 Delay of cond. tem Compr. off f bLL temperature alarr Compr. off f AC2 temperature alarr tbA Alarm relay disabli oA3 Third relay configu AOP Alarm relay polari i1P Digital input polari i1F Digital input 1 con	ure alarm	$ALc = rE: 0.0 \div 50.0^{\circ}C; ALc=Ab:$		-
ALd Temperature alarr dAO Delay of temperati AP2 Probe for temperati AL2 Condenser for long AU2 Condenser for long AU2 Condenser for long AU2 Condenser for long AU2 Condenser tempe dA2 Delay of cond. tem Compr. off ft temperature alarr Compr. off AC2 temperature alarr tbA Alarm relay disabil oA3 Third relay configure AoP Alarm relay polari i1P Digital input polari iAF Digital input 1 con		-55°C÷ALU	-50,0	Pr1
 dAO Delay of temperati AP2 Probe for temperati AP2 Probe for temperative AL2 Condenser for low AU2 Condenser for low AH2 Differ. for condensis Ad2 Condenser temperature dA2 Delay of cond. temperature alarm Compr. off final temperature alarm tbA Alarm relay disabilities AA3 Third relay configure AOP Alarm relay polari 11P Digital input polari 11F Digital input 1 con 	perat. alarm recovery	(0,1°C ÷ 25,5°C)	2,0	Pr2
 AP2 Probe for tempera AL2 Condenser for low AU2 Condenser for hig AH2 Differ. for condens Ad2 Condenser tempe dA2 Delay of cond. ten Compr. off ft bLL temperature alarm Compr. off ft bL temperature alarm temperature alarm the Alarm relay disabilities AAP Alarm relay polari i1P Digital input polari i1F Digital input 1 con 	n delay	0 ÷ 255 (min.)	15	Pr2
AL2 Condenser for low AU2 Condenser for hig AH2 Differ. for condenser Ad2 Condenser tempe dA2 Delay of cond. tem Compr. off f bLL temperature alarm Compr. off f AC2 temperature alarm tbA Alarm relay disabli oA3 Third relay configu AoP Alarm relay polari i1P Digital input polari input 1 con		0 ÷ 24.0 h ris. 10min	1,3	Pr2
AU2 Condenser for hig AH2 Differ. for condenser Ad2 Condenser tempe dA2 Delay of cond. ten Compr. off fr Compr. off fr AC2 temperature alarm Compr. off fr AC2 temperature alarm Compr. off fr AC2 temperature alarm tbA Alarm relay disabilio oA3 Third relay configure AOP Alarm relay polari i1P Digital input polari i1F Digital input 1 con		nP - P1 - P2 - P3 - P4	P4	Pr2
AH2 Differ. for condense Ad2 Condenser tempe dA2 Delay of cond. ten Compr. off n Compr. off f AC2 temperature alarm Compr. off f Ac2 temperature alarm Compr. off f AC2 temperature alarm tbA Alarm relay disability oA3 Third relay configure AoP Alarm relay polari i1P Digital input polari i1F Digital input 1 con		(-55.0°C ÷ 150,0°C)	-40 110	Pr2
Ad2 Condenser tempe dA2 Delay of cond. tem Compr. off ft bLL Compr. off fr AC2 temperature alarm tbA Alarm relay disabil oA3 Third relay configu AoP Alarm relay polari i1P Digital input polari iAF Digital input 1 con		(-55.0°C ÷ 150,0°C) (0,1°C ÷ 25,5°C)	5	Pr2 Pr2
dA2 Delay of cond. ten Compr. off ft temperature alarm Compr. off fr AC2 temperature alarm tbA Alarm relay disabil oA3 Third relay configu AoP Alarm relay polari i1P Digital input polari i1F Digital input 1 con		0 ÷ 255 (min.)	15	Pr2
Compr. off fi temperature alarm Compr. off fi AC2 temperature alarm tbA Alarm relay disabli oA3 Third relay configu AoP Alarm relay polari i1P Digital input polari i1F Digital input 1 con	iper. alarm at start up	0 ÷ 24H0(144)	1,3	Pr2
Compr. off fr AC2 temperature alarm tbA Alarm relay disabili oA3 Third relay configu AoP Alarm relay polari i1P Digital input polari i1F Digital input 1 con	or condenser low		n	Pr2
AC2 temperature alarm tbA Alarm relay disabil oA3 Third relay configu AoP Alarm relay polari i1P Digital input polari i1F Digital input 1 con		n – Y	П	FIZ
tbA Alarm relay disabil oA3 Third relay configu AoP Alarm relay polari i1P Digital input polari i1F Digital input 1 con			n	Pr2
oA3 Third relay configure AoP Alarm relay polari i1P Digital input polari i1F Digital input 1 con		n – Y		
AoP Alarm relay polari i1P Digital input polari i1F Digital input 1 con		n – Y dEF - FAn - ALr - LiG - AUS -	у	Pr2
i1P Digital input polari i1F Digital input 1 con	Tallott	OnF - db - CP2 - dF2 – HES	Lig	Pr2
i1P Digital input polari i1F Digital input 1 con	у	OP - CL	cL	Pr2
i1F Digital input 1 con	ý	OP – CL	cL	Pr1
did Digital input alarm		EAL - bAL - PAL - dor - dEF -	dor	Pr1
did Digital input alarm		AUS - Htr - FAn - ES-HdF – onF		
		0 ÷ 255 (min.)	15	Pr1
i2P Digital input 2 pola		OP-CL	cL	Pr2
i2F Digital input 2 con	iyulali011	EAL - bAL - PAL - dor - dEF - AUS - Htr - FAn - ES-HdF – onF	EAL	Pr2
d2d Digital input alarm	delav	0 ÷ 255 (min.)	5	Pr2
nPS Number of activati		0 ÷ 255 (mm.) 0 ÷ 15	15	Pr2
	an status when open			
door		no - FAn - CPr - F-C	F-c	Pr2
rrd Regulation restart		n - Y	у	Pr2
HES Differential for Ene		(-30°C ÷ 30°C)	0	Pr2
Hur* Current hour		Read only	-	Pr1
Min* Current minute		Read only	-	Pr1
dAY* Current day		Read only	-	Pr1

dixe

Installing and operating instructions

Label	Name	Range	°C/°F	Level
Hd1*	First weekly holiday	Sun ÷ SAt – nu	nu	Pr1
	Second weekly holiday	Sun ÷ SAt – nu	nu	Pr1
	Energy Saving cycle start during workdays	0 ÷ 23h5	0.0	Pr1
	Energy Saving cycle length during workdays	0 ÷ 24h0	0	Pr1
ISE*	Energy Saving cycle start on holidays	0 ÷ 23h5	0.0	Pr1
	Energy Saving cycle length on holidays	0 ÷ 24h0	0	Pr1
Ld1*	1st workdays defrost start	0 ÷ 23H5;- nu	nu	Pr1
	2 nd workdays defrost start	0 ÷ 23H5;- nu	nu	Pr1
	3 rd workdays defrost start	0 ÷ 23H5;- nu	nu	Pr1
Ld4*	4th workdays defrost start	0 ÷ 23H5;- nu	nu	Pr1
	5 th workdays defrost start	0 ÷ 23H5;- nu	nu	Pr1
	6 th workdays defrost start	0 ÷ 23H5;- nu	nu	Pr1
Sd1*	1st holiday defrost start	0 ÷ 23H5;- nu	nu	Pr1
	2 nd holiday defrost start	0 ÷ 23H5;- nu	nu	Pr1
	3 rd holiday defrost start	0 ÷ 23H5;- nu	nu	Pr1
	4th holiday defrost start	0 ÷ 23H5;- nu	nu	Pr1
	5th holiday defrost start	0 ÷ 23H5;- nu	nu	Pr1
Sd6*	6 th holiday defrost start	0 ÷ 23H5;- nu	nu	Pr1
	Serial address	1 ÷ 247	1	Pr2
PbC	Kind of probe	PtC - ntC	ntc	Pr2
	on/off key enabling	nu - OFF – ES	oFF	Pr2
	Room probe display	Probe value	-	Pr2
	Evaporator probe display	Probe value	-	Pr2
	Third probe display	Probe value	-	Pr2
rSE	Real set	Read only	-	Pr2
	Software release	Read only	1.8	Pr2
Ptb	Map code	Read only		Pr2

Ptb Map code 2 Only for model with X-REP output * Only for model with real time clock



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