HIDROS

iCHiLL 100CX

Service Manual



USER INTERFACE

SET * 1 2 0000 F * 3 5 00000 F UP HP A 00000 PSI Vst meru Foul 00000 PSI dixel	
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Display

Upper digits (red color): configurable, see parameter CF36 (PB1, PB2, PB4, Set-point (parameter value)*, working set-point (real set-point modified from dinamic set-point, Energy saving or function for units without water storage tank), Hysteresis, Machine status **)) Lower digits (yellow color): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Octover digits (yellow color)): configurable, see parameter CF43 (PB1, PB2, PB4, Octover digits (yellow color))); configurable, see parameter CF43

Lower digits (yellow color): configurable, see parameter CF43 (PB1, PB2, PB3, PB4, Set-point (parameter value)*, working set-point (real set-point modified from dinamic set-point, Energy saving or function for units without water storage tank), Hysteresis, RTC, Machine status **)).

*the display visualizes chiller set point when the unit is on and in chiller mode, heating set point when the unit is on and in heat pump mode, and OFF when the unit is in standby.

**the display visualizes OnC when the unit is on and in chiller mode, OnH when the unit is on and in heat pump mode, and OFF when the unit is in standby.

Icons of the Display

Icon	Meaning
°C -°F bar-PSI	ON when the display visualizes a temperature or a pressure
⊕	On when the display visualizes the RTC, working hours, etc.
⚠	On flashing in case of alarm
Vset	On if the Energy Saving, dynamic set-point or function for units without water storage tank are active. OFF if a function above is enabled but not active.
menu	On during menù visualization
	On if heaters are activated (antifreeze heaters or/and boiler)
X.	On flashing during defrost delay time. On during defrost
Flow!	On flashing if water flow switch is activated. When the pump is OFF, the led is on flashing to indicate the correct status of the digital input
5	On if at least one water pump is on
\$	On if evaporator fans are activated
<u>0</u> D	On if a compressor is on. On flashing during the delay time for compressor activation.
Þ	On if open collector output is active
*	On if the controller is on in Heat or Cool mode
LP HP	On in case of Low pressure alarm or High pressure alarm

Keys	
ອ menu	 Push to enter in the Menu Push and hold (about 3 seconds) to set the clock
SET	 Push to visualize the set point. Push and release 2 times: 1st time is visualized the setpoint (the value of the parameter), 2nd time is visualized the real setpoint (when Energy saving, Dynamic setpoint or function for units without water storage tank are enebled) Push and hold to modify the setpoint Push during parameter programming: to enter in parameter modification to confirm the changes of the parameter Menù AlrM: push to reset the alarms
A	 Push and release to visualize all the probes configured In programming mode it scrolls the parameter list In programming mode increases the value of the parameters.
\bigtriangledown	 Push and release to visualize all the probes configured In programming mode it scrolls the parameter list In programming mode decreases the value of the parameters
*	 Push and hold to switch on/off the machine (chiller or heat pump depending from CF31 parameter)
*	 Push and old to switch on/off the machine (chiller or heat pump depending from CF31 parameter)

Key Combination

SET +	Push and hold to enter on the parameters programming
SET +	 Push to exit to the programming parameters Push and hold to activate manual defrost

REMOTE KEYBOARD VICX610



The Ichill has to be configured to manage the remote keyboard.

Upper digits (red color): configurable by parameter CF44 (PB1, PB2, PB4, Set-point (parameter value)*, working set-point (real set-point modified from dinamic set-point, Energy saving or function for units without water storage tank), Hysteresis, Machine status **))

Lower digits (yellow color): configurable by parameter CF45 (PB1, PB2, PB3, PB4, Set-point (parameter value)*, working set-point (real set-point modified from dinamic set-point, Energy saving or function for units without water storage tank), Hysteresis, RTC, Machine status **)).

*the display visualizes chiller set point when the unit is on and in chiller mode, heating set point when the unit is on and in heat pump mode, and OFF when the unit is in standby.

**the display visualizes OnC when the unit is on and in chiller mode, OnH when the unit is on and in heat pump mode, and OFF when the unit is in standby.

Note:

the Ichill 100CX is not compatible with VI610 remote keyboard.

Key Function

Concerning the meaning of the keys, refer to paragraph 2.3.

<u>Air/Air unit</u>: using the remote keyboard with NTC sensor on board (VICX610S model and parameter CF35 = 2), the read-out and the regulation are controlled by the NTC sensor mounted on the remote keyboard.

When there is not communication between the keyboard and the instrument the display visualizes "noL" (no link message).

DISPLAY VISUALIZATION



Upper digits (red color): configurable by parameter CF36 (PB1, PB2, PB4, Set-point (parameter value)*, working set-point (real set-point modified from dinamic set-point, Energy saving or function for units without water storage tank), Hysteresis, Machine status **)

Lower digits (yellow color): configurable by parameter CF43 (PB1, PB2, PB3, PB4, Set-point (parameter value)*, working set-point (real set-point modified from dinamic setpoint, Energy saving or function for units without water storage tank), Hysteresis, RTC, Machine status **).

*the display visualizes chiller set point when the unit is on and in chiller mode, heating set point when the unit is on and in heat pump mode, and OFF when the unit is in standby.

**the display visualizes OnC when the unit is on and in chiller mode, OnH when the unit is on and in heat pump mode, and OFF when the unit is in standby.

Alarm visualization



When the instrument detects an alarm, the lower display shows the alarm code alternated to probe value. The alarm icon (Δ) is on flashing. In case of HIGH PRESSURE alarm (HP), LOW PRESSURE alarm (LP) or WATER FLOW SWITCH (Flow!), dedicated icons are on.

STD-BY visualization

It is possible to choose what visualize when the Ichill is in STD-BY.

CF 46 = 0: the display visualizes the same informations configured in CF36 e CF43



CF 46 = 1: the display visualizes the label "OFF"







SILENCING THE BUZZER

Automatically: just after the alarm condition is recovered.

Manually: push and release one of the keys; the buzzer is stopped even if the alarm is still active.

FIRST INSTALLING

After giving power supply to the instrument, the lower display can show "rtC" alternated to the probe value: it is necessary to set the clock time.

If the probes are not connected, or they are faulty, the display shows the corresponding alarm code.

In any case it is possible to proceed with clock setting.

How to Set the Clock RTC

- 1. Push "menu" key for some seconds and wait until "Hour" label appears.
- 2. Push "SET": the hour value starts flashing.
- Push N or 0 to change the value. Confirm by pushing "SET"; after some seconds the controller will show "Min".
- 4. Repeat points 2 and 3 to set other parameters: Min: minutes (0÷60)

UdAy: day of the week (Sun = Sunday, Mon = Monday, tuE = Tuesday, UEd = Wednesday, tHu = Thursday, Fri = Friday, SAt = Saturday) dAy: day of the month(0÷31) MntH: Month (1÷12) yEAr: Year (00÷99)

HOT KEY" PROGRAMMING

Download from the Hot Key (previously programmed) to the Instrument Memory

- · The controller has to be not connected to the power supply
- Insert the Hot Key into dedicated connector
- Connect the controller to the power supply
- The download starts and lasts some seconds

During this phase the whole regulation is locked and the "dOL" message is flashing.

"End" message will appear if the programming result is good, after 15 sec. the regulation automatically restarts

If "Err" message appears the operation has given bad result. Turn the controller off and then on again to repeat the operation or restart the normal regulation.

Upload the Parameter from the Controller to the Hot Key

The instrument has to be connected to the power supply:

- Insert the Hot Key
- 2 Push "menu"
- Select "UPL" function with the arrow keys 3
- Push "SET" key. The Upload starts immediately. 4

During this phase the whole regulation is locked and the "UPL" message is flashing. "End " message will appear if the programming result is good, after 15s the regulation

automatically restarts. If "Err" message appears the operation has given bad result. Repeat the points 1-4 for a new Upload.

PARAMETERS PROGRAMMING

"Pr1" Programming Level (User Level)

How to access the "Pr1" User Level:

- Push "SET" + n key for some seconds; the upper display shows "ALL" (first family 1) of parameters).
- 🗱 and 🕸 icons are flashing.
- Using **o** and **n** arrows scroll the other family labels. 2)
- 3) Push "SET" to enter and see all the parameter belonging to that family. The display shows the first parameter label and its value.
- Scroll the parameter list with o and n arrows or modify the value as described in 9.4.

"Pr2" Programming Level (Factory Level)

"Pr2" parameters level is accessible through password:

- Enter the "Pr1" level as described in 9.1. 1
- Search parameter "Pr2"; "PAS" label appears on the upper side. 2.
- Push "SET": the lower display shows "Pas" and the upper display shows "0" 3 flashing.
- Set the password using **o** and **n** keys.
- Push SET key to confirm the value. 5

How to Move a Parameter from "Pr2" Level to "Pr1" Level

Enter the "Pr2" level and select the parameter to move; keeping pressed "SET" key, push and immediately release the n key.

The led in lower display will light to indicate the presence of the parameter in "Pr1". Then release also SET key.

To move the parameter in "Pr2" again: keep pressed SET key and immediately release the n key. The led turns off so as the parameter is not more visible in "Pr1" but just in "Pr2".

Changing a Parameter Value

- 1 Access to programming mode Pr1 or Pr2
- Select the parameter to modify
- Push "SET" 3

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- Modify the value with o and n keys 4
- 5 Push SET key again to confirm the new value; after some seconds next parameter will be displayed
- Exit the programming mode: push "SET" and o when a parameter label is displayed, or wait 15s (time-out) without pushing any keys.

NOTE: The new parameter value is also confirmed if, after changing it, no SET key is pressed for the time-out to exit. ATTENTION:

CF parameters (Configuration parameters) can be modified only if the controller is in OFF (digital input) or STD-BY

How to Change the Password

To change the password you must know the previous value. This operation is possible only starting from Pr2 level.

- 1) Enter the Pr1 level
- 2) Select a family of parameters (ST, or CF, or SD,...) and push "SET" key
- 3) Using o and n keys select the parameter "Pr2", then push "SET" key. The lower display shows "PAS" and the upper display shows 0 flashing
- Use **n** and **o** keys to input the active PASSWORD; push "SET" to confirm the 4) value and enter to Pr2 level
- Search "Pr2" parameter with N and O keys 5)
- Push "SET" key to enter the new value (flashing) 6)
- Insert the new password with o and n keys. 7)
- Push "SET" key to confirm it. 8)
- 9) The upper display will flash for few seconds then, next parameter will be showed.
- Exit the programming by pushing "SET" and o together or wait the time-out. 10)

START / STOP CHILLER OR HEAT PUMP

Press key for 3 seconds:

- the unit starts or stops the Chiller cycle if the parameter CF31 =0
- the unit starts or stops the Heat Pump cycle if the parameter CF31 =1

The icon 🏶 flashes for 3 seconds when the controller is waiting to turn on/off. To move from Chiller mode to Heat Pump mode or vice versa, it is necessary to stop the current cycle and then restart the new (Chiller \rightarrow STD-BY \rightarrow Heat Pump)



- Press key for 3 seconds:
- the unit starts or stops the Heat Pump cycle if parameter CF31 =0
- the unit starts or stops the Chiller cycle if parameter CF31 =1
- The icon 🗱 flashes for 3 seconds when the controller is waiting to turn on/off.

To move from Chiller mode to Heat Pump mode or vice versa, it is necessary to stop the current cycle and then restart the new (Chiller \rightarrow STD-BY \rightarrow Heat Pump)

STAND- BY FUNCTION

When the controller is working, it is possible to switch it in std-by mode pushing 🌞 key.

In stand-by is possible:

- Display probes value using arrow keys.
- Display and modify the set-point.
- Enter the "menu" function

"MENU" FUNCTION

Access the "menù" to perform the following operations:

- Display and reset the active alarms. 1.
- Display and reset working hours of compressors and water pumps 2
- Display delay time between two defrost cycles 3
- Upload the parameters map from the controller to the Hot Key (see 8.2).
- Display/reset the alarm log.

During the Menu operations the "menu" icon is on.

Access to the "menu"

Push and release the "menu" key. The " menu" icon is on.

Exit from the "menu"

Push and release the "menu" key or wait the time out. The "menu" icon disappears.

How to Display the Alarm Events

Enter the "menu":

- Use O or n keys to find "ALrM" label.
- Push and release the "SET" key. 2.
- Use **O** or **n** keys to scroll the alarm list. 3

To exit the function "menu" push and release the "menu" key or wait the time-out. The "menu" icon disappears.

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How to Reset an Alarm Event

- 1) Enter the function "menu".
- 2) Use **o** or **n** keys to find the "ALrM" label.
- Push and release the "SET" key the lower display shows the alarm code. 3)
- 4) Lower display shows the alarm code.

Upper display shows "rSt" label if the alarm can be reset, "NO" label if it is not possible.

Use **0** or **n** keys to scroll the alarm list.

- Push "SET" key when "rSt" is lighted to reset the alarm; after a while the read-out 5) move to next alarm.
- To exit the function menu push and release the "menu" key or wait the time-out. 6) The "menu" icon disappears.

Compressors And Pumps Working hours

Enter the function "menu".

- Use **0** or **n** keys to find on the lower display:
- C1Hr (Compressor n°1 working hours),
- C2Hr (Compressor n°2 working hours),
- PFHr (Evaporator Water pump or supply fan working hours),
- PCHr (Condenser water pump working hours).
- The clock icon 🕒 is lighted.

Reset Working Hours

- 1 Enter the function "menu".
- Use 0 or n keys to find on the lower display the C1Hr, C2Hr, PFHr or PCHr. 2
- Push "SET" key for 3 seconds: the upper display shows "0" indicating the reset. 3. 4. To exit the function menu push and release the "menu" key or wait the time-out.
- The "menu" icon disappears.

How to Display the Delay Time Between Two Defrost

- Enter the function "menu".
- Use o or n keys to find on the upper display the "dEF" label; the lower display 2 shows delay time between two defrost (minutes and seconds).
- The icon 🕑 is flashing.
- To exit the function "menu" push and release the "menu" key or wait the time-out. 4 The "menu" icon disappears.

How to See the Alarm Log

- Enter the function "menu" Use o or n keys to find "ALOG" label. 2
- Push "SET" key: the lower display shows the alarm code, the upper display shows 3. "n°" followed by the progressive number.
- With o or n scroll the alarm list.
- To exit from ALOG function push "menu" key or wait the time-out delay is 5 expired

Memory capacity is 50 alarm structured in a FIFO list (first in first out). Each new alarm will take the place of the oldest alarm contained in the list (the read-out is ordered from the oldest to the newest).

How to Reset the Alarm Log

- Enter the function "menu". 1)
- Use o or n keys to find "ALOG" label. 2)
- Push "SET" key. 3)
- Use o or n keys to find "ArSt" (Alarm reset) label on the lower display; the upper 4) display shows "PAS"
- Push "SET" key and then enter the password value using o or n keys; confirm the 5) value pushing "SET" key.
- The ArSt label starts flashing for 5s, to confirm the alarm logging data is reset.

KEYBOARD FUNCTIONS

How to See the Set Point Value

Push and release the "SET" key.

"SetC" set point chiller; Lower display shows:

"SetH" set point heat pump.

The upper display shows the value.

Note:

SetH is available only if configured for Heat Pump.

How to Change the Set Point Value

- Push and hold "SET" key (for about 3 seconds). 1)
- The setpoint value is flashing. 2)
- 3) Use o and n to increase or decrease the new value.
- 4) Push and release "SET" key or wait the time-out to exit the programming.

How to See the real Set Point

When Energy Saving, Dynamic Set Point or Function For Units Without Water Storage Tank are enabled is possible to see the real set point. When the machine is running:

- push "SET" key once: lower display shows "SetC" (setpoint chiller) or "SetH" (setpoint heat pump) and upper display shows the value.
- push "SET" key again:

- when "Energy Saving" is enabled the lower display shows "SEtS" (Energy saving setpoint) and upper display shows the value.

- when "Dynamic Set" is enabled, the lower display shows "SEtd" (dynamic set point) and upper display shows the value.

- when the function for units without water storage tank is enabled the lower display shows "Setr" (real set point) and upper display shows its value. - when two function above are both enabled, the lower display shows "Setr" (real set point) and upper display shows its value.

REMOTE ON/OFF

If a digital input is configured as remote on/off, it is possible to switch on or switch off the unit.

The remote ON/OFF:

- It has priority over the keyboard
- The unit can be switched on and off by keyboard only if the digital input set the unit switched on
- When the digital input is disabled the instrument returns to its condition prior to activation
- It is possible to navigate the functions menu
- The upper display visualizes "OFF" and the decimal LED will be flashing.

HOW TO DISABLE A COMPRESSOR

A compressor can be disabled for maintenance; the unit continues to work normally but only with one compressor.

How to disable a compressor:

- Access to the programming parameters mode. 1
- 2 Set the parameter CO12 = 1 or CO13=1 (compressor 1 or 2 = OFF).
- To enable the compressor set C011=0 or CO12= 0.

DYNAMIC SET POINT

This function is useful to save energy or to use the unit during particular external air temperature condition.

- The setpoint is changed according to the external temperature or 4..20mA trasducer. The Dynamic Set point function is enabled:

- if Sd01 = 1 and CF06 = 3 (Pb3 probe is configured as 4..20mA signal for dynamic set point), or;

- if Sd01 = 1 and CF07 = 3 (Pb4 probe is configured as outside air temperature).

ENERGY SAVING

It's possible to change the setpoint for the Energy saving periods. The activation can be:

- weekly/daily; in this case is required a controller with RTC on board
- by digital input configured as "Energy saving"

The setpoint during an Energy Saving period is: Chiller: setpoint =SET+ES10 differential=ES11 Heat pump: setpoint =SET+ES12 differential=ES13

Daily Programming

It is necessary to set parameters ES03 + ES09 to activate the Energy saving (one parameter for each day of the week)

The value "1" enable the function for that day.

Eg: ES03 = 1 means that every Monday the Energy Saving is activated for all day.

Programmable timer (RTC is required)

It's possible to activate the Energy Saving for a period of the day by setting the start time end the end time.

- ES01 Energy Saving start hour
- ES02 Energy Saving stop hour

Eg: ES01 = 8.0 and ES02 = 10.0: Energy Saving is active from 8 to 10.0 for all the days of the week.

Eg: ES01 = 23.0 and ES02 = 8.0: Energy Saving is active from 23.0 to 8.0 of the next morning for all the days of the week.

Energy Saving is disabled if the parameters ES01 / ES02 are both "0".

Energy Saving by Digital Input

The function is enabled when a digital input, configured as Energy Saving, is activated by remote contact

DEFROST FUNCTION

The defrost cycle is enabled only if the following conditions are satisfied:

the unit is working in heat pump mode (heat pump enabled by parameter CF28) 1

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2 the unit is air/air or air/water (CF01=0 or CF01=1)

- 3. dF01=1 defrost cycle enabled
- 4. one relay configured as reversing valve
- 5. Pb3 or Pb4 must be configured as condensing probe (without active faulty probe alarms).

If only one of these conditions is not satisfied the defrost does not operate.

When the condensing temperature/pressure falls below dF03, starts the counting of time dF10. When the counting ends, if the temperature/pressure is lower than dF03 the defrost starts.

The compressor is switched off for dF08 and, after dF08/2, the the 4-ways reversing valve is activated. When the counting of dF08 ends the compressor is switched on (CO01 and CO02 are disabled during the defrost).

The defrost ends when the temperature/pressure is >dF04 or for maximun time dF07. At the end of the defrost, the compressor is switched off for dF09 and, after dF09/2, the

the 4-ways reversing valve is deactivated.

When the counting of dF09 ends, the compressor is switched on.

Forced Defrost

This function is enabled if dF05 \neq 0 and allows to activate a defrost even if the interval time between defrosts is running and the temperature/pressure value is lower than the parameter dF19 for the dF05 time.

If during the time delay dF05 the temperature/pressure becomes higher than dF19+dF20 value, the whole procedure is stopped and the time delay dF05 will be reloaded.

Combined Defrost

This function is enabled if CF07 = 5 and Pb4 is configured as NTC probe for combined defrost (placed typically on the evaporator coil). The detected temperature allows to calculate a better defrost cycle giving the start and the end commands for the cycle itself.

Functioning:

when the temperature detected by Pb3 probe is lower than dF03, the time delay dF10 starts.

When the time dF10 is elapsed the controller check Pb4 value: if it is lower than dF11 the defrost procedure starts, otherwise the unit still works in Heat Pump. When Pb4 value is higher than dF12 the combined defrost ends.

Manual Defrost

This function is enabled if:

- · at least one compressor is running
- the condenser temperature/pressure is lower than dF03

• if the "combined defrost" is enabled, Pb4 value must be lower than dF11

If the conditions above are satisfied, by pushing o + SET (before o, then SET) for more than 5 sec. the defrost cycle immediately starts.

FUNCTION FOR UNITS WITHOUT WATER STORAGE TANK

This function manages the compressor(s) to optimize the production of refrigerated water in units with low thermal loads.

The function analyses the compressor operating time (from regulation start-up to shutdown request) and compares it with the time configured with parameter CO01 (minimum ON time); when the regulation temperature reach the set point and the operation time is lower than CO01, the controller modifies the set point and the differential to increase the compressor operating time.

If the compressor operates for longer than the minimum time (CO01), when ST15 time is elapsed (this time starts when the CO01 is elapsed) the function progressively restores the set point and hysteresis to the initial values (ST01 or ST03); in this case:

 Heat pump: whenever the time ST15 expires, the function subtracts the ST13 value to the setpoint and ST14 value to the hysteresis

 Chiller: whenever the time ST15 expires, the function adds the ST13 value to the set point and subtracs the ST14 value to the hysteresis.

When the unit is switched OFF (by digital input or by keyboard), the set point and differential are restored to the initial values (ST01...ST04).

Below the formulas for calculating the new set point and hysteresis.

Heat pump:

Set point = set point heat pump + Par ST13 + (CO01 - compressor working time*) x ST16/10

Differential = differential heat pump + Par.ST14 + (CO01 - actual time*) x Par ST16 / 10 Chiller:

Set point = set point cool – [Par ST13+ (CO01 - compressor working time *) x Par ST16 / 10]

Differential = differential chiller + Par.ST14 + (CO01 - compressor working time *) x Par ST16 /10

*Compressor working time is in sec x 10.

The function for units without water storage tank is compatible with Energy Saving function or with the Dynamic set point.

Visualization of the set point on the display:

Chiller with energy saving or dynamic set point enabled:

push "SET" button once = SetC (set point value from parameter)

push "SET" button twice = Sets or Setd (real operating set point value)

Chiller with energy saving or dynamic set point and function for machine without water storage tank enabled:

- push "SET" button once = SetC (set point value from parameter)
- push "SET" button twice = Setr (real operating set point value)

Heat pump with energy saving or dynamic set point enabled:

- push "SET" button once = SetH (set point value from parameter)
- push "SET" button twice = Sets or Setd (real operating set point value)

Heat Pump with energy saving or dynamic set point and function for machine without water storage tank enabled:

- push "SET" button once = SetH (set point value from parameter)
- push "SET" button twice = Setr (real operating set point value)

When the function for units without water storage tank is enabled, the protection for high temperature o low temperature is active; the compressor/s will be switched off if: Chiller: outlet evaporator temperature < ST11 Heat pump: outlet evaporator temperature > ST12

GEOTHERMAL CHILLER FUNCTION

This function, to work, requires the Ichill remote keyboad with internal probe to detect the room temperature; the function is enabled if the parameter CF03=2.

The unit works according to Pb2 probe and the set point ST01 and ST03.

During the regulation, the compressor/s status (only compresor/s status) depend on the room temperature and the user set point configured with parameters ST18 and ST22.

When the room temperature reach the user set point, the compressor/s are switched off; in this case the other loads status (pump, fan, etc.) doesn't depend from compressor status (they work normally).

Manufacturer set point

The unit works on the manufacturer set point:

- set point chiller ST01, differential chiller ST02;
- set point Heat pump ST03, differential Heat pump ST04.

User set point

To visualize the room set point press the "SET" button on the remote keyboard or on the controller.

To change the room set point press and hold the "SET" button: the set point value is displayed flashing on upper display. To change its value press o or n keys and confirm with "SET".

Dynamic set point

The dynamic set point function, if enabled (Sd01=1), works normally (probe PB4) and modify ST01 / ST03 set point. SEtd dynamic set point is displayed in the functions menu.

Energy saving

The Energy saving function, if enabled by clock or digital input, modify the room set point (ST18 / ST22).

UNLOADING FUNCTION

High temperature inlet evaporator

The function allows the machine to operate in case of high evaporator inlet temperature (to avoid possible high pressure intervention).

When the evaporator inlet temperature is greater than CO17 set point for a time of CO19, a compressor (if two compressors are working) or the capacity control (in case of one compressor with capacity step) is switched off.

When only one compressor is working or only the capacity step is active, the function has not effect on the regulation.

When the function is activated the lower display shows "AEUn" label alternated to default visualization.

The function is disabled if the evaporator inlet temperature is lower than CO17 set point – CO18 differential.

Note

When the unloading function is active, to avoid a prolonged working time in this condition, if the evaporator inlet temperature is lower than CO17 set point and higher than CO17 – CO18 for a time of CO20, the function is disabled.

CO20 delay time starts when the evaporator inlet temperature is lower than CO17 set point.

High pressure in chiller mode

The function allows the machine to operate in case of high outside temperature (start-up in summer with hot external temperature), to avoid possible high pressure alarm.

Pb3 probe has to be configured to use a pressure transducer.

When the evaporator condenser pressure is greater than CO21 set point, a compressor (if two compressors are working) or the capacity control (in case of one compressor with capacity step) is switched off.

When only one compressor is working or only the capacity step is active, the function has not effect on the regulation.

The lower display shows "ACUn" alternated to default visualization.

When the evaporator condenser pressure falls below CO21 - CO22, the function is disabled and, if required for the regulation, the previously shut down compressor/capacity step can be re-inserted.

Note

When the unloading function is active, to avoid a prolonged working time in this condition, if the evaporator condenser pressure is lower than CO21 set point and higher than CO21 – CO22 for a time of CO25, the function is disabled.

CO25 delay time starts when the evaporator condenser pressure is lower than CO21 set point.

Low pressure in heat pump mode

The function allows the machine to operate in case of low outside temperature (start-up in winter with ice-covered batteries), to avoid possible low pressure alarm. Pb3 probe has to be configured to use a pressure transducer.

When the evaporator condenser pressure is lower than CO23 set point, a compressor (if two compressors are working) or the capacity control (in case of one compressor with capacity step) is switched off.

When only one compressor is working or only a capacity step is active, the function has not effect on the regulation.

The lower display shows "ACUn" alternated to default visualization.

When the evaporator condenser pressure is greater than CO23 + CO24, the function is disabled and, if required for the regulation, the previously shut down compressor/capacity step can be re-inserted.

Note

When the unloading function is active, to avoid a prolonged working time in this condition, if the evaporator pressure is higher than CO23 set point and lower than CO23 + CO24 for a time of CO25, the function is disabled.

CO25 delay time starts when the evaporator pressure is higher than CO23 set point.

BOILER FUNCTION

The boiler function can be used for heating (Ar20=1) or for support the heating function (Ar20=0).

To enable the function is necessary:

- unit configured in Heat Pump mode
- Pb4 configured as external air probe (CF07=3)

Heating Integration Control Ar20=0

Anti-freeze/support heater 1:

Heather ON if:

- outside air temperature < Ar21 for more than Ar23 time
- regulation probe < Heating set point or real Heating set point (if Energy saving or Dynamic set point or function for units without water storage tank are enabled)

Ar23 delay time starts when outside temperature falls below Ar21 set point. If outside temperature exceeds the Ar21 + Ar22 when the counting of Ar23 is running, the boiler function is not enabled and the Ar23 time is re-loaded.

Heather OFF if:

- outside air temperature > Ar21 + Ar22
- regulation probe > Heating set point or real Heating set point (if Energy saving or Dynamic set point or function for units without water storage tank are enabled)

If outside air temperature falls below the Ar25 set point the compressors are switched off; when outside air temperature is higher than Ar25 set point + the Ar26 differential the compressors are switched on.

Anti-freeze/support heater 2:

Heather ON if:

- outside air temperature < Ar21 for more than Ar23 + Ar24 time
- regulation probe < Heating set point (ST04 / 2) or real Heating set point (ST04 / 2) (if Energy saving or Dynamic set point or function for units without water storage tank are enabled)

Ar23 delay time starts when outside temperature falls below Ar21 set point. Ar24 delay time starts when Ar23 is elapsed.

If the outside temperature exceeds Ar21 + Ar22 when the counting of Ar23 is running, the boiler function is not enabled and the Ar23 time is re-loaded.

Heather OFF if:

- outside air temperature > Ar21 + Ar22
- regulation probe > Heating set point or real Heating set point (if Energy saving or Dynamic set point or function for units without water storage tank are enabled)

If the outside air temperature falls below the Ar25 set point the compressors are switched off; when outside air temperature is higher than Ar25 set point + the Ar26 differential, the compressors are switched on.

Heating Control Ar20=1

Anti-freeze/support heater 1:

Heather ON if:

- outside air temperature < Ar21 for more than Ar23 time
- regulation probe < Heating set point or real Heating set point (if Energy saving or Dynamic set point or function for units without water storage tank are enabled)

Ar23 delay time starts when outside temperature falls below Ar21 set point. When the heather is switched on, the compressor and condenser fans are switched off. If the outside temperature exceeds Ar21 + Ar22 when the counting of Ar23 is running, the boiler function is not enabled and the Ar23 time is re-loaded

Heather OFF if:

- outside air temperature > Ar21 + Ar22
- regulation probe > Heating set point or real Heating set point (if Energy saving or Dynamic set point or function for units without water storage tank are enabled)

If the outside air temperature exceeds the Ar21 + Ar22 the heater is switched off and the compressor and fans are switched on (if the heat regulator calls for it).

Anti-freeze/support heater 2:

- Heather ON if:
 outside air temperature < Ar21 for more than Ar23 + Ar24 time
- regulation probe < Heating set point (ST04 / 2) or real Heating set poinf (ST04 / 2) (if Energy saving or Dynamic set point or function for units without water storage tank are enabled)

Ar23 delay time starts when outside temperature falls below Ar21 set point.

Ar24 delay time starts when Ar23 is elapsed.

If the outside temperature exceeds Ar21 + Ar22 when the counting of Ar23 is running, the boiler function is not enabled and the Ar23 time is re-loaded.

Heather OFF if:

• outside air temperature > Ar21 + Ar22

 regulation probe > Heating set point or real Heating set point (if Energy saving or Dynamic set point or function for units without water storage tank are enabled)

MAINTENANCE FUNCTION

The maintenance warning is activated if the compressor 1, compressor 2, evaporator water pump / supply fan (air/air unit), condenser water pump have worked for a time set by parameter (CO14, CO15, CO16 and CO28).

The maintenance alarm code are:

A13=comp.1, A14=comp.2, A15=water pump or supply fan, A20=condenser pump.

The maintenance warning is only a visual signaling and does not influence the regulation.

To reset the warning is necessary to set the operating hours at zero value in the menù function.

BLACK OUT

After a black-out:

- 1. the controller restarts from the pervious status.
- 2. The defrost cycle is stopped.
- 3. All the working time delay will be reloaded.

Odd Meaning P1 Pb1 probe alarm P2 Pb2 probe alarm P3 Pb3 probe alarm P4 Pb4 probe alarm A01 High pressure switch alarm A02 Low pressure switch alarm A03 Low tremperature alarm of the supplied temperature A04 Low temperature alarm of the supplied temperature A05 High temperature High pressure A06 Low temperature alarm of the supplied temperature A07 Antif recze alarm A07 Antif frecze alarm A08 Evaporature Low pressure A09 Conferenture High pressure A06 Evaporature Low pressure A07 Antif frecze alarm A08 Evaporature Low pressure A09 Conferesson 1 themain protection alarm A01 Conferesson 1 themain protection alarm A110 Conferesson 1 themain protection alarm A12 Defrost error alarm A13 Compresson 2 maintenance warning A14 Compresson 2 maintenance warning	ALARM CODE AN	d Events
P1Pbi probe alarmP2Pb2 probe alarmP3Pb3 probe alarmP4Pb4 probe alarmP4Pb4 probe alarmA01High pressure switch alarmA02Low temperature alarm of the suppled temperatureA03Low temperature alarm of the suppled temperatureA04Low temperature alarm of the suppled temperatureA05High temperature alarm of the suppled temperatureA06Low temperature alarm of the suppled temperatureA07Anti freeze alarmA06Low temperature alarm forte contensing unitA07Anti freeze alarm motocondensing unitA08Evaporator water flow alarm (air/water or water/water units)A09Compressor 1 temmal protection alarmA10Compressor 1 temmal protection alarmA11Conderser fan thermal protection alarmA12Defrost error alarmA13Compressor 1 maintenance warningA14Compressor 1 maintenance warningA15Water pump or supply air fan (air/air) maintenance warningA16High temperature evaporator intel waterA17Thermal protection alarm for evaporator water pump / supply fanA18Condenser water flow alarmA19Condenser water flow alarmA11Condenser water pump antertence alarmA12Defrost error alarmA14Condenser water pump alartenance warningA15Water pump or supply air fan (air/air) maintenance warningA16High temperature evaporator water pump / supply fan	Cod	Meaning
P2 Pb2 probe alarm P3 Pb2 probe alarm P4 Pb4 probe alarm P4 Pb4 probe alarm A01 High pressure switch alarm A02 Low temperature alarm of the supplied temperature A03 Low temperature alarm of the supplied temperature A04 Low temperature cow pressure A05 High temperature low pressure A06 Low temperature low pressure A07 Anti freeze alarm A07 Anti freeze alarm A07 Anti freeze alarm indicoondensing unit A08 Evaporator water flow alarm (alr/water or water/water units) A09 Compressor 2 thermal protection alarm A11 Condenser fan thermal protection alarm A11 Condenser fan thermal protection alarm A12 Defost error alarm A13 Compressor 2 thermal protection alarm A14 Compressor 2 maintenance warning A15 Water pump or supply air fan (alr/al) maintenance warning A16 High temperature evaporator intel water A17 Thermal protection alarm for covaperator water pump / supply fan A18 Condenser water flow alarm A19 Condenser water flow alarm A16 High temperature evaporator intel water	P1	Pb1 probe alarm
P3 P42 probe alarm P4 P44 probe alarm A01 High pressure switch alarm A02 Low pressure switch alarm A03 Low temperature alarm of the supplied temperature A04 Low temperature alarm of the outlet air from evaporator. A05 High temperature low pressure A06 Low temperature low pressure A07 Antif rezez alarm molocondensing unit A08 Evaporator water flow alarm (air/water or water/water units) A09 Compressor 1 thermal protection alarm A10 Compressor 1 maintenance warning A11 Condenser fan thermal protection alarm A12 Defrost error alarm A13 Compressor 1 maintenance warning A14 Compressor 1 maintenance warning A15 Water pump or supply air fan (air/air) maintenance warning A16 High temperature condenser water pump A17 Thermal protection alarm for condenser water pump / supply fan A18 Thermal protection alarm for condenser water pump A19 Condenser water flow alarm A20 Condenser water pump maintenance alarm A10 Condenser water pump maintenance alarm A11 Thermal protection alarm for condenser water pump A18 Thermal protection alar	P2	Pb2 probe alarm
P4 Pb4 probe alarm A01 High pressure switch alarm A02 Low pressure switch alarm A03 Low temperature alarm of the supplied temperature A04 Low temperature alarm of the outlet alr from evaporator. A05 High temperature High pressure A06 Low temperature cow pressure A06 Low temperature low pressure A07 Anti freeze alarm A07 Anti freeze alarm motocondensing unit A08 Evaporator water fow alarm (alr/water or water/water units) A08 Evaporator water fow alarm (alr/water or water/water units) A09 Compressor 1 thermal protection alarm A11 Condresser fan thermal protection alarm A11 Condresser 1 maintenance warning A11 Compressor 1 maintenance warning A12 Defrost error alarm A13 Compressor 1 maintenance warning A14 Compressor 1 maintenance warning A15 Waler pump or supply air fan (alr/air) maintenance warning A16 High temperature evaporator inde water pump / supply fan A17 Thermal protection	P3	Pb3 probe alarm
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FErr Functioning alarm AFr Frequency alarm ALOC General alarm for machine block	ACF5	Configuration alarm
AFr Frequency alarm ALOC General alarm for machine block	FErr	Functioning alarm
ALOC General alarm for machine block	AFr	Frequency alarm
	ALOC	General alarm for machine block
bLOC General alarm, signal only	bLOC	General alarm, signal only

PARAMETER TABLE

SUB MENU SELECTIONS

LABEL	Meaning
ALL	Shows the whole set of parameters
ST	It contains only the regulation parameters
CF	It contains only the configuration parameters
SD	It contains only the dynamic Set point parameters
ES	It contains only the Energy Saving parameters
CO	It contains only the compressor parameters
FA	It contains only the fan regulation parameters
Ar	It contains only the anti freeze parameters
DF	It contains only the defrost parameters
AL	It contains only the alarm parameters

Regulation Parameters							
Parameter	Description	Min	Мах	Me	as. Resolution		
ST01	Summer Set point	ST05	ST06	°C	/°F Decimal integer		
ST02	Summer differential	0.0 0	25.0 45	°C °F	Decimal integer		
ST03	Winter Set point	ST07	ST08	°C	/°F Decimal integer		
ST04	Winter differential	0.0 0	25.0 45	°C °F	Decimal integer		
ST05	Minimum set point limit for ST01 (summer)	-50.0 -58	ST01	°C °F	Decimal integer		
ST06	Maximum set point limit for ST01 (summer)	ST01	110 230	°C °F	Decimal integer		
ST07	Minimum set point limit for ST03 (winter)	-50.0 -58	ST03	°C °F	Decimal integer		
ST08	Maximum set point limit for ST03 (winter)	ST03	110 230	°C °F	Decimal integer		
ST09	Regulation band	0.0 0	25.0 45	°C °F	Decimal integer		
	Function for units without water storage tank						
Parameter	Description	Min	Max	Meas.	Resolution		
ST10	Chiller unit without water storage tank 0= function disabled 1= function activated	0	1				
ST11	Minimum temperature Set point for outlet water in chiller mode (unit without water storage tank)	-50.0 -58	110 230	°C °F	Dec int		
ST12	Maximum temperature Set point for outlet water in HP function (unit without water storage tank)	-50.0 -58	110 230	°C °F	Dec int		
ST13	Differential set point for chiller / heat pump function	0.0 0	25.0 45	°C °F	Dec int		
ST14	Offset of the differential for chiller / HP function	0.0 0	25.0 45	°C °F	Dec int		
ST15	Compressor operation time above which the delta set point and delta differential for chiller / HP function is decreased	0	250	Sec	10 sec		
ST16	Constant for calculationg the set point value and differential for chiller/HP function	0	250				
ST17	Delay for changing the operating set point	1	250	Sec	10 sec		
	Geothermal chiller function						
Parameter	Description	Min	Max	Meas.	Resolution		
5118	Room set point in chiller function	5120	5121	°C/°F	dec/int		
5119	Room differential in chiller function	0.0	25.0 45	°F	Dec int		
ST20	Minimum value of the room set point in chiller function	-50.0 -58	ST18	°C °F	Dec int		
ST21	Maximum value of the room set point in chiller function	ST18	110 230	°C °F	Dec int		
ST22	Room set point in heat pump function	ST24	ST25	°C/°F	dec/int		
ST23	Room differential in heat pump function	0.0 0	25.0 45	°C °F	Dec int		
ST24	Minimum value of the room set point in heat pump function	-50.0 -58	ST22	°C °F	Dec int		

ST25	Maximum value of the room set point in heat pump function	ST22	110 230	°C °F	Dec int
Pr2	Password	0	999		

Configuration Parameters						
Parameter	Description	Min	Max	Meas.	Resolution	
CF01	Unit model:	0	3			
	U= Chiller air / air					
	1 = Chiller Mater 2 - Chiller water / water					
	3= Chiller water / water with reversal on water circuit					
CF02	Motocondensing unit	0	1			
0.02	0= No	ů	·			
	1=Yes					
CF03	Regulation probe	0	2			
	0= Pb1 regulation					
	1= Pb2 regulation					
	2= PB2 regulation and compressors activation with user set on PB1 probe					
CF04	Pb1 configuration	0	3			
	U= Probe not enabled					
	2 – Digital input for temperature regulation demand					
	3= Digital input for temperature regulation demand					
CF05	Pb2 configuration	0	4			
	0= Probe not enabled	-				
	1= NTC temperature of evaporator outlet					
	2= Digital Input for antifreeze alarm					
	3= Digital input for heating demand					
	4= External air temperature					
CF06	Pb3 configuration	0	6			
	0= Probe not enabled					
	1 = NTC temperature condensing control					
	3 = 4 20ma for Dynamic Set point					
	4= NTC temperature for anti freeze alarm (water/water)					
	5= NTC high temperature probe of system inlet water					
	6= 05V for condensing pressure					
CF07	Pb4 configuration	0	7			
	0= Probe not enabled					
	1 = NTC condensing control					
	2= Multifunction digital input					
	3 = EXTERNAL AIT TEMPERATURE					
	5- NTC temperature for combined defrost					
	6= NTC temperature for logging					
	6= NTC condenser outlet temperature (water/water units whith reversal on water circuit)					
	7= NTC high temperature probe of system inlet water					
CF08	ID1 configuration	0	15			
	0= 1 st compressor thermal protection					
	1 = Condenser fan thermal protection					
	2 = Evaporator flow switch alarm					
	3= Remote Cooling/Heating					
	$5 = 2^{nd}$ compressor thermal protection					
	$6=2^{nd}$ compressor or step request (Motocondensing unit)					
	7= End defrost					
	8= Energy Saving					
	9= Anti Freeze alarm					
	10 = 1 st and 2 nd compressor thermal protection					
	11= General alarm (unit shutdown)					
	12= Evaporator water pump thermal protection alarm/ supply fan thermal protection alarm					
	13= Condenser Water pump thermal protection alarm					
	15= not used					
		1				

CE09	ID2 configuration	0	15		
0107	0. 1d compressor thermal protection	0	15		
	1= Condenser fan thermal protection				
	2= Evaporator flow switch alarm				
	3- Remote On/off				
	4= Cooling/Heating				
	5= 2 nd compressor thermal protection				
	6= 2 nd compressor or step request (Motocondensing unit)				
	7- End defrost				
	8= Energy Saving				
	9= Anti Freeze alarm				
	10= 1 st and 2 nd compressor thermal protection				
	11= General alarm for total unit shutdown				
	12 Events a data more total distribution of the source of				
	12= Evaporator water pump thermal protection alarm/ supply fan thermal protection alarm				
	13= Condenser water pump thermal protection alarm				
	14= Condenser flow switch alarm				
	15= not used				
0010	IDE configuration	0	10		
CFIU		U	15		
	0= 1 st compressor thermal protection				
	1= Condenser fan thermal protection				
	2- Evaporator flow switch alarm				
	2 Demote On loff				
	3= Remote Union				
	4= Cooling/Heating				
	5= 2 nd compressor thermal protection				
	6= 2 nd compressor or step request (Motocondensing unit)			1	
	7- End defrest		1	1	
				1	
	s= Energy Saving			1	
	9= Anti Freeze alarm			1	
	$10 = 1^{st}$ and 2^{nd} compressor thermal protection				
	11- Conoral alarm for total unit shutdown				
	12 Concernational data data data data data data dare da sere la sere la sere da sere d				
	12= Evaporator water pump thermal protection alarm/ supply fan thermal protection alarm				
	13= Condenser water pump thermal protection alarm				
	14= Condenser flow switch alarm				
	15_ not used				
0544			45		
CETT	Pb4 configuration in digital input mode	0	15		
	0= 1 st compressor thermal protection				
	1= Condenser fan thermal protection				
	2 – Evaporator flow switch alarm				
	2 - Evaporation now switch alarm				
	3= Remote On/off				
	4= Cooling/Heating				
	$5 = 2^{nd}$ compressor thermal protection				
	6 - 2 is compressed as that request (Matecondonsing unit)				
	/= End defrost				
	8= Energy Saving				
	9= Anti Freeze alarm				
	10-11 and 2nd compressor thormal protection				
	I = General alarm for total unit shutdown				
	12= Evaporator water pump thermal protection alarm/ supply fan thermal protection alarm				
	13= Condenser water pump thermal protection alarm				
	14 Condensor flow switch alarm				
1					
	15= not used			L	
CF12	ID1 input polarity	0	1		
1	0= active for closed contact				
1	1 = active for open contact				
0510	ID2 inst adjoint		1		
6F13		U		1	
	0= active for closed contact		1	1	
	1= active for open contact		1	1	
CE14	ID3 input polarity	0	1	İ.	t
0114	Do input politiky	0		1	
	u= active for closed contact		1	1	
	1 = active for open contact				
CF15	ID4 input polarity	0	1		
	0= active for closed contact	1	1	1	
	1 active for open contact		1	1	
		-	<u> </u>		ļ
CF16	ID5 input polarity	0	1	1	
	0= active for closed contact				
	1= active for open contact		1	1	
CE17	Dh1 input polarity	0	1		1
		U			
1	U= active for closed contact				
1	1 = active for open contact				
CF18	Ph2 input polarity	Ο	1	1	
0110	0 active for elecad contact	0		1	
	u= active for closed contact		1	1	
	1 = active for open contact				
CF19	Pb4 input polarity	0	1		
	0= active for closed contact	1	1	1	
	1- active for open contact		1	1	
				1	1

0500		0	4.0	1	
CF20	RL4 configuration of the relay 4	0	10		
	0 = Alarm relay				
	1 - compressor 1 canacity stan				
	- compressor i capacity step				
	2 = compressor 2				
	3 = ON/OFF ventilation				
	4 = Teversning valve				
	5 = anti-freezer heaters / integration heater n.1				
	6 = solenoid valve on water circuit				
	/ = solenoid valve on water circuit only for heat pump				
	8= anti-freezer heaters / integration heater n_2				
	9 = evaporator water pump / supply ran (ar / ar unit)				
	10= condenser water pump				
0001	DIE configuration of the relevie	0	10		
GFZT	RES configuration of the relay 5	0	10		
	0 = Alarm relay				
	1 - compressor 1 capacity step				
	- compressor i capacity step				
	2 = compressor 2				
	3 = ON/OFE ventilation				
	4 = reversing valve				
	5 = anti-freezer heaters / integration heater n 1				
	o = solenoid valve on water circuit				
	7 = solenoid valve on water circuit only for heat pump				
	P_{-} anti fractor heaters / integration heater n 2				
	o – anti-neezer nearers / integration nearer in 2				
	9 = evaporator water pump / supply fan (air / air unit)				
	10= condenser water nump				
0500			50.0		
CF22	4mA / 0,5V corresponding to the pressure value of the transducer	0.0	50.0	Bar	Decimal
		0	725	Psi	integer
0500	20mA/EV corresponding to the pressure value of the transducer	00	720	Der	Desimal
CF23	20mA / 5V corresponding to the pressure value of the transducer	0.0	50.0	Bar	Decimai
		0	725	Psi	integer
0504	Did Offend	10.0	12.0		Desired
CF24	PDTOnset	-12.0	12.0	-0	Decimai
		-21	21	°F	integer
CE DE	Dh2 Offeet	12.0	12.0	°C	Decimal
CF25	Pbz Oliset	-12.0	12.0	C	Decimal
		-21	21	°F	integer
0524	Dh2 Offeet	12.0	12.0	°C	Decimal
CF20	PD3 Offset	-12.0	12.0	C	Decimal
		-21	21	°F	Integer
		12.0	12.0	Dor	Docimal
		-12.0	12.0	Dai	Decimal
		-174	174	Psi	integer
CE27	Pb4 Offset	12.0	12.0	°C	Decimal
0121		-12.0	12.0	C	Decimal
		-21	21	°۲	integer
CF28	Chiller or Heat Pump configuration	0	1		
0120		v	-		
	U = chiller and heat pump selected by keyboard				
	1 = chiller and heat nump selected by digital input				
	2. Shills and had pump selected by digital input				
	2= chilier and heat pump selected by probe				
	3= only chiller unit				
	4 only boot nume unit				
	4= only heat pump unit				
CF29	Automatic Changeover Setpoint	-50.0	110	°C	Decimal
		58	230	°E	integer
		-00	230		Integel
CF30	Differential for functioning mode	0.1	25.0	°C	Decimal
		0	45	°F	integer
		0	4J	1	ппедеі
CF31	Chiller or Heat pump key configuration	0	1		
	· · · · · · · · · · · · · · · · · · ·				
	0= *** chiller / *** heat pump				
	· * · · ······ · · · · · · · · · · · ·				
	I = 🗚 chiller / 👫 heat pump				
CF32	Celsius or Fahrenheit selection	0	1		
01.02		Ŭ			
	U= C / BAR				
	1=°F/°psi				
CE22	Dower supply frequency	0	n	1	1
6133	Power supply frequency	U	Z		
	0= 50 Hz				
	1 = 60 Hz		1	1	
	2 = DC power supply (PWM contigrured as output for an external alarm relay)				
CF34	Serial Address for monitoring	1	247		
0505	Development for the function of the sector		277	+	
CF35	Remote terminal keyboard	0	2	1	
	0= Not used				
	1 4 kove		1	1	
1	I = 0 Keys		1	1	
1	2= 6 keys with NTC probe mounted on board		1	1	
CE24	Default viewing of upper display of the constaller	^	0	1	1
0130	Derault viewing of upper display of the controller	U	ŏ	1	
	0 = PB1 visualization		1	1	
	1 – DR2 visualization		1	1	
			1	1	
	2 = No visualization		1	1	
	3 = PB4 visualization		1	1	
			1	1	
	4 = Real working set point (set point modified from Energy Saving, Dynamic set point, function for units		1	1	
	without water storage tank)			1	
				1	
	5 = Unit status			1	
	6 = No visualization	1		1	
		1		1	
1		1		1	
1	8 = Working differential	1		1	
1	9 – Unit set point (parameter value)	1		1	
		L		1	
CF37	Firmware Release		1	1	
CE20	Febrom Darameter manning				

				1	
CF39	RL2 configuration	0	10		
	0 = Alarm relay				
	i = compressor i capacity step				
	2 = compressor 2				
	3 = ON/OFF ventilation				
	A = reversing value				
	E optification hasters / integration haster n 1				
	5 = anti-freezer neaters / integration neater n. i				
	6 = solenoid valve on water circuit				
	7 = solenoid valve on water circuit only for heat numb				
	P_{-} anti franzer botters (integration botter p_{-}				
	o = anti-meeter meaters / integration meater in. z				
	9 = evaporator water pump / supply fan (air / air unit)				
	10= condenser water pump				
CE40	PL3 configuration	Ο	10		
01 40		0	10		
	0 = Alarm relay				
	1 = compressor 1 capacity step				
	2 = compressor 2				
	2 - ON/OEE vontilation				
	4 = reversing valve				
	5 = anti-freezer heaters / integration heater n.1				
	6 = solenoid valve on water circuit				
	7 - solonoid valvo on water circuit only for heat nump				
	7 = solehold valve on water circuit only for heat pump				
	8= anti-freezer heaters / integration heater n. 2				
	9 = evaporator water pump / supply fan (air / air unit)				
	10= condenser water nump				
05.44		0	10		
CF41	Open collector output conliguration	0	10		
	0 = Alarm relay				
	1 = compressor 1 capacity step				
	3 = ON/OFF ventilation				
	4 = reversing valve				
	5 = anti-freezer heaters / integration heater n 1				
	o = solehold valve on water circuit				
	7 = solenoid valve on water circuit only for heat pump				
	8= anti-freezer heaters / integration heater n. 2				
	9 = evanorator water nump / supply fan (air / air unit)				
	Tu= condenser water pump				
CF42	Switching time of reversing valve when the compressor is switched off	0	250		
CF43	Default viewing of lower display of the controller	0	8		
01 43		0	0		
	1 = PB2 visualization				
	2 = PB3 visualization				
	3 - DB4 visualization				
	J - T D4 Visualization				
	4 = Real working set point (set point modified from Energy Saving, Dynamic set point, function for units				
	without water storage tank)				
	5 = Unit status				
	6 Check				
	/ = No visualization				
	8 = Woking differential				
	9 = 1 luit set point (parameter value)				
0544	Defeution for a function variable and the remeter low heard	0	0		
CF44	Default viewing of upper display of the remote keyboard	U	8		
	0 = PB1 visualization				
	1 = PB2 visualization				
	2 - no visualization (display off)				
	3 = PB4 VISUAIIZATION				
	4 = Real working set point (set point modified from Energy Saving, Dynamic set point, function for units				
	without water storage tank)				
	5 – Unit status				
	Constants Constants				
	7 = No visualization (display off)				
	8 = Woking differential				
	9 – Unit set point (parameter value)				
0545		^	0		
CF45	Default viewing of lower display of the remote keyboard	0	8		
	0 = PB1 visualization				
	1 = PB2 visualization				
	2 - DB3 visualization				
	3 = PB4 VISUAIIZATION				
	4 = Real working set point (set point modified from Energy Saving, Dynamic set point, function for units				
	without water storage tank)				
	E Unit otorio				
	5 = Unit status				
	6 = Clock				
	7 = No visualization				
	8 - Waking differential				
	9 = Unit set point (parameter value)				
CF46	Controller: visualization in Std-by mode	0	2		
1 12	0 - default visualization (CE36 and CE43 parameters)	-	-		
	i = the display visualizes "OFF"				
	2 = the display visualizes "StbY"				

CF47	Remote keyboard: visualization in Std-by mode	0	2		
	0 = default visualization (CF36 and CF43 parameters)				
	1 = the display visualizes "OFF"				
	2 = the display visualizes "StbY"				
CE48	Analog output configuration	0	1		
01 40	a = 4.20mA	0	· ·		
	1 - 0.10				
Dr2	Desword value	0	000		
FIZ	Password value	0	777		
Doromotor	Departmention	Min	Mov	Maga	Decolution
Parameter	Description		IVIAX	weas	Resolution
<mark>5001</mark>		0			
0.100		00.0			D
Sd02	Maximum summer dynamic Offset	- 30.0	30.0	°C	Decimal
0.100		-54	54	-F	Integer
Sd03	Maximum winter dynamic Offset	- 30.0	30.0	°C	Decimal
		-54	54	۳F	integer
Sd04	External air d. setpoint during summer	-50.0	110	°C	Decimal
		-58	230	۰F	integer
Sd05	External air d. setpoint during winter	-50.0	110	°C	Decimal
		-58	230	°F	integer
Sd06	External air differential during summer	- 30.0	30.0	°C	Decimal
		-54	54	°F	integer
Sd07	External air differential during winter	- 30.0	30.0	°C	Decimal
		-54	54	°F	integer
Pr2	Password value	0	999		
	Energy Saving				
Parameter	Description	Min	Max	Meas	Resolution
ES01	Energy saving starting hour (0÷24)	0	23.50	Min	10 Min
ES02	Energy saving ending hour $(0 \div 24)$	0	23.50	Min	10 Min
FS03FS09	Monday Sunday	0	1		
20002007	0 = Not enabled	Ŭ			
	1= Enabled				
FS10	Energy saving setnoint offset in chiller	-30.0	30.0	°C	Decimal
2010	Energy saving scipoline on set in chiner	-54	54	°F	integer
F\$11	Epergy saving differential in chiller	0.1	25.0	°C	Decimal
LJII	Lifergy saving differential in chiller	0.1	25.0	°E	integer
E\$12	Enorgy saving satisfiest in heat nump	20.0	20.0	۱ ۰C	Docimal
LJIZ	Lifergy saving setpoint onset in near pump	-30.0	50.0	°⊑	intogor
FC12	Energy caving differential in heat numn	-54	25.0	۱ ۰C	Desimal
ESIS	i Elleruv Savinu dillerential in neal pump		/5/11		Decimal
		0.1	25.0	ог	integer
Dr2		0.1	45	°F	integer
Pr2	Password value	0	45 999	°F	integer
Pr2	Password value Compressor parameters	0.1	45 999	°F	integer
Pr2 Parameter	Password value Compressor parameters Description	0.1 0 0 Min	45 999 Max	°F	Resolution
Pr2 Parameter CO01	Password value Compressor parameters Description Minimum ON time	0.1 0 0 Min 0	45 999 Max 250	°F Meas. Sec	Resolution
Pr2 Parameter CO01 CO02	Password value Compressor parameters Description Minimum ON time Minimum OFF time	0.1 0 0 0 0	45 999 Max 250 250	°F Meas. Sec Sec	Resolution 10Sec
Pr2 Parameter CO01 CO02 CO03	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve	0.1 0 0 0 0 0 1	45 999 Max 250 250 250	°F Meas. Sec Sec Sec	Resolution 10Sec 10Sec
Pr2 Parameter C001 C002 C003 C004	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve	0.1 0 0 0 0 0 1 0	45 999 Max 250 250 250 250 250	°F Meas. Sec Sec Sec Sec	Resolution 10Sec 10Sec
Pr2 Parameter C001 C002 C003 C004 C005	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve Output time delay after power supply start-up	0.1 0 0 0 0 0 1 0 0 0	45 999 Max 250 250 250 250 250	°F Meas. Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation	0.1 0 0 0 0 0 1 0 0 1	45 999 250 250 250 250 250 250 250	°F Meas. Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve OUtput time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" de-activation	Min 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 0 0	45 999 250 250 250 250 250 250 250 250	°F Meas. Sec Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve OUtput time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" de-activation Compressor rotating control	Min 0 0 0 0 0 1 0 0 1 0 0 1 0 0 0	45 999 250 250 250 250 250 250 250 250 250 1	°F Meas. Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve OUtput time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" de-activation Compressor rotating control 0= Enabled	Min 0 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0	45 999 250 250 250 250 250 250 250 250 250 1	°F Meas. Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" de-activation Compressor rotating control 0 = Enabled 1 = Fixed sequence	Min 0	45 999 250 250 250 250 250 250 250 250 250 1	°F Meas. Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09	Password value Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" de-activation Compressor rotating control 0 = Enabled 1 = Fixed sequence Time delay for solenoid valve of water side	Min 0	45 999 250 250 250 250 250 250 250 250 1 1	°F Meas. Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO09 CO10	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" de-activation Compressor rotating control 0 = Enabled 1 = Fixed sequence Time delay for solenoid valve of water side Stage vale polarity	Min 0	45 999 250 250 250 250 250 250 250 250 250 1	©F Meas. Sec Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" de-activation Compressor rotating control 0= Enabled 1= Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0= Capacity stage ON	0.1 0 0 0 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 250 250 1 1 250 1	©F Meas. Sec Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor OF delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" de-activation Compressor rotating control 0= Enabled 1= Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0= Capacity stage ON 1= Capacity stage OFF	0.1 0 0 0 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 250 250 1 1 250 1	°F Meas. Sec Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor OF delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" de-activation Compressor rotating control 0= Enabled 1= Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0= Capacity stage ON 1= Capacity stage OFF Water pump / Supply fan operating mode	0.1 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 250 1 1 250 1 4	°F Meas. Sec Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor OF delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" de-activation Compressor rotating control 0= Enabled 1= Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0= Capacity stage ON 1= Capacity stage OFF Water pump / Supply fan operating mode 0= Not used	Min 0 0 0 1 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 250 1 1 250 1 4	°F Meas. Sec Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" de-activation Compressor rotating control 0= Enabled 1= Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0= Capacity stage ON 1= Capacity stage OFF Water pump / Supply fan operating mode 0= Not used 1= Always on (ON/OFF output)	0.1 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 250 1 1 250 1 4	°F Meas. Sec Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11	Password value Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor On delay time after Pump/"Supply fan" de-activation Compressor rotating control 0= Enabled 1= Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0= Capacity stage ON 1= Capacity stage OFF Water pump / Supply fan operating mode 0= Not used 1= Always on (ON/OFF output) 2= ON if the compressor is on (ON/OFF output)	0.1 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 250 1 1 250 1 4	°F Meas. Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11	Password value Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" de-activation Compressor OFF delay time after Pump/"Supply fan" de-activation Compressor orbiting control 0 = Enabled 1 = Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0 = Capacity stage ON 1 = Capacity stage OFF Water pump / Supply fan operating mode 0 = Not used 1 = Always on (ON/OFF output) 2 = ON if the compressor is on (ON/OFF output) 3 = Always on (4+20mA output)	0.1 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 250 1 1 250 1 4	°F Meas. Sec Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11	Password value Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" de-activation Compressor rotating control 0= Enabled 1= Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0= Capacity stage ON 1= Capacity stage OFF Water pump / Supply fan operating mode 0= Not used 1= Always on (ON/OFF output) 2= ON if the compressor is on (ON/OFF output) 3= Always on (4+20mA output) 4= ON if compressor is ON (4+20mA output)	0.1 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 1 1 250 1 4	°F Meas. Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11 CO11	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OUtput time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" de-activation Compressor rotating control 0 = Enabled 1 = Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0 = Capacity stage ON 1 = Capacity stage OFF Water pump / Supply fan operating mode 0 = Not used 1 = Always on (ON/OFF output) 2 = ON if the compressor is on (ON/OFF output) 3 = Always on (4+20mA output) 4 = ON if compressor is ON (4+20mA output)	0.1 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 1 1 250 1 4	°F Meas. Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11 CO11	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OUtput time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" de-activation Compressor rotating control 0 = Enabled 1 = Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0 = Capacity stage ON 1 = Capacity stage OFF Water pump / Supply fan operating mode 0 = Not used 1 = Always on (ON/OFF output) 2 = ON if the compressor is on (ON/OFF output) 3 = Always on (4+20mA output) 4 = ON if compressor is ON (4+20mA output) 0 = Enabled	Min 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 1 1 250 1 4	°F Meas. Sec Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11 CO11 CO12	Password value Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OEFE delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor of delay time after Pump/"Supply fan" de-activation Compressor rotating control 0 = Enabled 1 = Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0 = Capacity stage ON 1 = Capacity stage OFF Water pump / Supply fan operating mode 0 = Not used 1 = Always on (ON/OFF output) 2 = ON if the compressor is on (ON/OFF output) 3 = Always on (4+20mA output) 4 = ON if compressor is ON (4+20mA output) Compressor 1 0 = Enabled 1 = OFF	Min 0 0 0 1 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 1 1 250 1 4	©F Meas. Sec Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11 CO11 CO12 CO13	Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor or delay time after Pump/"Supply fan" de-activation Compressor rotating control 0 = Enabled 1 = Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0 = Capacity stage ON 1 = Capacity stage OFF Water pump / Supply fan operating mode 0 = Not used 1 = Always on (ON/OFF output) 2 = ON if the compressor is on (ON/OFF output) 3 = Always on (4+20mA output) 4 = ON if compressor 1 0 = Enabled 1 = OFF Compressor 2 / Stage valve.	0.1 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 250 1 1 250 1 1 1 1	©F Meas. Sec Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11 CO11 CO12 CO12 CO13	Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OEscription OVER delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor OFE delay time after Pump/"Supply fan" de-activation Compressor of FE delay time after Pump/"Supply fan" de-activation Compressor of FE delay time after Pump/"Supply fan" de-activation Compressor of FE delay time after Pump/"Supply fan" de-activation Compressor of FE delay time after Pump/"Supply fan" de-activation Compressor of FE delay time after Pump/"Supply fan" de-activation Compressor of FE delay time after Pump/"Supply fan" de-activation Compressor of the delay for solenoid valve of water side Stage vale polarity 0 0 = Not used <t< td=""><td>0.1 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>45 999 250 250 250 250 250 250 250 250 1 1 250 1 1 1 1</td><td>©F Meas. Sec Sec Sec Sec Sec Sec Sec Sec</td><td>Resolution 10Sec 10Sec 10Sec</td></t<>	0.1 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 250 1 1 250 1 1 1 1	©F Meas. Sec Sec Sec Sec Sec Sec Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11 CO11 CO12 CO12	Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor or Delay time after Pump/"Supply fan" de-activation Compressor or otating control 0= Enabled 1= Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0= Capacity stage ON 1= Capacity stage OFF Water pump / Supply fan operating mode 0= Not used 1= Always on (ON/OFF output) 2= ON if the compressor is on (ON/OFF output) 3= Always on (4+:20mA output) 4= ON if compressor is ON (4+:20mA output) Compressor 1 0 = Enabled 1 = OFF Compressor 2 / Stage valve. 0 = Enabled 1 = OFF	0.1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 250 1 1 250 1 1 1 1	©F Meas. Sec Sec Sec Sec Sec Sec Sec C Sec Sec	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11 CO11 CO12 CO12 CO13 CO14	Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OFF delay time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor or DFF delay time after Pump/"Supply fan" de-activation Compressor rotating control 0 = Enabled 1 = Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0 = Capacity stage ON 1 = Capacity stage OFF Water pump / Supply fan operating mode 0 = Not used 1 = Always on (0N/OFF output) 2 = ON if the compressor is ON (0A+20mA output) 2 = ON if compressor is ON (4+20mA output) 2 = Enabled 1 = OFF Compressor 2 / Stage valve. 0 = Enabled 1 = OFF Hour counter setpoint for 1st compressor	0.1 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 1 1 250 1 1 4 1 1	 F F Sec Sec Sec Sec Sec Sec Sec Sec Sec Hr 	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11 CO11 CO12 CO12 CO13 CO14 CO15 CO14 CO15	Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OUptuit time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" activation Compressor OFF delay time after Pump/"Supply fan" de-activation Compressor Or Supply fan ter enter Pump/"Supply fan" de-activation Compressor or totaling control 0 = Enabled 1 = Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0 = Capacity stage OFF Water pump / Supply fan operating mode 0 = Not used 1 = Always on (ON/OFF output) 2 = ON if the compressor is on (ON/OFF output) 3 = Always on (4+20mA output) Compressor 1 0 = Enabled 1 = OFF Compressor 2 / Stage valve. 0 = Enabled 1 = OFF Hour counter setpoint for 1st compressor	0.1 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 1 1 250 1 1 1 1 1 1 1	 F F Meas. Sec Sec Sec Sec Sec Sec Sec Sec Hr Hr Hr 	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11 CO11 CO12 CO12 CO13 CO14 CO15 CO16	Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OUtput time between two compressors or Comp. and valve Output time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor on delay time after Pump/"Supply fan" de-activation Compressor rotating control 0 = Enabled 1 = Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0 = Capacity stage ON 1 = Capacity stage OFF Water pump / Supply fan operating mode 0 = Not used 1 = Always on (ON/OFF output) 2 = ON if the compressor is on (ON/OFF output) 3 = Always on (4+20mA output) 4 = ON if compressor is ON (4+20mA output) Compressor 1 0 = Enabled 1 = OFF Compressor 2 / Stage valve. 0 = Enabled 1 = OFF Compressor 2 / Stage valve. 0 = Enabled 1 = OFF Compressor 2 / Stage valve. 0 = Enabled	0.1 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 1 1 250 1 1 4 1 1 1 999 999 999	 F F Meas. Sec Sec Sec Sec Sec Sec Sec Sec Sec Hr Hr Hr Hr 	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11 CO11 CO12 CO12 CO12 CO13 CO14 CO15 CO16 CO16 CO16	Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OUtput time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor on delay time after Pump/"Supply fan" de-activation Compressor rotating control 0= Enabled 1= Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0= Capacity stage ON 1= Capacity stage OFF Water pump / Supply fan operating mode 0= Not used 1= Always on (ON/OFF output) 2= ON if the compressor is on (ON/OFF output) 3= Always on (4+20mA output) 4= ON if compressor is ON (4+20mA output) Compressor 1 0 = Enabled 1 = OFF Compressor 2 / Stage valve. 0 = Enabled 1 = OFF Hour counter setpoint for 1st compressor Hour counter setpoint for 1st compressor Hour counter setpoint for 1st compressor Hour counter setpoint for pump/"Supply fan*	0.1 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 1 1 250 1 1 1 250 1 1 1 1 999 999 999	 °F Meas. Sec Sec Sec Sec Sec Sec Sec Sec Sec Hr Hr Hr Hr 	Resolution 10Sec 10Sec 10Sec
Pr2 Parameter CO01 CO02 CO03 CO04 CO05 CO06 CO07 CO08 CO09 CO10 CO11 CO11 CO11 CO12 CO12 CO13 CO14 CO15 CO16 CO17	Compressor parameters Description Minimum ON time Minimum OFF time ON delay time between two compressors or Comp. and valve OUtput time delay after power supply start-up Compressor On delay time after Pump/"Supply fan" activation Compressor OFE delay time after Pump/"Supply fan" de-activation Compressor on delay time after Pump/"Supply fan" de-activation Compressor rotating control 0 = Enabled 1 = Fixed sequence Time delay for solenoid valve of water side Stage vale polarity 0 = Capacity stage ON 1 = Capacity stage OFF Water pump / Supply fan operating mode 0 = Not used 1 = Atways on (ON/OFF output) 2 = ON if the compressor is on (ON/OFF output) 3 = Atways on (A+20mA output) 4 = ON if compressor is ON (4+20mA output) Compressor 1 0 0 = Enabled 1 = OFF Compressor 2 / Stage valve. 0	0.1 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	45 999 250 250 250 250 250 250 250 1 1 250 1 1 1 250 1 1 1 250 1 1 1 250 1 1 1 250 1 1	 °F Meas. Sec Sec Sec Sec Sec Sec Sec Sec Sec Hr Hr Hr Hr Hr 	Resolution 10Sec 10Sec 10Sec 10Sec

CO18	Unloading Differential (evaporator side)	0.1	25.0 45	°C °F	Dec int				
CO19	Delay unloading function (evaporator side)	0	250	Sec	10 Sec				
CO20	Maximum unloading operation time in case of high evaporator temperature	0	250	Sec	10 Sec				
Unloading condenser									
CO21	Unloading pressure set point in chiller mode (condenser side)	0.0	50.0	Bar	Dec				
		0	725	Psi	int				
CO22	Unloading pressure differential in chiller mode (condenser side)	0.0 0	12.0 174	Bar Psi	Dec int				
CO23	Unloading pressure set point in heat pump mode (condenser side)	0.0	50.0	Bar	Dec				
C014	Unleading processes differential in best nump made (condensor side)	0	125	PSI	Int				
C024	Unioading pressure differentiar in near pump mode (condenser side)	0.0	12.0	Psi	int				
CO25	Maximum unloading operation time in condenser side	0	250	Sec	10 Sec				
	Water pump condenser	-	T	-	•				
CO26	Condenser water pump operating mode	0	2						
	0= Not used								
	1 = Continuous opeanion 2 - Only for compressor domand								
C027	Delay between condenser nums shutdown and compressor shutdown	0	250	Sec					
CO28	SET hour counter of water condenser pump	0	999	Hr	10 Hr				
0020	Compressors in tandem mode	, v	,,,,	1	1011				
CO29	Maximum continuous operating time of a compressor	0	250	Min					
CO30	Compressor start-up delay after activation of the water solenoid valve	0	250	sec	10 Sec				
	Modulating evaporator water pump			•					
CO31	Peak time of modulating pump at maximum speed required by regulation	0	250	sec					
CO32	Minimum speed % of modulating pump in operation with enabled compressor (Chiller)	30	100	%					
CO33	Minimum speed % of modulating pump in operation with enabled compressor (Heat Pump)	30	100	%					
CO34	Speed % of modulating pump in operation with enabled compressor	30	100	%					
CO35	Set point modulating pump in chiller mode (evaporator outlet temperature)	-50.0 -58	110 230	°C °F	Dec int				
CO36	Temperature control band for the modulating pump in chiller function	0.0	25.0	°C	Dec				
CO37	Delay for switching off compressor by beat regulation with water pump < 100 % in chiller function	0	40	F	IIIL				
CO38	Set point modulating pump in beat pump mode (evaporator outlet temperature)	-50.0	110	°C	Dec				
0030	Set point modulating pump in neat pump mode (evaporator outlet temperature)	-58	230	°F	int				
CO39	Temperature control band for the modulating pump in heat pump function	0.0	25.0	°C	Dec				
	2	0	45	°F	int				
CO40	Delay for switching off compressor by regulation with water pump < 100 % in HP function	0	250	sec					
Pr2	Password	0	999						
	Condenser Fan control parameter	1		1					
Parameter	Description	Min	Max	Meas.	Resolution				
FA01	Fan output	0	1						
	1= Enabled								
FA02	Fan regulation	0	2						
	0= On when compressor On								
	1= ON / OFF								
FA02	2= Proportional speed control	0	1						
FA03	Fairfelateu to compressor	0	I						
	1= Independent from compressor								
FA04	Maximum speed time when the fan starting	0	250	Sec					
FA05	Phase difference fan	0	20	Micro	250µs				
FA04	Netwood			Sec					
FA00		0	250	Soc					
FA08	L DOUIDA DES VADIUSIAN DEFAES LUN COMPRESSOE			JEL					
1.000	Cooling pre-ventilation before UN compressor Minimum fan sneed in summer	20	100	%					
FA09	Cooling pre-ventilation before ON compressor Minimum fan speed in summer Maximum fan speed in summer	30	100	%					
FA09 FA10	Cooling pre-ventilation before ON compressor Minimum fan speed in summer Maximum fan speed in summer Temperature / pressure setpoint for minimum speed in summer	30 30 -50.0	100 100 110	% % °C	Decimal				
FA09 FA10	Cooling pre-ventilation before ON compressor Minimum fan speed in summer Maximum fan speed in summer Temperature / pressure setpoint for minimum speed in summer	30 30 -50.0 -58	100 100 110 230	% % °C °F	Decimal integer				
FA09 FA10	Cooling pre-ventilation before ON compressor Minimum fan speed in summer Maximum fan speed in summer Temperature / pressure setpoint for minimum speed in summer	30 30 -50.0 -58 0.0	100 100 110 230 50	% % °C °F Bar	Decimal integer Decimal				
FA09 FA10	Cooling pre-ventilation before ON compressor Minimum fan speed in summer Maximum fan speed in summer Temperature / pressure setpoint for minimum speed in summer	30 30 -50.0 -58 0.0 0	100 100 110 230 50 725	% % °C °F Bar Psi	Decimal integer Decimal integer				
FA09 FA10 FA11	Cooling pre-ventilation before ON compressor Minimum fan speed in summer Maximum fan speed in summer Temperature / pressure setpoint for minimum speed in summer Temperature / pressure setpoint for maximum speed in summer	30 30 -50.0 -58 0.0 0 -50.0	100 100 110 230 50 725 110	% °C °F Bar Psi °C	Decimal integer Decimal integer Decimal				
FA09 FA10 FA11	Cooling pre-ventilation before ON compressor Minimum fan speed in summer Maximum fan speed in summer Temperature / pressure setpoint for minimum speed in summer Temperature / pressure setpoint for maximum speed in summer	30 30 -50.0 -58 0.0 0 -50.0 -58 -58	100 100 110 230 50 725 110 230	% % °C °F Bar Psi °C °F	Decimal integer Decimal integer Decimal integer				
FA09 FA10 FA11	Cooling pre-ventilation before UN compressor Minimum fan speed in summer Maximum fan speed in summer Temperature / pressure setpoint for minimum speed in summer Temperature / pressure setpoint for maximum speed in summer	30 30 -50.0 -58 0.0 0 -50.0 -58 0.0 0	100 100 110 230 50 725 110 230 50 725	% °C °F Bar Psi °C °F Bar Psi	Decimal integer Decimal integer Decimal integer Decimal				

FA12	Proportional band in summer	0.0	25.0	°C °F	Decimal
		0.0	50.0	Bar	Decimal
		0	725	Psi	Integer
FA13	CUT-OFF differential in summer	0.0	25.0	°C	Decimal
		0	45	°F	integer
		0.0	50.0 725	Bar Psi	Decimal
FA14	Override CUT-OFF in summer	0.0	25.0	°C	Decimal
		0	45	°F	integer
		0.0	50.0 725	Bar	Decimal
FA15	Delay time for CUT-OFF	0	250	Sec	integer
FA16	Fan speed in summer night function	30	100	%	
FA17	Minimum fan speed in winter	30	100	%	
FA18 FΔ19	Maximum ian speed in winter Temperature / pressure setpoint for minimum speed in winter	-50.0	100	% °C	Decimal
17(17	remperature / pressure serpencies minimum speed in writer	-58	230	°F	integer
		0.0	50	Bar	Decimal
EA20	Temperature / pressure setucint for maximum speed in winter	50.0	125	PSI °C	Integer
1 720	remperature / pressure setpoint for maximum speed in winter	-58	230	°F	integer
		0.0	50	Bar	Decimal
FA01	Dranational hand in winter	0	725	Psi	integer
FAZI		0.0	25.0 45	°F	integer
		0.0	50.0	Bar	Decimal
FA00		0	725	Psi	integer
FAZZ	CUT-OFF differential in winter	0.0	25.0 45	°F	Decimal integer
		0.0	50.0	Bar	Decimal
		0	725	Psi	integer
FA23	Override CUI-OFF in winter	0.0	25.0 45	°C °F	Decimal
		0.0	50.0	Bar	Decimal
		0	725	Psi	integer
FA24	Fan speed in winter night function Hot Start Function	30	100	%	
Parameter	Description	Min	Max	Meas.	Resolution
FA25	Hot Start Setpoint	-50.0	110	°C	Decimal
FA26	Hot Start differential	-58	230	°F	Integer
1 720		0.1	45	°F	integer
Pr2	Password	0	999		
Daramotor	Anti-freeze / Heater parameters	Min	Max	Moas	Pesolution
Ar01	Minimum value of Anti-Freeze Setpoint	-50.0		°C	Decimal
		-58	Ar03	°F	integer
Ar02	Maximum value of Anti-Freeze Setpoint	Ar03	110	°C	Decimal
Ar03	Anti-freeze Setpoint in chiller mode	Ar01	230 Ar02	°C/°F	Dec/int
Ar04	Anti-Freeze Differential in chiller mode	0	25.0	°C	Decimal
		0	45	°F	integer
Ar05	Anti-Freeze alarm delay Mavimum number of Anti-Freeze alarm events in 1 hour	0	250	Sec	
AIUU		0	10		
_					
Ar07	Anti-Freeze alarm delay after starting in Heat Pump	0 50.0	250	Sec	Docimal
AIUO	Anti-Freeze Selpoint of the electrical heater in chiller mode	-50.0	230	°F	integer
Ar09	Anti-Freeze Setpoint of the electrical heater in Heat Pump mode	-50.0	110	°C	Decimal
A-10	Anti Franza Catagint of outgrad algoritical bester (understunder units)	-58	230	°F	integer
ALIO	Anu-Freeze Setpoint of external electrical neater (water/water units)	-50.0 -58	230	°F	integer
Ar11			200	°C	Decimal
	Anti-Freeze Differential in Chiller	0.1	25.0	C	Decimar
	Anti-Freeze Differential in Chiller	0.1 0	25.0 45	°F	integer
Ar12	Anti-Freeze Differential in Chiller Anti-Freeze Differential in Heat Pump	0.1 0 0.1	25.0 45 25.0	°F °C °F	integer Decimal
Ar12 Ar13	Anti-Freeze Differential in Chiller Anti-Freeze Differential in Heat Pump Anti-freeze electrical heater regulation	0.1 0 0.1 0 0	25.0 45 25.0 45 1	°F °C °F	integer Decimal integer
Ar12 Ar13	Anti-Freeze Differential in Chiller Anti-Freeze Differential in Heat Pump Anti-freeze electrical heater regulation 0= enabled during regulation control	0.1 0 0.1 0 0	25.0 45 25.0 45 1	°F °C °F	integer Decimal integer

Ar14	Anti-freeze electrical heater regulation in Chiller mode	0	1		
	1= ON in chiller				
Ar15	Anti-freeze electrical heater regulation in H.P. mode 0= OFF in Heat Pump 1= ON in Heat Pump	0	1		
Ar16	Anti-freeze control probe in Chiller mode	0	3		
	0 = Pb1 1 = Pb2 2 = PB3 probe control 3 = PB4 probe control	Ŭ			
Ar17	Anti-freeze control probe in Heat Pump mode 0= Pb1 1= Pb2	0	3		
	2= PB3 probe control 3= PB4 probe control	-			
Ar18	"Water pump"/ "Anti-freeze electrical heater" control with unit in OFF or Stand-by 0= Regulation not enabled 1= Regulation enabled 2= Regulation of water pump/anti-freezer on probe PB4 configured as esternal temperature probe 3= Regulation of water pump / anti-freezer heaters on probe PB4 and separate set points	0	3		
Ar19	"Water pump"/ "Anti-freeze electrical heater" control for faulty probe 0= output OFF for faulty probe 1= output ON for faulty probe	0	1		
	Boiler Function				
Parameter	Description	Min	Max	Meas.	Resolution
Ar20	Boiler function 0= Integration control 1= Heating control	0	1		
<mark>Ar21</mark>	External air Setpoint for Boiler heater activation	-50.0 -58	110 230	°C °F	Decimal integer
Ar22	Boiler function differential	0.1	25.0 45	°C °F	Decimal integer
Ar24 Ar25	Activation delay time of neater n° 2	0 50.0	250	iviin °C	Dec
		-58	230	°F	Int
<mark>Ar26</mark>	Outside air differential for enabling the compressors	0.1 0	25.0 45	°C °F	Dec int
A = 27	Anti-freezer alarm in HP function	Ar01	Ar02	0C /0F	Dealint
Ar28	Anti-freeze alarm set point in heat pump mode	0	25.0	°C	Dec/Int
		0	45	°F	int
	Evaporator water pump functioning / condenser of ambient probe		I		I
Ar29	Evaporator/condenser water pump set point with external temperature regulation	-50.0 -58	110 230	°C °F	Dec int
Ar30	Evaporator/condenser water pump differential with external temperature regulation	0.1 0	25.0 45	°C °F	Dec int
۸r21	Condenser water pump functioning	0	2	1	1
	0= de-activated 1= Switched on in OFF or standby mode 2= Regulation of water pump/ anti-freeze heaters with probe PB4 configured as ambient probe 3= Regulation of the water pump / anti-freeze heaters with probe PB4 configured as ambient probe and separate set points.	0	3		
Ar32	Activation of condenser water pump / anti-freeze heaters in case of probe failure. 0= Off with probe fault 1= On with probe fault	0	1		
Pr2	Password	0	999		
-	Defrost Parameters	1	1		•
Parameter	Description	Min	Max	Meas.	Resolution
DFUT	0= No 1= Yes	0	I		
DF02	Defrost type 0= Temperature / pressure 1= Time 2= External contact	0	2		
DF03	Temperature / pressure Setpoint for starting the defrost cycle	-50.0 -58 0.0 0	110 230 50 725	°C °F Bar Psi	Decimal integer Decimal integer
DF04	Temperature / pressure Setpoint for stopping the defrost cycle	-50.0 -58 0.0 0	110 230 50 725	°C °F Bar Psi	Decimal integer Decimal integer
DF05	Minimum delay time before starting a forced defrost cycle	0	250	Sec	
				-	1

DF07	Maximum defrost duration	0	250	Min	
DE08	Compressor Off time before starting a defrost cycle	n n	250	Ser	1
DF09	Compressor Off time after a defrost cycle	0	250	Sec	
DF10	Interval time hetween defrost cycles	1	00	MIN	
DE11	Tomporature setucit denosi cycles	50.0	110	°C	Docimal
DETT	remperatore serpoint to start a combined denost cycle after the DF to counting time	-50.0	230	°F	integer
DF12	Temperature Setpoint to stop a combined defrost	-50.0	110	°C	Decimal
DE11	Farand adduction of the Ord compression in defract	-58	230	°F	integer
DF13	0= Not enabled 1= Fnabled	0	1		
DF14	Forced fan activation during defrost and draining times	0	2		
	0= Not enabled 1= Enabled only for defrost 2= Enabled for defrost and draining time (dE00)				
DF15	Zemperature/Pressure Setpoint to start a forced condensing fan control in defrost cycle	-50.0	110	°C	Decimal
0115		-58	230	°F	integer
		0.0	50	Bar	Decimal
		0	725	Psi	integer
DF16	Low alarm control during defrost 0= Not enabled 1= Enabled	0	1		
DF17	Low alarm delay time after changing the status of the 4-ways valve	0	250	Sec	
DF18	4-ways reversing valve 0= ON in cooling 1= ON in heating	0	1		
DF19	Temperature/pressure Setpoint to start a forced defrost cycle	-50.0	110	°C	Decimal
		-58	230	°F	integer
		0.0	50	bar	Decimal
		0	725	psi	integer
DF20	Forced defrost cycle differential	0.0	25.0	°C	Decimal
		0	45	°F	Integer
		0.0	50.0		Decimal
		0	725		Integer
DF21	Fan status during defrost	0	1		
Pr2	Password	0	999		
	Alarm Daramatar				
				1.5.4	
Parameter	Description	Min	Max	Meas.	Resolution
Parameter AL01	Description Low pressure alarm delay time Maximum law pressure alarm available in 1 hours	Min 0	Max 250	Meas. Sec	Resolution
Parameter AL01 AL02	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour	Min 0 0	Max 250 16	Meas. Sec	Resolution
Parameter AL01 AL02 AL03	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor Oe. Not enabled when compressor Off	Min 0 0 0	Max 250 16 1	Meas. Sec	Resolution
Parameter AL01 AL02 AL03	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off	Min 0 0	Max 250 16 1	Meas. Sec	Resolution
Parameter AL01 AL02 AL03	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting	Min 0 0	Max 250 16 1	Meas. Sec	Resolution
Parameter AL01 AL02 AL03 AL04 AL04	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump.	Min 0 0 0	Max 250 16 1 250 250	Meas. Sec Sec	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration	Min 0 0 0 0	Max 250 16 1 250 250 250 250	Meas. Sec Sec Sec Sec	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection" input de-activation duration	Min 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250	Meas. Sec Sec Sec Sec Sec	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input de-activation duration Thermal protection alarm delay after starting the compressor	Min 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250	Meas. Sec Sec Sec Sec Sec Sec Sec	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection" input de-activation duration Thermal protection alarm delay after starting the compressor Number of maximum thermal protection alarm events.	Min 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 16	Meas. Sec Sec Sec Sec Sec Sec	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input activation duration Thermal protection alarm delay after starting the compressor Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour	Min 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 16 16 16	Meas. Sec Sec Sec Sec Sec Sec Sec	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input de-activation duration Thermal protection alarm delay after starting the compressor Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 250 250 250 250 250 16 16 16 110	Meas. Sec Sec Sec Sec Sec Sec Sec Sec	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input de-activation duration Thermal protection alarm delay after starting the compressor Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 0 -58	Max 250 16 1 250	Meas. Sec Sec Sec Sec Sec Sec Sec Sec Sec Sec	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input de-activation duration Thermal protection alarm delay after starting the compressor Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 0 -58 0.0	Max 250 16 1 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 50	Meas. Sec Sec Sec Sec Sec Sec Sec Sec Sec Sec	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10 AL11	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off ?Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input de-activation duration Thermal protection alarm delay after starting the compressor Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 0 -58 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 20 50 725	Meas. Sec Sec Sec Sec Sec Sec Sec Sec °C °F Bar Psi	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10 AL11 AL12	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input de-activation duration Thermal protection alarm delay after starting the compressor Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250	Meas. Sec Sec Sec Sec Sec Sec Sec Sec Sec Sec	Resolution
Parameter AL01 AL02 AL03 AL05 AL06 AL07 AL08 AL09 AL10 AL11	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off *Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump *Water flow/Supply fan thermal protection" input activation duration *Water flow/Supply fan thermal protection" input de-activation duration Thermal protection alarm delay after starting the compressor Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe Temperature/pressure high alarm differential for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 16 16 16 16 10 230 50 725 25.0 45 50 50 50 50 50 50 50 50 50 5	Meas. Sec Sec Sec Sec Sec Sec Sec Sec Sec Sec	Resolution
Parameter AL01 AL02 AL03 AL05 AL06 AL07 AL08 AL09 AL10 AL10	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection" input de-activation duration Thermal protection alarm delay after starting the compressor Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe Temperature/pressure high alarm differential for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 <tr< td=""><td>Meas. Sec Sec Sec Sec Sec Sec Sec Sec °F Bar Psi °C °F Bar Psi °C °F</td><td>Resolution</td></tr<>	Meas. Sec Sec Sec Sec Sec Sec Sec Sec °F Bar Psi °C °F Bar Psi °C °F	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10 AL11 AL12	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection" input de-activation duration Thermal protection alarm delay after starting the compressor Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe Temperature/pressure high alarm differential for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 16 10 230 50 725 25.0 45 50.0 725 25.0 2	Meas. Sec Sec Sec Sec Sec Sec Sec Sec °F Bar Psi °C °F Bar Psi Sec	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10 AL10 AL11 AL12 AL12	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection alarm events. Maximum number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe Temperature/pressure high alarm differential for input probe Low pressure alarm delay for input probe Low pressure alarm delay for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 25.0 45 50.0 725 250 250	Meas. Sec Sec Sec Sec Sec Sec Sec Sec Sec Sec	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10 AL11 AL11 AL12 AL13 AL14	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection alarm events. Maximum number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe Temperature/pressure high alarm differential for input probe Low pressure alarm delay for input probe Low pressure alarm delay for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 250 25.0 45 50.0 725 250 250 250 110 230	Meas. Sec Sec Sec Sec Sec Sec Sec Sec Sec ° F Bar Psi ° C ° F Bar Psi Sec ° C ° C	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10 AL10 AL11 AL12 AL13 AL14	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection alarm events. Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe Temperature/pressure high alarm differential for input probe Low pressure alarm delay for input probe Low pressure alarm delay for input probe Low pressure alarm Setpoint for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 250	Meas. Sec Sec Sec Sec Sec Sec Sec Sec Sec Sec	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10 AL11 AL12 AL13 AL14	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input de-activation duration Thermal protection alarm delay after starting the compressor Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe Temperature/pressure high alarm differential for input probe Low pressure alarm delay for input probe Low pressure alarm Setpoint for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 0 -50.0 -58 0.0 0 0 -50.0 -58 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 250	Meas. Sec Sec Sec Sec Sec Sec Sec Sec Sec ° F Bar Psi ° C ° F Bar Psi Sec ° C ° F Bar Psi Sec Psi	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10 AL10 AL11 AL12 AL13 AL14 AL15	Description Low pressure alarm delay time Maximum low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input de-activation duration Thermal protection alarm delay after starting the compressor Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe Low pressure alarm delay for input probe Low pressure alarm delay for input probe Low pressure alarm delay for input probe Low pressure alarm Setpoint for input probe Low pressure differential for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 250 250 250 250 250 250 250 16 16 10 230 50 725 250 110 230 50 725 250 110 230 50 725 250	Meas. Sec Sec Sec Sec Sec Sec Sec Sec Sec ° F Bar Psi Sec ° C ° F Bar Psi Sec ° C ° F	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10 AL10 AL11 AL12 AL13 AL14 AL15	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0 - Not enabled when compressor Off 1 = Enabled when compressor Off Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input activation duration Thermal protection alarm delay after starting the compressor Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe Low pressure alarm delay for input probe Low pressure alarm delay for input probe Low pressure alarm Setpoint for input probe Low pressure alarm Setpoint for input probe Low pressure differential for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 250 250 250 250 250 250 250 10 230 50 725 250 110 230 50 725 250 110 230 50 725 25.0 45	Meas. Sec Sec Sec Sec Sec Sec Sec Sec Sec °C °F Bar Psi Sec °C °F Bar Psi Sec °C °F Bar Psi Sec °C °F	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10 AL10 AL11 AL12 AL13 AL14 AL15	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Karm revents Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration Thermal protection alarm delay after starting the compressor Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe Low pressure alarm delay for input probe Low pressure alarm delay for input probe Low pressure alarm Setpoint for input probe Low pressure differential for input probe Low pressure differentia	Min 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 250 250 250 250 250 250 250 16 16 10 230 50 725 250 110 230 50 725 250 110 230 50 725 25.0 45 50.0 725 25.0 45 50.0	Meas. Sec Sec Sec Sec Sec Sec Sec Sec Sec Sec	Resolution Resolution Decimal integer Decima
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10 AL10 AL11 AL12 AL13 AL14 AL15	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0 - Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection alarm events. Maximum number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe Low pressure alarm delay for input probe Low pressure alarm delay for input probe Low pressure alarm Setpoint for input probe Low pressure differential for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 0 -50.0 -58 0.0 0 0 0 0 -50.0 -58 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 16 110 230 50 725 25.0 45 50.0 725 250 110 230 50, 725 25,0 45 50,0 725 25,0 10 725 25,0 10 725 25,0 10 725 25,0 10 725 25,0 725 50,0 725 75 75 75 75 75 75 75 75 75 7	Meas. Sec Sec Sec Sec Sec Sec Sec Sec Sec C °C °F Bar Psi Sec °C °F Bar Psi Sec °C °F Bar Psi Sec Sec	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10 AL10 AL11 AL12 AL13 AL14 AL15 AL16	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0 - Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection" input de-activation duration "Water flow/Supply fan thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe Low pressure alarm delay for input probe Low pressure alarm delay for input probe Low pressure alarm Setpoint for input probe Low pressure differential for input probe Low pressure differential for input probe Maximum number of the low alarm events in 1 hour for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 -50.0 -58 0.0 0 0 0 0 -58.0 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 250 250 250 250 250 250 16 10 230 50 725 250 110 230 50 725 250 110 230 50 725 25.0 45 50.0 725 25.0 45 50.0 725 25.0 45 50.0 725 50.0 725 16	Meas. Sec Sec Sec Sec Sec Sec Sec Sec Sec °C °F Bar Psi Sec °C °F Bar Psi Sec °C °F Bar Psi Sec °C °F Bar Psi	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10 AL11 AL12 AL13 AL14 AL15 AL16 AL17	Description Low pressure alarm delay time Maximum low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input activation duration Thermal protection alarm delay after starting the compressor Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe Low pressure alarm delay for input probe Low pressure alarm delay for input probe Low pressure alarm delay for input probe Low pressure alarm Setpoint for input probe Low pressure differential for input probe	Min 0 0 0 0 0 0 0 0 0 0 0 -50.0 -58 0.0 0 0 0 0 -58.0 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 250 250 250 250 250 250 250 16 10 230 50 725 250 110 230 50 725 250 110 230 50 725 25.0 45 50.0 725 25.0 45 50.0 725 16 1	Meas. Sec Sec Sec Sec Sec Sec Sec Sec °C °F Bar Psi Sec °C °F Bar Psi Sec °C °F Bar Psi Sec °C °F Bar Psi Sec	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10 AL11 AL12 AL13 AL14 AL15 AL16 AL17	Description Low pressure alarm delay time Maximum low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off Water flow/Supply fan thermal protection* alarm delay after *water pump / supply air fan* starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump *Water flow/Supply fan thermal protection* input de-activation duration *Water flow/Supply fan thermal protection alarm events. Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe Low pressure alarm delay for input probe Low pressure alarm delay for input probe Low pressure alarm Setpoint for input probe Low pressure differential for input probe Alarm relay and buzzer activation when the unit is Off or stand-by 0= Alarm relay and buzzer enabled	Min 0 0 0 0 0 0 0 0 0 0 0 -58. 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 250 250 250 250 250 250 16 10 230 50 725 250 110 230 50 725 250 110 230 50 725 25.0 45 50.0 725 25.0 45 50.0 725 16 1	Meas. Sec Sec Sec Sec Sec Sec Sec Sec °C °F Bar Psi Sec °C °F Bar Psi Sec °C °F Bar Psi Sec °C °F Bar Psi	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10 AL11 AL12 AL13 AL14 AL15 AL16 AL17	Description Low pressure alarm delay time Maximum low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off "Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump "Water flow/Supply fan thermal protection" input activation duration "Water flow/Supply fan thermal protection" input de-activation duration Thermal protection alarm delay after starting the compressor Number of maximum thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe Low pressure alarm delay for input probe Low pressure alarm delay for input probe Low pressure alarm Setpoint for input probe Low pressure alarm Setpoint for input probe Low pressure alarm Setpoint for input probe Alarm relay and buzzer activation when the unit is Off or stand-by 0= Alarm relay and buzzer enabled	Min 0 0 0 0 0 0 0 0 0 0 0 0 -58.0 0 0 0 0 0 0 0 0 -58.0 0 0 0 0 0 0 0 -58.0 0 0 0 0 0 -58.0 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 250 250 250 250 250 16 10 230 50 725 250 110 230 50 725 250 110 230 50 725 25.0 45 50.0 725 25.0 45 50.0 725 16 1	Meas. Sec Sec Sec Sec Sec Sec Sec C °C °F Bar Psi Sec °C °F Bar Psi Sec °C °F Bar Psi Sec °C °F Bar Psi Sec	Resolution
Parameter AL01 AL02 AL03 AL04 AL05 AL06 AL07 AL08 AL09 AL10 AL10 AL11 AL12 AL12 AL13 AL14 AL15 AL16 AL17 AL18	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0 = Not enabled when compressor Off 1 = Enabled when compressor Off 1 = Enabled when compressor Off *Water flow/Supply fan thermal protection" alarm delay after "water pump / supply air fan" starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump *Water flow/Supply fan thermal protection" input de-activation duration *Water flow/Supply fan thermal protection input de-activation duration *Water flow/Supply fan thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm setpoint for input probe Low pressure alarm delay for input probe Low pressure alarm below the usar events in 1 hour for input probe Alarm relay and buzzer activation when the unit is Off or stand-by 0 = Alarm relay and buzzer disabled Alarm relay output/open collector polarity	Min 0 0 0 0 0 0 0 0 0 0 0 -50.0 -58 0.0 0 0 0 0 0 -58.0 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 250 250 250 250 250 16 10 230 50 725 250 110 230 50 725 25.0 45 50.0 725 25.0 45 50.0 725 25.0 45 50.0 725 16 1 1	Meas. Sec Sec Sec Sec Sec Sec Sec C °C °F Bar Psi Sec °C °F Bar Psi Sec °C °F Bar Psi Sec °C °F Bar Psi Sec	Resolution
Parameter AL01 AL02 AL03 AL05 AL06 AL07 AL08 AL09 AL10 AL10 AL11 AL12 AL13 AL14 AL15 AL16 AL17	Description Low pressure alarm delay time Maximum low pressure alarm events in 1 hour Low pressure alarm with off compressor 0= Not enabled when compressor Off 1= Enabled when compressor Off *Water flow/Supply fan thermal protection* alarm delay after *water pump / supply air fan* starting. Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump *Water flow/Supply fan thermal protection* input de-activation duration *Water flow/Supply fan thermal protection* input de-activation duration *Water flow/Supply fan thermal protection input activation duration *Water flow/Supply fan thermal protection input activation duration *Water flow/Supply fan thermal protection input activation duration *Water flow/Supply fan thermal protection input accentration duration Thermal protection alarm events. Maximum number of high temperature / condenser pressure alarm interventions per hour Condensing temperature/pressure high alarm differential for input probe Low pressure alarm delay for input probe Low pressure alarm delay for input probe Low pressure alarm delay for input probe Low pressure differential for input probe Alarm relay and buzzer cativation when the unit is Off or stand-by 0 = Al	Min 0 0 0 0 0 0 0 0 0 0 0 -50.0 -58 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	Max 250 16 1 250 250 250 250 250 250 250 250 250 250 250 250 16 10 230 50 725 250 110 230 50 725 250 110 230 50 725 25.0 45 50.0 725 25.0 45 50.0 725 16 1 1	Meas. Sec Sec Sec Sec Sec Sec °F Bar Psi Sec °C °F Bar Psi Sec °C °F Bar Psi °C °F Bar Psi °C °F Bar Psi	Resolution

AI 19	Allows to choose the probe for the anti- freezer heater alarm	0	4		
/121/	0 = Relative to Ar16 parameters in chiller mode - Ar17 in hp.	Ū			
	1= on Pb1 probe				
	2= on Pb2 probe				
	3= on Pb3 probe				
	4= on Pb4 probe				
AL20	Maximum number of general unit block alarm interventions per hour	0	16		
AL21	General alarm delay starting from digital input activation	0	250	Sec	
AL22	Delay to reset the general alarm starting from digital input de-activation	0	250	10 sec	10 sec
AL23	General alarm type:	0	1		
	0 = signaling only does not depend on AL20 (alarm relay and buzzer enabled), always reset automatically				
	1= the alarm blocks the unit; resetting of the alarm depends on the value of the AL20 parameter				
AL24	System's inlet water high temperature alarm set point	-50.0	110	°C	Dec
		-58	230	°F	int
AL25	System's inlet water high temperature alarm differential	0.1	25.0	°C	Dec
		0	45	°F	int
AL26	Delay time for signaling the system's inlet water high temperature alarm	0	250	10 sec	10 sec
AL27	Maximum number of system inlet high temperature alarm interventions per hour	0	16		
AL28	Condenser water flow alarm delay time	0	250	Sec	
AL29	Maximum duration of the flow switch alarm before it becomes manual and blocks the water pump	0	250	Sec	
AL30	Minimum activation time for water flow alarm	0	250	Sec	
AL31	Minimum time with inactive water flow input (after alarm event).	0	250	Sec	
AL32	Condenser flow switch alarm configuration	0	3		
	0= not used				
	1= activated only in chiller mode				
	2= activated only in h.p. mode				
	3= activated in chiller and h.p. mode				
Pr2	Password	0	999		

1. CONNECTING DIAGRAM

1.1 Model with 5 internal relays and 1 modulating output (0..10V or 4..20mA)





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ID3 = high pressure digital input ID4 = low pressure digital input RL1 = compressor relay MF RL2, MF RL3, MF RL4 = multifunction relays RL5 = output for multifunction external relay Triac out fan = output for condenser fan Pb1, Pb2, Pb4 = NTC probe or digital input Pb3 = ratiometric pressure trasducer MF o.c. out = multifunction open collector output (for external relay)

1.3 Model with 5 internal relays and pressure trasducer (Pb3) o.c. out (12V= 40mA) RL4 RL2 MF ID1, MF ID2, MF ID5 = multifunction digital inputs RL3 Comp Line 1 ID3 = high pressure digital input Line ID4 = low pressure digital input 15 17 19 21 25 MF RL2, MF RL3, MF RL4, MF RL5 = multifunction relays 16 18 20 22 26 Pb1, Pb2, Pb4 = NTC probe or digital input Pp1 Pb2 RL5 Pb3 = pressure trasducer Tk = output for external fan speed controller Hot Key 1 3 5 7 9 11 13 MF o.c. out = multifunction open collector output (for external relay) TTL 2 4 6 8 10 12 14 Remote Keyboard ĥ ĥ °. Å ° ₿ MF LP ME HP Supply 12V≈ ID4 ID2 ID1 ID3 ID5 TH 01 🖌 Fan

1.4 Model with 5 internal relays and ratiometric pressure trasducer (Pb3)



MF ID1, MF ID2, MF ID5 = multifunction digital inputs ID3 = high pressure digital input ID4 = low pressure digital input MF RL2, MF RL3, MF RL4, MF RL5 = multifunction relays Pb1, Pb2, Pb4 = NTC probe or digital input Pb3 = ratiometric pressure trasducer Tk = output for external fan speed controller MF o.c. out = multifunction open collector output (for external relay)

⊘HIdROS

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