

EN

25/05 - 5146901_07
Translation of Original instructions

MULTICHILLER- EVO

User manual



■ ELECTRONIC CONTROLLER



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Dear Customer,

Thank you for wanting to learn about a product Aermec. This product is the result of many years of experience and in-depth engineering research, and it is built using top quality materials and advanced technologies.

The manual you are about to read is meant to present the product and help you select the unit that best meets the needs of your system.

However, please note that for a more accurate selection, you can also use the Magellano selection program, available on our website.

Aermec, always attentive to the continuous changes in the market and its regulations, reserves the right to make all the changes deemed necessary for improving the product, including technical data.

Thank you again.

Aermec S.p.A.

SAFETY CERTIFICATIONS



This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled disposal of Waste Electrical and Electronic Equipment (WEEE), please return the device using appropriate collection systems, or contact the retailer where the product was purchased. Please contact your local authority for further details. Illegal dumping of the product by the user entails the application of administrative sanctions provided by law.

All specifications are subject to change without prior notice. Although every effort has been made to ensure accuracy, Aermec shall not be held liable for any errors or omissions.

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1 QUICK REFERENCE

This manual describes all the windows found in the control software of the MULTICHILLER-EVO panel, but the list below contains all the basic operations that the user might need, referring him/her to the relative page of the manual where there is a description of that specific function (for all other information, refer to the contents page):



- A** Switching the unit ON/OFF (8 ON/OFF menu [on page 18](#))
- B** Selecting the operating mode (8.1 Main system side functioning settings [on page 18](#))
- C** Setting a main operating set-point (8.1 Main system side functioning settings [on page 18](#))
- D** Setting the time bands (8.2 TIME PERIODS sub-menu - Daily setting [on page 18](#))
- E** Changing the system language (11.1 Selection of system language [on page 20](#))
- F** Set the BMS parameters (12.17 Remote control - Connection with BMS settings [on page 25](#))

NOTICE



The MULTICHILLER-EVO accessory is factory set with the data and parameters of the chillers used for the system it is, therefore, necessary, when ordering, to specify the number and type of chiller that the accessory will have to manage.



After completing the installation of the MULTICHILLER-EVO accessory, any changes, additions or removal of initially provided chillers, must be notified to the company for possible adjustment of the application.

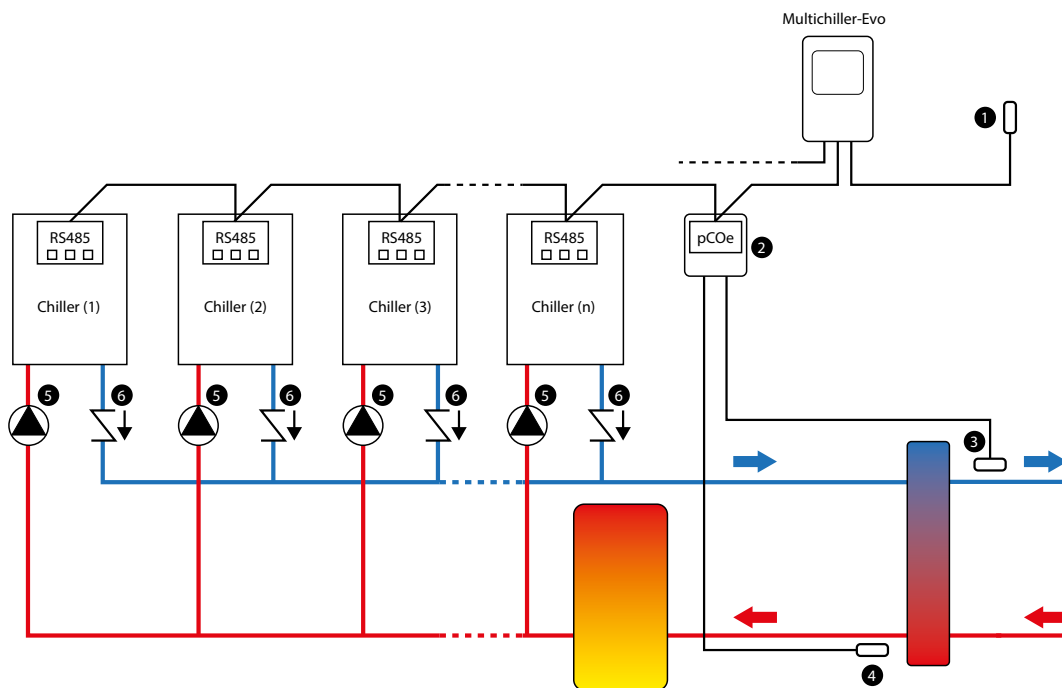
2 DESCRIPTION OF THE ACCESSORY

Il MULTICHILLER-EVO permette di gestire accensioni, spegnimenti e programmazione oraria dei chiller (**fino a nove**) installati sull'impianto; l'accessorio gestirà la richiesta di potenza da parte delle utenze, accendendo i chiller in sequenza per soddisfare la richiesta di potenza; questo sarà possibile grazie alle logiche di funzionamento impostabili sul software del MULTICHILLER-EVO tramite il suo schermo touch-screen.

The MULTICHILLER-EVO is supplied within a wall-mounted IP66 electric box and an additional IP66 electric box with expansion board for connecting the input and output probes of the water produced. The connections to be made depend on the type of chiller (air-water or water-water) and the accessory has been designed for double ring applications (as shown in the following diagram); for any other application than the recommended ones, contact the company.

3 RECOMMENDED SYSTEM (DOUBLE RING WITH STORAGE TANK AND CIRCUIT BREAKER)

Table of contents	Component
1	Condensation probe (placed externally for air/water machines; on the condenser return for the water/water machines)
2	pCOe expansion board (supplied)
3	Circuit breaker temperature probe 1
4	Circuit breaker temperature probe 2
5	Pump
6	Non-return valve



no. = 9 (maximum numbers of units)

NOTICE

- i** The accessory can manage systems with chiller scroll, screw or centrifuge; however, the chillers connected to the MULTICHILLER-EVO must all be of the same type (air-water or water-water);
- i** The MULTICHILLER-EVO does not manage any load outside the chiller; valve pumps or other specific loads cannot in any way be directly controlled by it;
- i** Each chiller must be provided with internal or external pump, driven by the chiller board;
- i** The evaporator of each chiller must have adequate parts to prevent the passage of water in case the chiller is not operating (non-return valves have been used in the example);
- i** If the MULTICHILLER-EVO does not manage multipurpose units, it is necessary to connect one of the supplied probes to the analogue input U1 (terminal board J2); this probe must be positioned so as to provide information on the condenser temperature:
 - Outside if the chillers are air-water;
 - On the source side if the chillers are water-water;
- i** Each chiller communicates with MULTICHILLER-EVO via Modbus network; to achieve this connection, each chiller must be provided with appropriate board for serial communication via modbus;



The probes positioned in the circuit breaker storage tank and connected to the pCO_e board must be set via software (through the procedure indicated on page "12.11 Thresholds and timing - Backup chiller settings [on page 23](#)") to determine which of the two will be used to read the system demand;



If you want to activate the system's set-point compensation function with climatic curve, use a NTC temperature probe (supplied) connected to the multifunction input U2 (terminal board J2), which must be set (through the procedure indicated on page "12.20 Remote control - Multi-function input management [on page 26](#)") to associate the value read by the probe to the SET "compensation function";



The supplied temperature probes have a 15 m long cable;



If you want to insert the MULTICHILLER-EVO within a BMS-managed system, you will need to purchase and install an AER485P1 serial board.

4 INSTALLATION

4.1 MULTICHILLER-EVO GENERAL CONNECTION DIAGRAM

The diagram on the next page represents all the electrical connections that the user must make to properly install the MULTICHILLER-EVO accessory. The probes used are supplied and the cable is 15 m long, while the power supply cable must be wired during installation.

Table of contents	Component
1	NTC probe to be installed: • Outdoors, in case of Air/Water chiller; • On the source return, in case of Water/Water chiller;
2	NTC probe to be installed outdoors (to be set for the climatic curve) or 0-10V or 4-20mA signal for multifunction input
3	In 2- or 4-pipe systems, NTC probe to be installed outdoors with climatic function for the recovery side or 0-10V or 4-20mA signal for multifunction input
4	NTC probe to be installed on the system return (probe sump supplied)
5	NTC probe to be installed on the system flow (probe sump supplied)
6	NTC probe to be installed on the return recovery (in 2/4-pipe systems)
7	NTC probe to be installed on the flow recovery (in 2/4-pipe systems)
8	Digital inputs available (normally open): • ID1 = system side season change (the settings on the open/closed status are available on the installer's menu); • ID2 = System side On/Off (open = On, closed = Off); • ID3 = 2/4-pipe system recovery side On/Off (open = On, closed = Off); • ID4 = Secondary system side set point (open = Set1, closed = Set2); • ID5 = Secondary recovery side set point (open = Set1, closed = Set2); • ID6 = Multifunction system side enabling (open = enabled, closed = disabled); • ID7 = Multifunction recovery side enabling in 2/4-pipe systems (open = enabled, closed = disabled); • Attention: multifunction inputs ID6 and ID7 must also be enabled from the display; • ID8 = External alarm, system stopped and 2/4-pipe system recovery (open = no alarm, closed = alarm)
9	Digital output for summary of global alarms both for chillers and MULTICHILLER-EVO;
10	RS485 serial connection: MODBUS RTU protocol, baudrate 19200, 8bit of data, no parity, 2 bit stop. Each chiller must be fitted with a special board for RS485 serial communication (to set the said board, refer to the chiller's manual).
11	Total maximum length (from MULTICHILLER-EVO to the last connected chiller) for the modbus network = 500m
12	Power supply MULTICHILLER-EVO (230V~50/60Hz); Use H05V-K or N07V-K cables with 300/500V insulation; minimum section > 1.5 mm ²
13	pCOe expansion board power supply (24Vac). Power the pCOe board from the dedicated transformer. On installation, a Class II safety transformer of at least 15 VA must be used to power just one expansion. It is recommended to separate the power supply of the pCOe expansion from that of the rest of the electric devices (contactors and other electro-mechanical components) inside the electric control board. Whenever the secondary of the transformer is on the ground, check that the earth wire is connected to terminal G0. Make sure that references G and G0 of all boards present in the control board are respected (the G0 reference must be kept for all boards).
14	AERNET accessory connection
15	Connection between the pCO5 board and Touch screen display. With software versions < 1.2.0 (obsolete), the touch screen must be connected to port J25 of board pCO5+

4.2 SERIAL CABLES: TECHNICAL SPECIFICATIONS

Use a shielded, twisted pair cable that respects the following requirements:

- 1. Parasitic electrical capacitance:** < 90 pF/m
- 2. Characteristic impedance:** 120 Ohm
- 3. Section:**
 - AWG20/AWG22
 - AWG24 whit maximum length of network 100 m
- 4. Number of poles:**
 - 3 wire or more for RS485 connection
 - 4 wire or more for TTL connection

4.3 NOTES REGARDING CONNECTION OF MULTICHILLER-EVO PROBES

The temperature probes supplied with the MULTICHILLER-EVO accessory must be used differently according to the type of unit used. The table below summarises the connections for supplied probes based on the type of unit used and according to the potential functions selected for MULTICHILLER-EVO accessory functioning:

Type of chiller	pCO ₅ analogue inputs (probes required for functioning)			pCO _e analogue inputs (probes required for functioning)			
	U1	U2	U3	B1	B2	B3	B4
Cooling only	SI	YES ⁽¹⁾	NO	SI	SI	NO	NO
Heat pump	Optional ⁽¹⁾	Optional ⁽²⁾	Optional ⁽²⁾	SI	SI	SI	SI

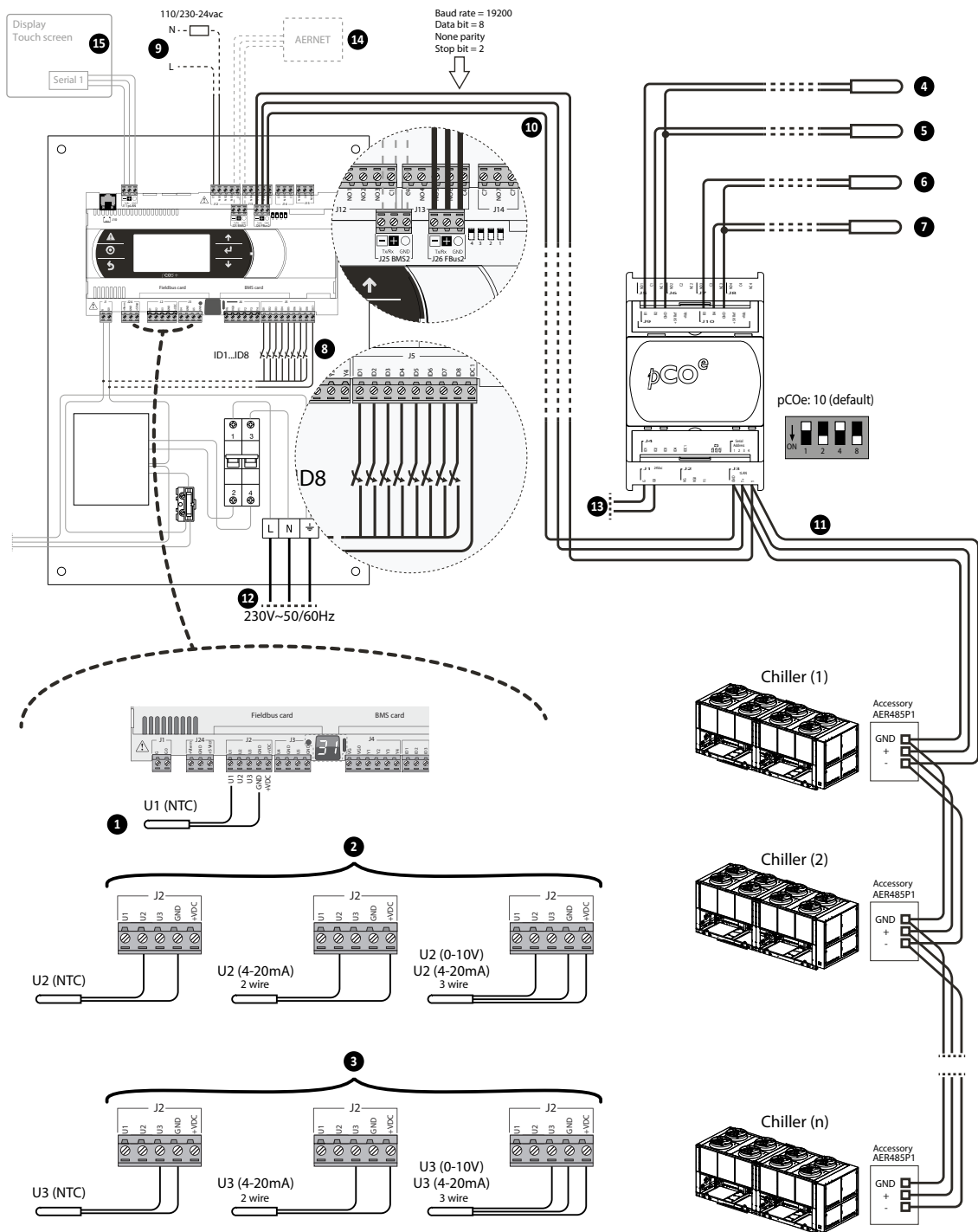
Notes regarding probes:

⁽¹⁾ This probe is required if you want to use the multifunction input controlled by NTC (refer to page "12.20 Remote control - Multi-function input management [on page 26](#)" for more information), otherwise this probe does not need to be installed.

Notes regarding optional probes (these probes are not supplied):

⁽¹⁾ This probe can be used if you want to see the outdoor air temperature;

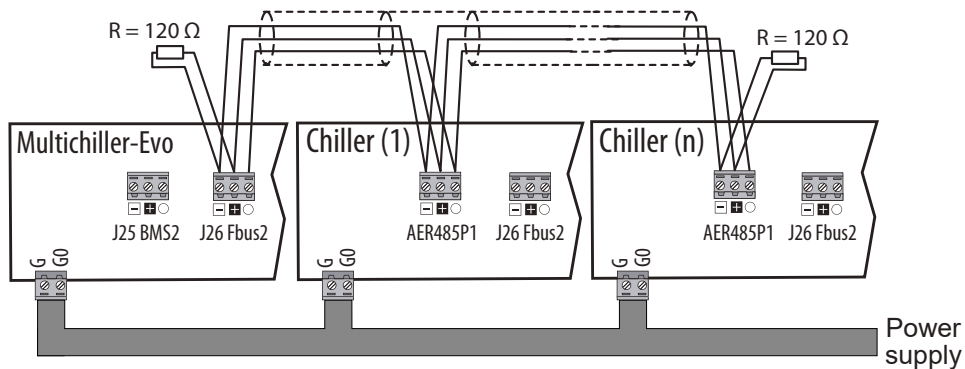
⁽²⁾ This probe is recommended if you want to use the multifunction input controlled by NTC.



no. = 9 (maximum numbers of units)

4.4 NOTES ON THE SERIAL CONNECTION

Regardless of the type of power supply or earthing, use a shielded three-pole cable connected as shown. If the network exceeds the 100 m, the termination resistor is required (120Ω).

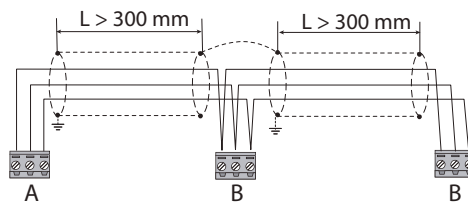


no. = 9 (maximum numbers of units)

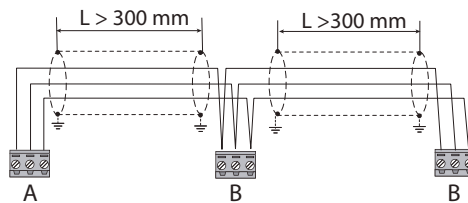
Shield earth connection mode:

The serial cable shield must be earth connected in different ways, depending on the length, as shown (A=FBus terminal, B=BMS terminal).

(a): only 1 end earthed with jumper between the shields:



(b): 2 earth-connected ends:












4.5 MATERIAL STANDARD SUPPLIED

- Control system, equipped with metal electric box (for wall-mounting); this part contains the main board and touch-screen display to manage the user interface;
- Wall-mounting brackets for MULTICHILLER-EVO metal box;
- Expansion module formed by a plastic electric box (for wall-mounting) with pCOe expansion board;
- 4 NTC probes with 15 m cable;
- 4 fairleads for NTC probes;
- 1 fairlead for power supply cable;
- 2 fairleads for serial connection;
- 1 fairlead for pCOe power supply;
- 3 probe sums;
- Documentation in 5 languages;

5 STRUCTURE OF THE MENUS

The touch-screen panel on the MULTICHILLER-EVO accessory allows the user to manage all the device function through its graphic interface specially designed to be used through the touchscreen; the information is easily and orderly managed thanks to the implementation of a “home” screen where you can view the state of the chillers connected to the accessory, while the settings or display of more specific parameters are organised through different menus accessible through appropriate selection page, here each menu is shown with a specific icon; the icons representing the various menus are highlighted in the following diagram:



Icon	Menu	Description	Note
	ON/OFF	It allows you to turn the chillers on or off directly; it also contains the set points and differential settings and the control of the time periods enabled on the system	---
	CLOCK	It allows you to adjust the system clock (on the pCO5+ main board and on the touch-screen control and command board)	---
	INSTALLER	It allows you to view the state of inputs and outputs of the MULTICHILLER-EVO control board, and it also allows you to: set the connection via BMS, set the thresholds and timings in the ignitions, view the software information, modify the access password and data to be used for the graphics menu; ATTENTION: for software versions prior to version "1.2.0", the password is "0442".	Password (0000)
	MANUFACTURE	Protected menu not available to the user	Protected menu
	SYSTEM LAYOUT	It allows you to view the information on each connected chiller (state, active loads, any alarms and their reset) and verify the values read by the temperature probes connected to the MULTICHILLER-EVO	The first page is used as HOME
	CHARTS	It allows you to view real-time charts of the values read by the temperature probes connected to the MULTICHILLER-EVO	---
	LANGUAGE	It allows you to select the system interface language	---
	ALARMS	It allows you to view details on the active alarms and access the alarm log	If an alarm is active, the icon's background flashes red
	Debug	It allows you to view the different pages containing a summary of the values read by the chiller probes; this tool is used by the technical after-sales service/assistance to identify any abnormal operation	This menu is not normally enabled, you must set the relevant parameter in the installer menu to activate it

6 USER INTERFACE

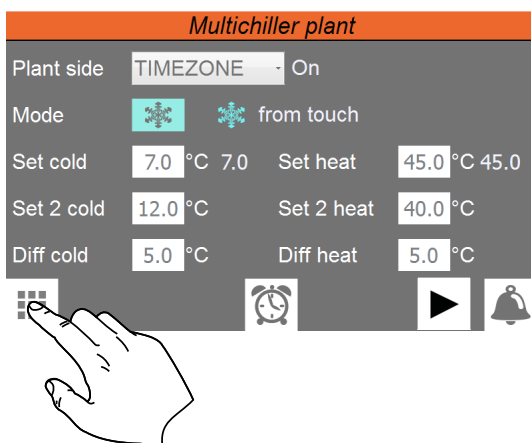
6.1 INTERACTING WITH THE GRAPHIC INTERFACE

The unit command and control interface uses a touch-screen display. This interface is designed to be simple and user-friendly; the absence of actual keys means the program is managed purely by touching the screen directly, which makes it far more accessible for the user. The software manages a great deal of information, with the various items grouped into separate pages that in turn are managed via specific menus, but there are certain fundamental features that apply to all the operations, such as selecting a window, moving on to the next window, or entering a precise numerical value. The basic operations that can be carried out via the touchscreen interface of the MULTICHILLER-EVO device are described below.

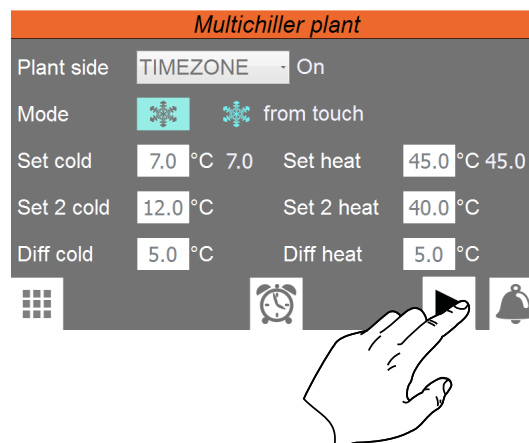
6.2 NAVIGATING BETWEEN THE PROGRAM PAGES

As already mentioned on the previous pages, the unit operating information is sub-divided into various menus, each containing several pages. The basic operations for navigating between the menus are as follows:

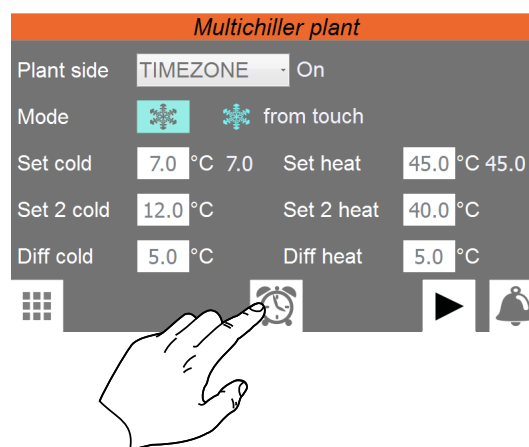
- **Entering a menu:** to enter a menu you must activate the menu selection page by pressing the icon (☐) available on each page of the application (however, please note that if you are entering a sub-menu, this icon will not be available because replaced by the icon (↶) used to go back to the previous menu; then simply press the icon of the menu to be accessed (for further information on which menus are activated by the various icons, refer to the previous page);



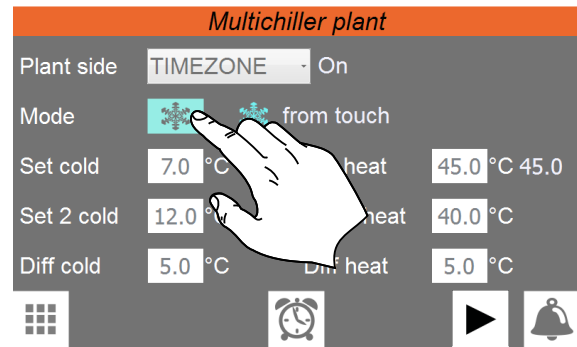
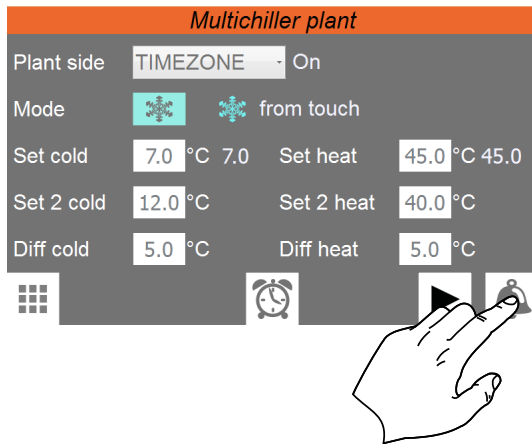
- **Scroll to the next or previous page of a menu:** once you have accessed a menu, you can pass from one page to another by pressing the "right arrow" icon (▶) to go forward, or the "left arrow" icon (◀) to go back (unless the menu in question has just one page).



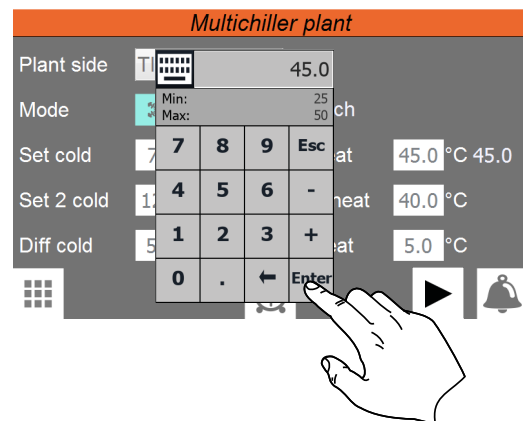
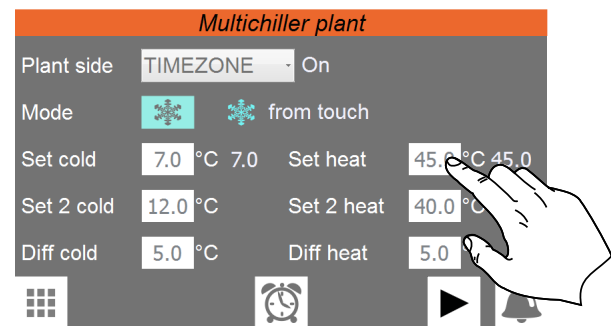
- **Entering a sub-menu:** some information is gathered in sub-menus such as, for example, the adjustment of time periods; to access these sub-menus it is necessary to press the respective icons, in case of time periods the icon is (⌚); please note that some sub-menus will only be available if enabled through parameter, for example the time periods sub-menu will only be available if the adjustment in the settings on the system side is set from CLOCK;



- **Entering the alarms menu:** in all pages (in addition to the menu selection page) it will allow access to the Alarms menu; to do so, press the icon (🔔) which will flash red if there are active alarms;



Set a new numeric value:



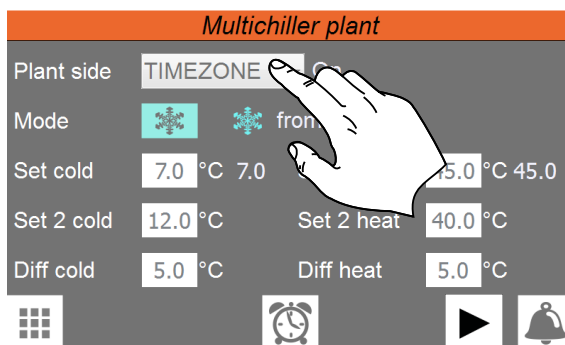
6.3 MODIFYING THE VALUE OF A PARAMETER

Many parameters require for the user to enter a numeric value or choose a certain value from a list. The masks that provide settable elements are made of a label that identifies the function of the value to be set and an area (identifiable by the differently coloured background) where to enter the value to be assigned.

To set a value you must:

1. Press the coloured area containing the value;
2. If it is a drop-down menu (grey background), the menu will open and you will be able (by pressing it) to select the option to be set; whereas, if it is a numeric value, after pressing the white area, a numeric keypad will appear with which to enter the desired value (to complete the entry, press the "Enter" key). Certain parameters (e.g. the functioning mode) can change status by simply pressing on the coloured areas that identify them.

Select a value from the drop-down list:



Modify switch state:

NOTICE

i Once you have selected the numerical value to be modified, the numerical keypad will show the Minimum and Maximum values that can be set for that parameter.

7 SYSTEM LAYOUT MENU

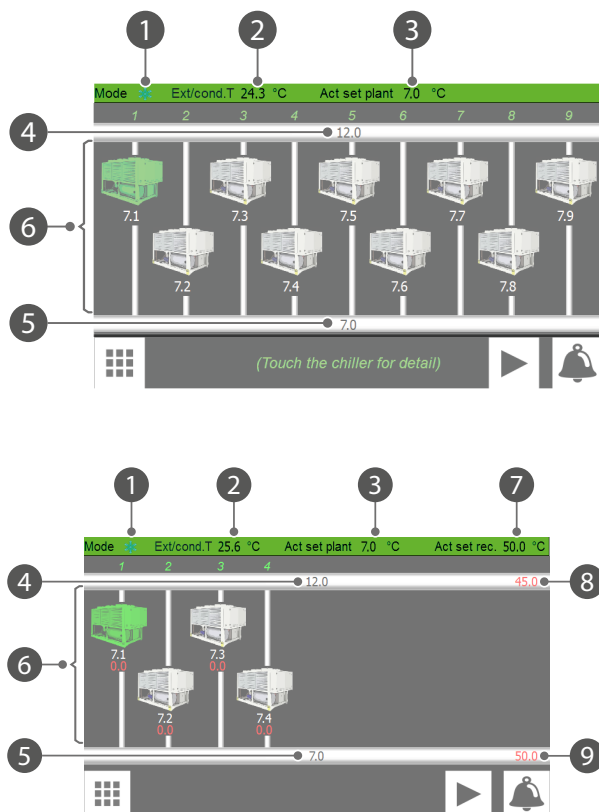
With the System layout menu you can monitor the overall state of the chillers in the system; the inlet, outlet water values, chiller state (on, off, in alarm, etc...), is all information available through this menu.

NOTICE



The first page of this menu represents the home screen of the application (HOME).

7.1 CHILLER MAIN MONITOR (HOME)



1. Indicates the current functioning mode: cooling (❄️) or heating (☀️)
2. Current temperature value detected by the NTC probe connected to output U1 on the Multichiller-Evo board. This probe must be installed outdoors in case of Air/water chiller or on the source return in case of Water/Water chiller
3. Current temperature value set as work set
4. Current temperature value read by the NTC probe connected on the pCOe board input B1
5. Current temperature value read by the NTC probe connected on the pCOe board input B2
6. Each image displays one of the units currently controlled by the MULTICHILLER-EVO accessory. The water value produced from the system side (white) and

recovery unit side (red, only on multipurpose units) is associated with every image.

7. Current temperature value set as recovery side set
8. Current temperature value read by the NTC probe connected on the pCOe board input B3
9. Current temperature value read by the NTC probe connected on the pCOe board input B4

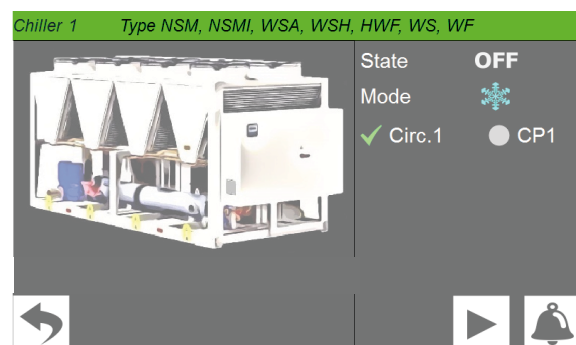
NOTICE



The CHILLER pages (which can be activated by pressing the corresponding icon) are only available if the chiller has been provided during the application loading phase; the current chiller status is represented by the graphics assumed by each icon:

- : Chiller OFF;
- : Chiller ON;
- : Chiller in partial alarm (works at reduced power);
- : Chiller in total alarm (chiller locked)
- : Chiller offline.

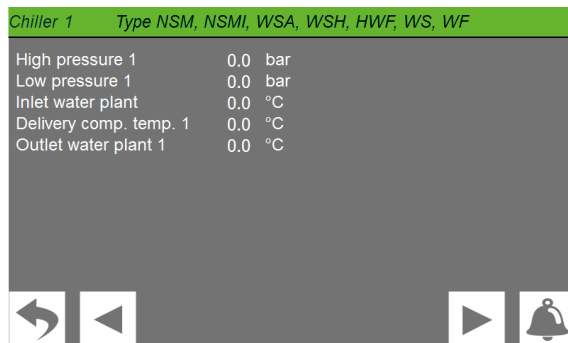
7.2 CHILLER SUB-MENU - GENERAL STATUS



1. Indicates the current Chiller to which the displayed data refers
2. Indicates the family to which the displayed Chiller belongs
3. Indicates the current state of the selected chiller; this can be:
 - **On = chiller currently operating;**
 - **Off:** chiller not currently operating;
4. Indicates the current functioning mode set on the unit: (cooling or heating);

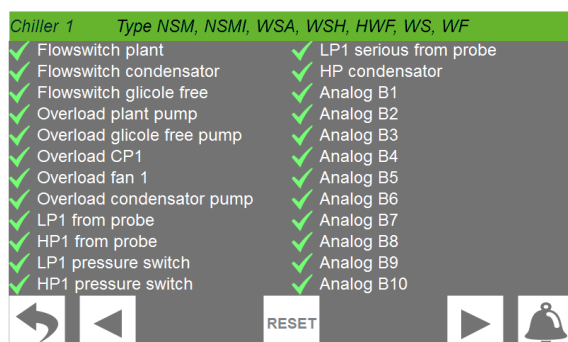
- Indicates the state of compressors related to the reference circuit (if the dot is grey the compressor is off, if it is green the compressor is on)
- Indicates the relative circuit status: (✓) normal circuit; (✗) circuit in alarm

7.3 CHILLER SUB-MENU - VALUES READ ON THE CHILLER PROBES/ TRANSDUCERS



- Indicates the current Chiller to which the displayed data refers
- Indicates the family to which the displayed Chiller belongs
- Indicates the value read by the high pressure transducer on the selected chiller (this data may be repeated if the unit has several circuits)
- Indicates the value read by the low pressure transducer on the selected chiller (this data may be repeated if the unit has several circuits)
- Indicates the value read by the temperature probe for the selected chiller inlet water
- Indicates the value read by the compressor 1 pressing line probe on the selected chiller (this data may be repeated if the unit has several compressors)
- Indicates the value read by the temperature probe for the selected chiller outlet water

7.4 CHILLER SUB-MENU - ALARM STATUS ON SELECTED CHILLER



- Indicates the current Chiller to which the displayed data refers

- Indicates the family to which the displayed Chiller belongs
- Each line represents the status of a specific alarm of the chiller (may vary depending on the type of chiller); the status of each alarm may be: (✓) alarm not active on the chiller; (✗) alarm active on the chiller

Reset: Allows (by prolonged pressure for a few seconds) resetting of alarms on the selected chiller.

NOTICE

i In the units PRM and PRG, in the event of an alarm, it is necessary to contact the **AUTHORISED TECHNICAL AFTER-SALES SERVICE/ASSISTANCE** so that they can intervene to resolve the malfunctioning of the unit and carry out the password reset procedure.

i The information on this page depends on the type of chiller and could be subdivided into different pages that can be browsed using the (B) and (D) keys;

7.5 CHILLER ENABLING AND ACTIVE ALARMS RESET



Indicates the state of the chiller to which the displayed data refers; this can be:

On = chiller currently operating;

Off: chiller not currently operating;

Alarm = the chiller is in partial alarm, so it can provide a reduced power;

Serious al. = the chiller is currently locked by a serious alarm;

Offline: the serial connection with the chiller is interrupted;

ENABLE: Each press allows you to enable or disable the chiller control (identified by its index) by the MULTICHILLER-EVO. If this parameter is set at OFF, the chiller cannot in any way be switched on by the MULTICHILLER-EVO (however, the probes would still be read);



Pressing the key allows you to reset the alarms of the indicated chiller

NOTICE



In the units PRM and PRG, in the event of an alarm, it is necessary to contact the AUTHORISED TECHNICAL AFTER-SALES SERVICE/ASSISTANCE so that they can intervene to resolve the malfunctioning of the unit and carry out the password reset procedure.

8 ON/OFF MENU

With the ON/OFF menu you can turn the chillers on or off; you can also set the main functioning parameters (work set, differentials and functioning modes) and any time programs to be used on the system.

8.1 MAIN SYSTEM SIDE FUNCTIONING SETTINGS

Multichiller plant

Plant side	TIMEZONE	On
Mode	from touch	
Set cold	7.0 °C	7.0
Set heat	45.0 °C	45.0
Set 2 cold	12.0 °C	
Set 2 heat	40.0 °C	
Diff cold	5.0 °C	
Diff heat	5.0 °C	

- Set the system side management (OFF, ON, SET2, CLOCK)
- Indicates the actual status of the MULTICHILLER-EVO
- Set the functioning mode; before changing the functioning mode, make sure that all system chillers are off
- Indicates the actual chiller functioning mode, as well as indicate on which is the source of the current setting; this source can be:
 - **by touch**: settings have been entered through touch panel on the MULTICHILLER-EVO;
 - **by digital input**: settings have been piloted through digital input ID1;
 - **by BMS**: settings have been transmitted by BMS;
- Set the value of the cold set
- Set the value of the heat set
- Set the value of the cold secondary set
- Set the value of the heat secondary set
- Set the value of the cold differential
- Set the value of the heat differential

8.2 TIME PERIODS SUB-MENU - DAILY SETTING

Timezone plant

Day: WEDNESDAY

Start	Stop	Action
08 : 00	12 : 00	SET1
16 : 00	22 : 00	SET1
00 : 00	00 : 00	OFF
00 : 00	00 : 00	OFF

- Indicates the day to which the displayed time settings refer
- Indicates the start times for the time periods (each day can have up to four)
- Indicates the end times for the time periods (each day can have up to four)
- Indicates the action to be associated with each time period (each day can have up to four); the possible actions can be:
 - **OFF** = during the specified time period the system chillers will be off;
 - **SET1** = during the specified time period the chillers will be on with the main set;
 - **SET2** = during the specified time period the chillers will be on with the secondary set;

8.3 TIME PERIODS SUB-MENU - COPY HOURLY PROGRAMS FUNCTION

Timezone plant

Day: TUESDAY

Copy day to: COPY

- Indicates the day from which the hourly program will be copied
- Indicates the day to which the hourly program will be copied (taken from the hourly program of the specified day)
- Copy the hourly program from the selected day to the selected day

8.4 MAIN 2/4-PIPE SYSTEM RECOVERY SIDE FUNCTIONING SETTINGS (VISIBLE IF MULTIPURPOSE UNITS ARE PRESENT)

Multichiller recovery (2/4 Pipes)

Rec.side - On

Set °C 50.0

Set 2 °C

Diff °C

1. Set the system side management (OFF, ON, SET2, CLOCK)
2. Indicates the actual status of the MULTICHILLER-EVO
3. Set the value of the recovery side set
4. Set the value of the recovery side secondary set
5. Set the value of the differential

8.5 TIME PERIODS SUB-MENU - RECOVERY SIDE DAILY SETTING (IF MULTIPURPOSE UNITS ARE PRESENT)

Timezone recovery (2/4 Pipes)

Day

Start	Stop	Action
08 : 00	12 : 00	SET1
16 : 00	22 : 00	SET1
00 : 00	00 : 00	OFF
00 : 00	00 : 00	OFF

1. Indicates the day to which the displayed time settings refer
2. Indicates the start times for the time periods (each day can have up to four)
3. Indicates the end times for the time periods (each day can have up to four)
4. Indicates the action to be associated with each time period (each day can have up to four); the possible actions can be:
 - **OFF**: during the specified time period the system chillers will be off;
 - **SET1**: during the specified time period the chillers will be on with the main set;
 - **SET2**: during the specified time period the chillers will be on with the secondary set;

8.6 TIME PERIODS SUB-MENU - COPY HOURLY PROGRAMS FUNCTION ON RECOVERY SIDE (IF MULTIPURPOSE UNITS ARE PRESENT)

Timezone recovery (2/4 Pipes)

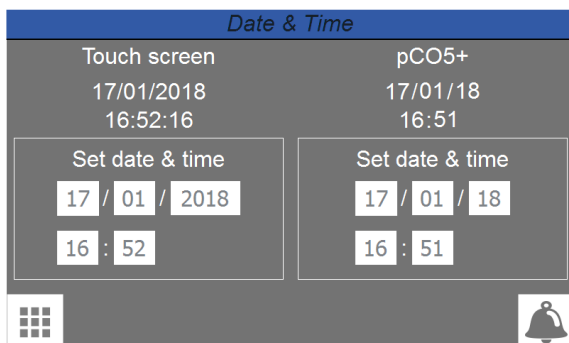
Day

Copy day to

1. Indicates the day from which the hourly program will be copied
2. Indicates the day to which the hourly program will be copied (taken from the hourly program of the specified day)
3. Copy the hourly program from the selected day to the selected day

9 CLOCK MENU

9.1 DATE AND TIME SETTINGS ON THE MAIN BOARD AND ON THE TOUCH DISPLAY BOARD

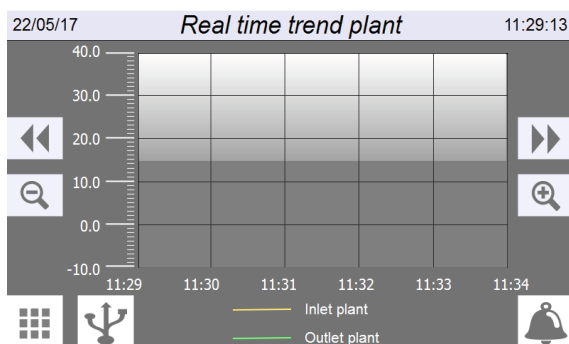


1. Indicates the actual date and time set on the touch display board timer
2. Indicates the actual date and time set on the pCO5+ board timer
3. Allows to adjust and/or modify the date and time on the touch display board
4. Allows to adjust and/or modify the date and time on the pCO5+ board

10 DIAGRAM MENU

With the CHARTS menu you can view the real-time chart of the probes connected to the pCOe expansion board (which must be connected on the system flow and return).

10.1 DISPLAYS REAL-TIME CHARTS OF THE VALUES READ BY THE SYSTEM SIDE PROBES

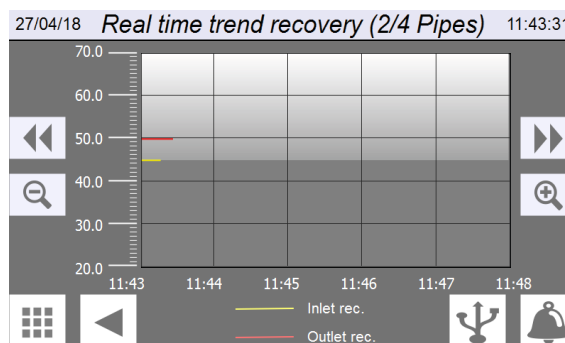


1. Indicates today's date
2. Indicates the current time
3. The Y axis indicates the temperature (°C)
4. The X axis indicates the time to which to refer the temperature data read by the probes



: Allows transferring the temperature data in a .CSV file on physical medium (connected to the USB port on the back of the touch screen display);

10.2 DISPLAY CHARTS IN REAL TIME REGARDING VALUES READ BY THE 2/4-PIPE SYSTEM RECOVERY SIDE PROBES (VISIBLE IF MULTIPURPOSE UNITS ARE PRESENT)



1. Indicates today's date
2. Indicates the current time
3. The Y axis indicates the temperature (°C)
4. The X axis indicates the time to which to refer the temperature data read by the probes

11 LANGUAGE MENU

With the LANGUAGE menu you can select the system interface language.

11.1 SELECTION OF SYSTEM LANGUAGE




Indicates the actual language set on the system.

12 INSTALLER MENU

With the INSTALLER menu you can access many of the settings available for the functioning and adjustment of the system; however, this menu may contain parameters whose modification is recommended only to the unit or system maintenance and/or after-sales assistance personnel, which is why the menu requires an access password.

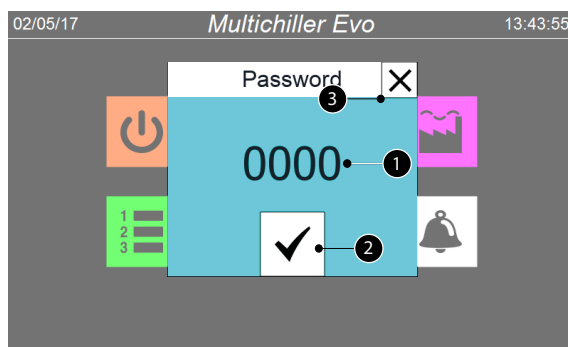
INSTALLER PASSWORD: 0000

NOTICE



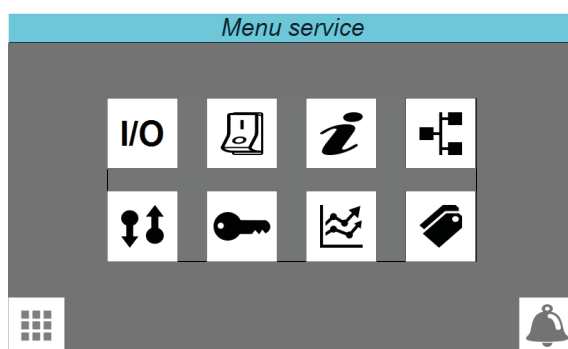
For software versions prior to version "1.2.0", the password is: 0442.





12.1 ACCESS PASSWORD ENTERING







1. Allows entering the numeric value of the password;
2. Allows confirming the entered password;
3. Go back to the menu selecting page.

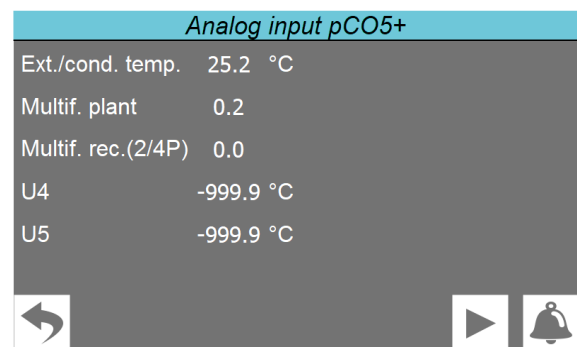
12.2 SUBMENU SELECTION PAGE



Icon	Function
	Open the inputs/outputs sub-menu
	Open the remote control sub-menu
	Open the info sub-menu
	Open the network sub-menu

Icon	Function
	Open the timing and threshold sub-menu
	Open the password sub-menu
	Open the charts sub-menu
	Open the displays sub-menu

12.3 INPUTS/OUTPUTS - STATUS OF PCO5+ ANALOGUE INPUTS (PAGE 1)



1. Current temperature value detected by the NTC probe connected to analogue input U1 on the MULTICHILLER-EVO board. This probe must be installed outdoors in case of Air/water chiller or on the source return in case of Water/Water chiller
2. Indicates the value (the size of which must be set in the "remote control" menu window) read on the system side multifunction input
3. Indicates the value (the size of which must be set in the "remote control" menu window) read on the recovery side multifunction input
4. Not used
5. Not used

12.4 INPUTS/OUTPUTS - STATUS OF PCO5+ ANALOGUE INPUTS (PAGE 2)

Digital input pCO5+			
ID1 cool/heat	OPEN	ID7 multif.rec.(2/4P)	OPEN
ID2 off/on plant	OPEN	ID8 external alarm	OPEN
ID3 off/on rec.(2/4P)	OPEN		
ID4 set2 plant	OPEN		
ID5 set2 rec.(2/4P)	OPEN		
ID6 multif. plant	OPEN		

1. Indicates the actual state of digital input ID1 (functioning mode)
2. Indicates the actual state of digital input ID2 (connected to the system On/Off)
3. Indicates the actual state of digital input ID3 (connected to the recovery side On/Off)
4. Indicates the actual state of digital input ID4 (use secondary set on system)
5. Indicates the actual state of digital input ID5 (use secondary set on recovery side)
6. Indicates the actual state of digital input ID6 (system multifunction input)
7. Indicates the actual state of digital input ID7 (recovery side multifunction input)
8. Indicates the actual state of digital input ID8 (external alarm)

12.5 INPUTS/OUTPUTS - STATUS OF PCO5+ DIGITAL OUTPUTS

Digital Output pCO5+			
NO1 alarm		NO7	
NO2		NO8	
NO3			
NO4			
NO5			
NO6			

1. Indicates the status of digital output NO1 (grey = off; green = on); this output indicates the presence of an active alarm on the system
2. Not used
3. Not used
4. Not used
5. Not used
6. Not used
7. Not used

8. Not used

12.6 INPUTS/OUTPUTS - STATUS OF PCO5+ ANALOGUE OUTPUTS

Analog output pCO5+		
Y1	0.0	%
Y2	0.0	%
Y3	0.0	%
Y4	0.0	%

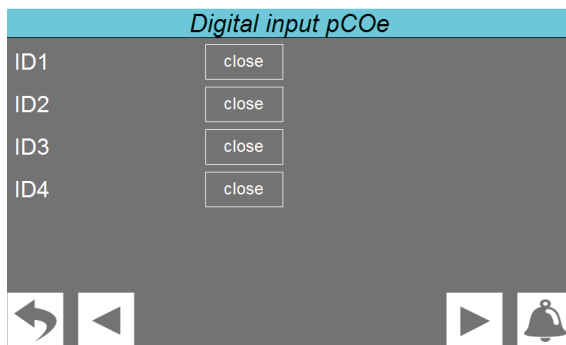
1. Not used
2. Not used
3. Not used
4. Not used

12.7 INPUTS/OUTPUTS - STATUS OF PCOE ANALOGUE INPUTS

Analog input pCOe		
Inlet plant	0.0	°C
Outlet plant	0.0	°C
Inlet rec.(2/4P)	0.0	°C
Outlet rec.(2/4P)	0.0	°C

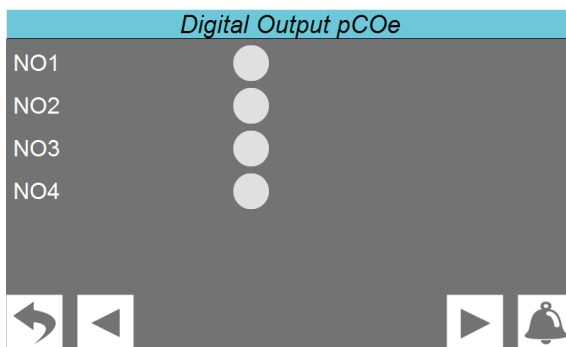
1. Actual temperature value detected by the NTC probe connected to analogue input B1 on the pCOe expansion board
2. Actual temperature value detected by the NTC probe connected to analogue input B2 on the pCOe expansion board
3. Actual temperature value detected by the NTC probe connected to analogue input B3 on the pCOe expansion board
4. Actual temperature value detected by the NTC probe connected to analogue input B4 on the pCOe expansion board

12.8 INPUTS/OUTPUTS - STATUS OF PCOE DIGITAL INPUTS



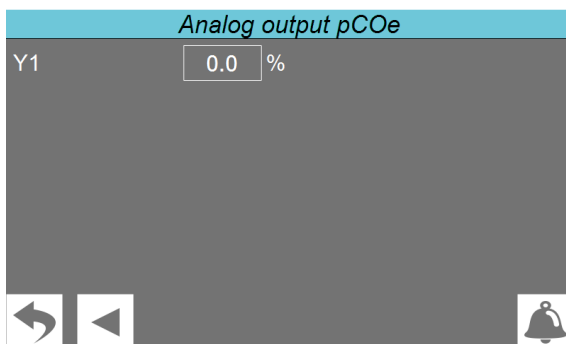
1. Not used
2. Not used
3. Not used
4. Not used

12.9 INPUTS/OUTPUTS - STATUS OF PCOE DIGITAL OUTPUTS



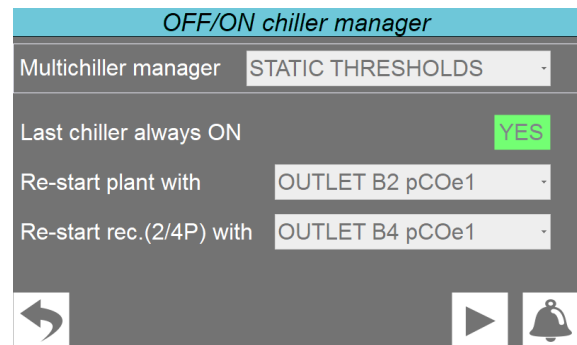
1. Not used
2. Not used
3. Not used
4. Not used

12.10 INPUTS/OUTPUTS - STATUS OF PCOE ANALOGUE OUTPUTS



Not used

12.11 THRESHOLDS AND TIMING - BACKUP CHILLER SETTINGS



1. Indicates which logic will be used to control the ignition commands compared to the power demand by the system; these logics can be:
 - **All chillers on:** when the MULTICHILLER-EVO gives the On command, all system chillers will be set to On (observing the "Next On delay" timing specified on the next page), while the chillers will be set to Off (observing the "Next Off delay with multichiller Off" specified on the next page) once Off has been set by the MULTICHILLER-EVO;
 - **Fixed thresholds:** this logic involves the ignition of the first chiller together with the MULTICHILLER-EVO; the thermostats of the remaining chillers will be subsequently controlled and when the average power demand will be higher than the "partialisation On %" (specified on the next page) for longer than the "Next On delay" (again, available on the next page), then an additional chiller will be set to On (choosing the one that worked less hours) and so forth... similar logic will be used (in the opposite direction) to calculate the chiller switch-off;
 - **Optimiser 1:** during the MULTICHILLER-EVO commissioning, the loading is met using the fixed threshold logic; then this logic manages the chiller ignitions based on an algorithm that verifies the system's power demand and its stability over time. If the power demand is stable, the best combination will be calculated between the available chillers (which can be activated with partialisations different from each other) to provide for the demand itself (in this way the hours worked by each chiller will not be taken into account);
 - **Optimiser 2:** during the MULTICHILLER-EVO commissioning, the loading is met using the fixed threshold logic; then this logic follows the same algorithm as above, however, in this case, the calculated combination will operate the selected chillers with the same partialisation steps;
2. Indicates whether to use one of the chillers as monitor for the system's power demand; in this case, the chiller will always remain on and the MULTICHILLER-EVO uses its thermostat to establish the power demand; if you select "NO", the MULTICHILLER-EVO will use one of the probes connected to the pCOe expansion board

(according to the one selected for the "System re-start") to establish the threshold below which to start the first chiller

- Indicates which threshold, connected to the pCOe expansion board, will be used to read the temperature below which to consent to start the first chiller (system side)
- Indicates which threshold, connected to the pCOe expansion board, will be used to read the temperature below which to consent to start the first chiller (recovery side)

NOTICE



OPTIMISATION 1 and OPTIMISATION 2 multichiller management is not available with multipurpose machines.

12.12 THRESHOLDS AND TIMING - FIXED THRESHOLD LOGIC SETTINGS

Static threshold	
% partialization ON	100.0 %
% partialization OFF	40.0 %
Delay next ON	180 s
Delay next OFF	60 s
Delay next OFF with multichiller OFF	10 s

- Indicates the power threshold that the currently active chiller (or the average of the same, if there is more than one active chiller) must reach, and maintain for a certain time, for the MULTICHILLER-EVO to decide to switch-on an additional chiller to provide for the system's power demand;
- Indicates the power threshold that the currently active chiller (or the average of the same, if there is more than one active chiller) must reach, and maintain for a certain time, for the MULTICHILLER-EVO to decide to switch-off a chiller as the power demand is met;
- Indicates the time for which the system's power demand should remain above the value expressed on "Partialisation ON %" to enable the ignition command of an additional chiller;
- Indicates the time for which the system's power demand should remain below the value expressed on "Partialisation OFF %" to enable the switch-off command of an additional chiller;
- If all chillers are forced to Off by the direct command on the MULTICHILLER-EVO (page 14), the switch-offs will be delayed from one another of the time specified in this parameter.

12.13 THRESHOLDS AND TIMING - FIXED THRESHOLD LOGIC SETTINGS

Optimization	
Interval acquisition demand power	300 s
Interval stable demand power	60 s
% stable power	5.0 %
% save power to switch	5.0 %

- Indicates the functioning time after which to sample the average of the current power required from the chillers (calculated in percentage); in order to initiate the optimisation algorithm, this value must be maintained (possibly deviate of a percentage value of "stable system power %") for a minimum time called "Stable power demand interval";
- Indicates the minimum duration of the system's power demand to be considered stable and run the optimisation algorithm;
- Indicates the percentage to be added or subtracted from the value sampled at the beginning of the control to establish the power demand;
- Indicates the minimum energy gain percentage in order to make effective the chiller configuration change possibly proposed by the optimisation algorithm

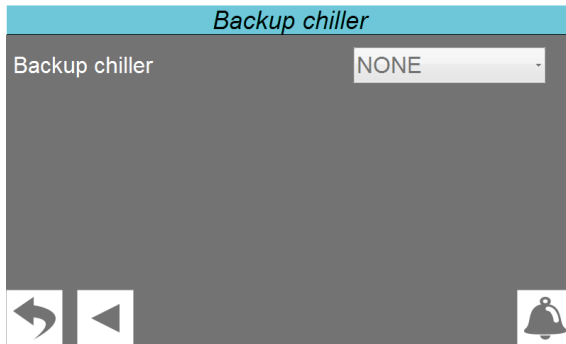
12.14 THRESHOLDS AND TIMING - CHILLER IGNITION PRIORITY/ ORDER SETTINGS FOR FIXED THRESHOLD MANAGEMENT

Chiller order cool/heat mode plant					
	Mode	Mode		Mode	Mode
Chiller 1	0	0	Chiller 6	0	0
Chiller 2	0	0	Chiller 7	0	0
Chiller 3	0	0	Chiller 8	0	0
Chiller 4	0	0	Chiller 9	0	0
Chiller 5	0	0			

Indicates the priority index assigned to the chiller (n) both cooling and heating; the lower the index the higher the chiller priority during ignition; if two or more chillers have the same priority index, the one with the least number of worked hours will have priority (in order to balance them); the logic is reversed during switch-off, starting to switch-off the chiller with the higher index (if more chillers have the

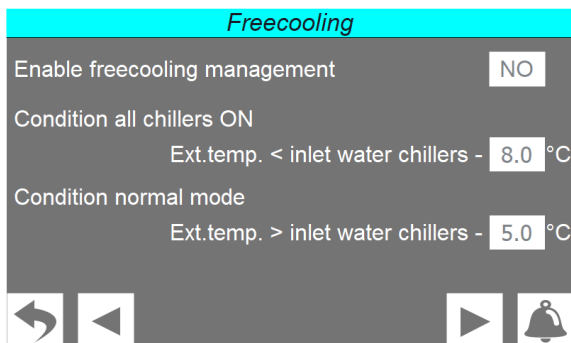
same index, the one with the highest number of worked hours will switch-off first).

12.15 THRESHOLDS AND TIMING - BACKUP CHILLER SETTINGS



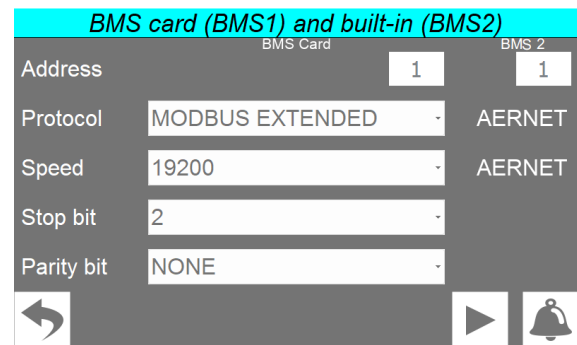
Indicates the possible chiller used as backup; if one of the system chillers is indicated as backup, said chiller will always be off, automatically activating it if another chiller is locked by a serious alarm.

12.16 ENABLE FREECOOLING



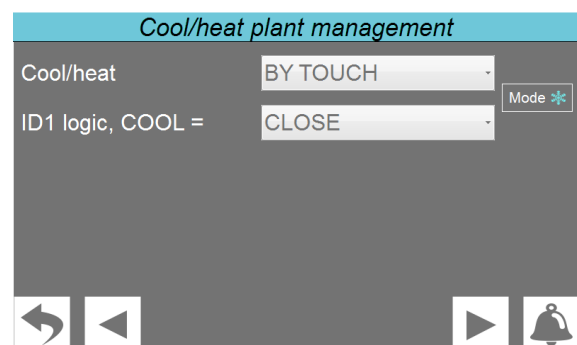
1. Enables freecooling management (in the case of cold operation)
2. All available chillers (except the backup chiller) are switched on sequentially if the outside temperature is lower than the system inlet temperature of the pCOe. The value is the difference between the two temperatures (settable for 30 seconds)
3. The normal chiller on/off management chosen on the 'chiller OFF/ON management' page returns if the outside temperature is higher than the pCOe input temperature. The value is the difference between the two temperatures (settable value for 30 seconds)

12.17 REMOTE CONTROL - CONNECTION WITH BMS SETTINGS



1. Indicates the address associated with the AER485P1 board (not supplied) connected to the MULTICHILLER-EVO pCO5+ board to communicate with an external BMS system;
2. Indicates the type of protocol used to communicate with the BMS system; this protocol can be:
 - **CAREL**: Carel property protocol;
 - **MODBUS EXTENDED**: Modbus extended protocol;
 - **WINLOAD**: communication via winload;
3. Indicates the communication speed for connection with the BMS;
4. Indicates the number of stop bits used in the communication protocol with the BMS;
5. Indicates the type of parity used in the communication protocol with the BMS;
6. BMS board address setting 2. The built-in board J26 (BMS2) is set with protocol 'MODBUS 19200 8 N 2' and cannot be changed. It is dedicated to the AERNET accessory.

12.18 REMOTE CONTROL - CHANGEOVER MANAGEMENT



1. Indicates the type of changeover management type; this management can be:
 - **COOLING ONLY**: the chillers do not provide for the heating function so the system is set for cooling management only;
 - **FROM TOUCH**: the changeover between heating and cooling is allowed through the touch screen interface;

- **FROM DIG. INP. ID1:** the changeover is managed by the ID1 digital input on the pCO5+ board;
- **FROM BMS:** the season change is managed via remote control from BMS;
- 2. Indicates (if you have chosen to manage the changeover via digital input ID1) which input status to associate with the cooling mode (open or closed);
- 3. Indicates the current functioning mode set for the system.

12.19 REMOTE CONTROL - ENABLE ON/OFF FROM DIGITAL INPUT

Off/on management

Off/on plant from digital input ID2

Enable = ☐ NO ID2 logic, ON = ☐ OPEN

Off/on recovery (2/4 Pipes) from digital input ID3

Enable = ☐ NO ID3 logic, ON = ☐ OPEN

Off/on plant and recovery (2/4 Pipes) from BMS ☐ NO

1. Set whether to enable the system's On/Off from the ID2 digital input
2. Set whether to enable the system's On/Off from the ID3 digital input
3. Enable On/off from BMS

Unit of measure

Pay attention!

1. Disconnect modbus line
2. Change °C/bar -> °F/psi into the Chillers
3. Change °C/bar -> °F/psi into the Multichiller
4. Connect modbus line

Unit of measure °C / bar ☐ NO

Actual setpoint 7.0 °C

1. Sets and confirms the units of measurement to use to manage the units
2. Displays the actual set point with the relative unit of measurement applied

NOTICE



To change the units of measurement, follow the instructions provided on the display!

12.20 REMOTE CONTROL - MULTI-FUNCTION INPUT MANAGEMENT

Multifunction input

Function U2 NONE

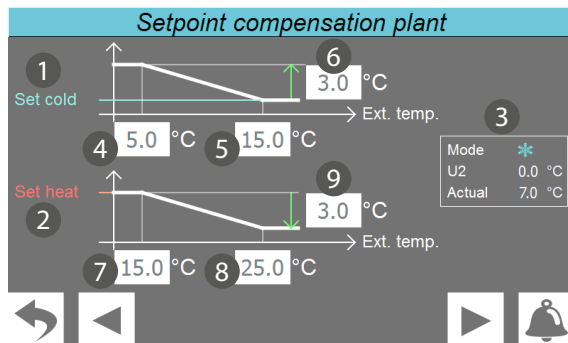
Input type U2 0-10 V

Function U3 NONE

Input type U3 0-10 V

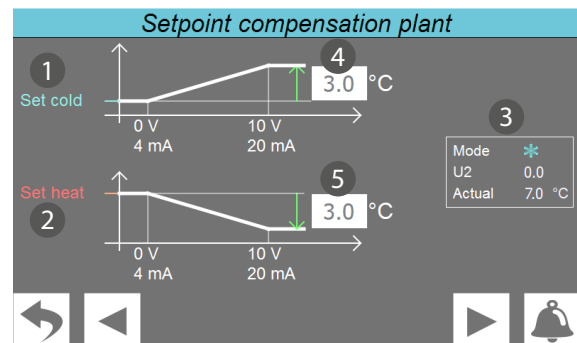
1. Set the function associated with the U2 multi-function input (for the multi-function input to be enabled, the ID6 input needs to be open); this function can be:
 - **NONE:** input disabled;
 - **SET COMPENSATION:** input used to manage the outdoor air probe (supplied) used for the set correction function with climatic curve;
 - **POWER LIMIT:** input used to calculate the maximum number of chillers to be used depending on the type of signal specified at input;
 - **POWER DEMAND:** input used to calculate the maximum number of chillers to be used depending on the type of signal specified at input;
2. Specifies the type of signal at multi-function input; this signal can be:
 - **0-10V:** signal in 0-10V voltage;
 - **4-20mA = a current signal from 4 to 20mA;**
 - **NTC:** a signal from the NTC temperature probe (option to be selected if the supplied probe has been connected for compensation with the climatic curve);
3. Set the function associated with the U3 multi-function input (for the multi-function input to be enabled, the ID7 input needs to be open); this function can be:
 - **NONE:** input disabled;
 - **SET COMPENSATION:** input used to manage the outdoor air probe (supplied) used for the set correction function with climatic curve;
 - **POWER LIMIT:** input used to calculate the maximum number of chillers to be used depending on the type of signal specified at input;
 - **POWER DEMAND:** input used to calculate the maximum number of chillers to be used depending on the type of signal specified at input;
4. Specifies the type of signal at multi-function input; this signal can be:
 - **0-10V:** signal in 0-10V voltage;
 - **4-20mA = a current signal from 4 to 20mA;**
 - **NTC:** a signal from the NTC temperature probe (option to be selected if the supplied probe has been connected for compensation with the climatic curve);

12.21 REMOTE CONTROL - CLIMATIC CURVE SETTINGS (U2 SET AS NTC FOR OUTDOOR AIR PROBE)



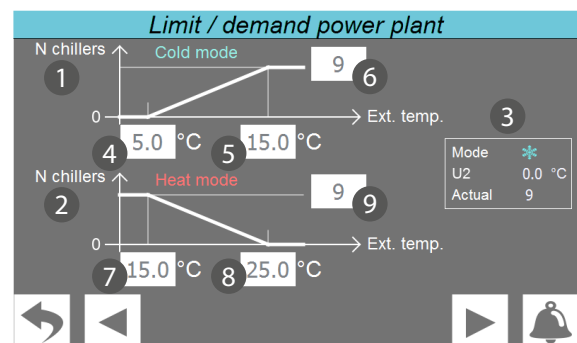
1. Indicates the chart that summarises the functioning of the climatic curve applied to the cooling set; setting at which outdoor air temperature (read by the NTC probe connected at the multi-function input duly set, as explained in the previous page) the cooling work set remains unchanged and at which it is increased and by how much
2. Indicates the chart that summarises the functioning of the climatic curve applied to the heating set; setting at which outdoor air temperature (read by the NTC probe connected at the multi-function input duly set, as explained in the previous page) the heating work set remains unchanged and at which it is decreased and by how much
3. It summarises the current system state, indicating the active functioning mode, U2 input value and the set resulting from the correction according to the described curve
4. Allows setting at which outdoor air temperature to use the primary cooling set
5. Allows setting at which outdoor air temperature to raise the primary cooling set
6. Allows setting the increase to be applied to the cooling set for the indicated temperature
7. Allows setting at which outdoor air temperature to use the primary heating set
8. Allows setting at which outdoor air temperature to lower the primary heating set
9. Allows setting the decrease to be applied to the heating set for the indicated temperature

12.22 REMOTE CONTROL - CLIMATIC CURVE SETTINGS (U2 SET AS VOLTAGE OR CURRENT VALUE)



1. Indicates the chart that summarises the functioning of the climatic curve applied to the cooling set; setting the increase to be applied to the cooling set at maximum of the input signal
2. Indicates the chart that summarises the functioning of the climatic curve applied to the heating set; setting the decrease to be applied to the heating set at maximum of the input signal
3. It summarises the current system state, indicating the active functioning mode, U2 input value and the set resulting from the correction according to the described curve
4. Allows setting the increase to be applied to the cooling set at the maximum of the input signal
5. Allows setting the decrease to be applied to the heating set at the maximum of the input signal

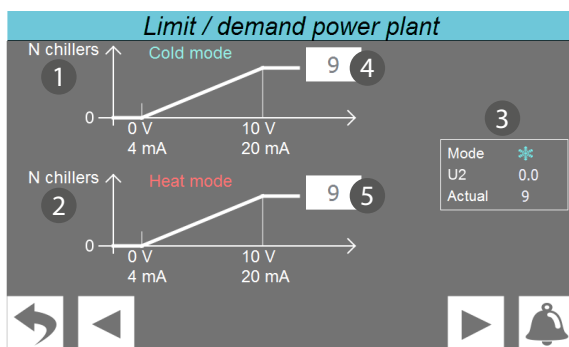
12.23 REMOTE CONTROL - POWER DEMAND/LIMITATION SETTINGS (U2 SET AS NTC PROBE)



1. Indicates the chart representing the power demand or limitation (if selected as function on the U2 input, with temperature variation) according to the temperature read by the NTC probe connected to the U2 input; the chart shows the temperature at which no chiller is active, and the one at which to activate the maximum number of chillers specified for the cooling mode

- Indicates the chart representing the power demand or limitation (if selected as function on the U2 input, with temperature variation) according to the temperature read by the NTC probe connected to the U2 input; the chart shows the temperature at which no chiller is active, and the one at which to activate the maximum number of chillers specified for the heating mode
- It summarises the current system state, indicating the active functioning mode, the temperature read by the NTC probe connected to the U2 input and the maximum number of chillers that can be activated at that time
- Allows setting up to which temperature no chiller will be activated (cooling)
- Allows setting at which temperature the specified number of chillers will be activated
- Allows setting the maximum number of chillers that can be activated
- Allows setting up to which temperature no chiller will be activated (heating)
- Allows setting at which temperature the specified number of chillers will be activated
- Allows setting the maximum number of chillers that can be activated

12.24 REMOTE CONTROL - POWER DEMAND/LIMITATION SETTINGS (U2 SET AS VOLTAGE OR CURRENT VALUE)

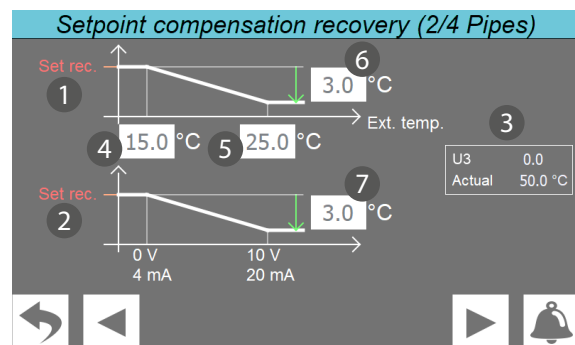


- Indicates the chart representing the power demand or limitation (if selected as function on the U2 input, with voltage or current signal) according to the U2 input signal value; the chart shows the values at which no chiller is active, and those at which to activate the maximum number of chillers specified for the cooling mode
- Indicates the chart representing the power demand or limitation (if selected as function on the U2 input, with voltage or current signal) according to the U2 input signal value; the chart shows the values at which no chiller is active, and those at which to activate the maximum number of chillers specified for the heating mode
- It summarises the current system state, indicating the active functioning mode, the U2 input signal value and

the maximum number of chillers that can be activated at that time

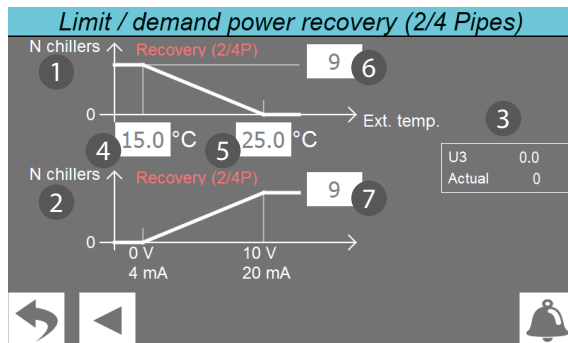
- Allows setting the maximum number of chillers that can be activated in cooling at the maximum of the input signal
- Allows setting the maximum number of chillers that can be activated in heating at the maximum of the input signal

12.25 REMOTE CONTROL - RECOVERY SIDE SET POINT COMPENSATION SETTINGS



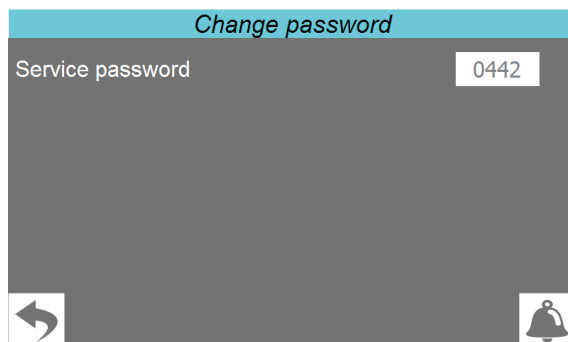
- Indicates the chart that summarises the functioning of the climatic curve applied to the recovery side set; setting at which outdoor air temperature (read by the NTC probe connected to the multi-function input duly set) the recovery work set remains unchanged and at which it is decreased and by how much
- Indicates the chart that summarises the functioning of the climatic curve applied to the recovery side set; setting the decrease to be applied to the heating set at maximum of the input signal
- Indicates the value read by the device connected to input U3 and the set resulting from correction according to the curve described
- Allows setting at which outdoor air temperature to use the primary recovery side set
- Allows setting at which outdoor air temperature to lower the primary recovery side set
- Allows setting the decrease to be applied to the recovery side set for the indicated temperature
- Allows setting the decrease to be applied to the heating set at the maximum of the input signal

12.26 REMOTE CONTROL - POWER DEMAND/LIMITATION SETTINGS ON RECOVERY SIDE



1. Indicates the chart representing the power demand or limitation (if selected as function on the U3 input, with temperature variation) according to the temperature read by the NTC probe connected to the U3 input; the chart shows the temperature at which no chiller is active, and the one at which to activate the maximum number of chillers specified for the recovery mode
2. Indicates the chart representing the power demand or limitation (if selected as function on the U3 input, with voltage or current signal) according to the U3 input signal value; the chart shows the values at which no chiller is active, and those at which to activate the maximum number of chillers specified for the recovery mode
3. Indicates the value read by the device connected to input U3 and the maximum number of chillers that can be activated at that time
4. Allows setting up to which recovery temperature no chiller will be activated
5. Allows setting at which temperature the specified number of chillers will be activated
6. Allows setting the maximum number of chillers that can be activated
7. Allows setting the maximum number of chillers that can be activated at the maximum of the input signal

12.27 PASSWORD - PASSWORD SETTING



Indicates the value to be used as password to access the installer menu.

NOTICE



Please make a note of any password change in order to avoid possible forgetfulness.

12.28 INFO - SOFTWARE VERSIONS DISPLAY

pCO5+		Touch screen	
Software version (C7)	1.5.0	Software version	1.5.0
Bios	6.61	Main OS version	1.61C
Boot	5.01	Runtime version	1.90 (0) - Build (1079)
		IP address	192.168.170.245

1. Indicates the software component versions of the main pCO5+ board
2. Indicates the software component versions of the touch screen

12.29 CHARTS - TEMPERATURE PROBE SETTING FOR CHARTS VALUES

Trend probes	
Graphics probes plant side	B1 B2 pCOe
Graphics probes rec.(2/4 Pipes)	B3 B4 pCOe

1. Indicates which temperature probes are used for the charts (system side)
2. Indicates which temperature probes are used for the charts (recovery side)

12.30 CHILLERS NETWORK - SET OF THE CONNECTED CHILLERS (PAGE 1)

Chillers network					
N	Modbus library	Addr. Chiller	Addr. Slave1	Addr. Slave2	Addr. Slave3
1	NRL NRB NRK NLC NYB NRV	1	0	0	0
2	NRL NRB NRK NLC NYB NRV	2	0	0	0
3	None	3	0	0	0
4	None	4	0	0	0
5	None	5	0	0	0

1. Indicates the Modbus library used to communicate with the network chillers; the number on the left indicates the chiller to which we refer. If you want to add a chiller, you must specify the correct library to be used for serial communication. However, if a chiller is added at a later stage, the overall management needs to be "fixed threshold" since, in order to use the optimised managements, it is necessary to load the specific data of the units on the MULTICHILLER-EVO (for more information, contact the AFTER-SALES SERVICE/ASSISTANCE AUTHORIZED).
2. Indicates the Modbus address to be assigned to each chiller
3. Indicates, only for the NSM units working in master/slave mode, the chiller slave 1 address
4. Indicates, only for the NSM units working in master/slave mode, the chiller slave 2 address
5. Indicates, only for the NSM units working in master/slave mode, the chiller slave 3 address

12.31 CHILLERS NETWORK - SET OF THE CONNECTED CHILLERS (PAGE 2)

Chillers network					
N	Modbus library	Addr. Chiller	Addr. Slave1	Addr. Slave2	Addr. Slave3
6	None	6	0	0	0
7	None	7	0	0	0
8	None	8	0	0	0
9	None	9	0	0	0

Expansion board		Addr.
1	pCOe	10

1. Indicates the Modbus library used to communicate with the network chillers; the number on the left indicates the chiller to which we refer. If you want to add a chiller, you must specify the correct library to be used for serial communication. However, if a chiller is added at a later stage, the overall management needs to be "fixed threshold" since, in order to use the optimised managements, it is necessary to load the specific data

of the units on the MULTICHILLER-EVO (for more information, contact the AFTER-SALES SERVICE/ASSISTANCE AUTHORIZED).

2. Indicates the Modbus address to be assigned to each chiller
3. Indicates, only for the NSM units working in master/slave mode, the chiller slave 1 address
4. Indicates, only for the NSM units working in master/slave mode, the chiller slave 2 address
5. Indicates, only for the NSM units working in master/slave mode, the chiller slave 3 address
6. Specifies whether the pCOe expansion board is present
7. Indicates the Modbus address assigned to the pCOe board. The address assigned to the pCOe board must match the one set on the same board via DIP-switch. By default, the dips on the board are set to assign the pCOe address 10, however, if desired, you can modify it with a value between 1 and 15, by properly modifying the dips on the pCOe board

NOTICE



The DIP-switches on the pCOe used to set the serial address made up of 4 "weighed" dips; the value assigned to the serial address of the pCOe board will be equal to the sum of the active dips values (to activate a dip it is necessary to move it down); below are some examples:



2 + 8 = pCOe address: 10 (default)



1 + 4 = pCOe address: 5



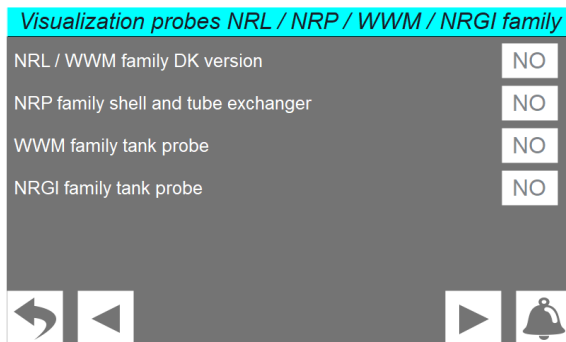
2 + 4 + 8 = pCOe address: 14

12.32 DISPLAYS - ENABLE PCO PROBE READING

Visualization probes pCO5+ and pCOe1			
U1 external / cond. temp.	YES	B1 inlet plant	YES
		B2 outlet plant	YES
		B3 inlet recovery (2/4P)	NO
		B4 outlet recovery (2/4P)	NO

It enables the reading of probes and displays them on the touch screen panel.

12.33 DISPLAYS - ENABLES PROBE READING FOR NRL/NRP/WWM/ NRG1



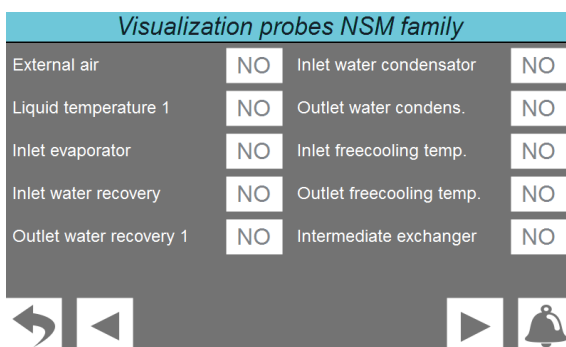
1. Indicates whether to enable reading of the specific probes for the DK version chillers; if enabled, reading of these probes will be displayed on the monitor pages of each individual chiller
2. Indicates whether to enable reading of the various probes specific for NRP chillers; if enabled, reading of these probes will be displayed on the monitor pages of each individual chiller
3. Displays the reading of the appropriate probes in the chiller detail pages in the case of modbus library 'Type WWM, WRL, WWB, NXW, BXW'
4. Displays the reading of the appropriate probes in the chiller detail pages in the case of modbus library 'Type NRG1'

NOTICE



The accessory cannot manage mixed systems; for a correct value display, all system chillers must (in this case) be in DK version.

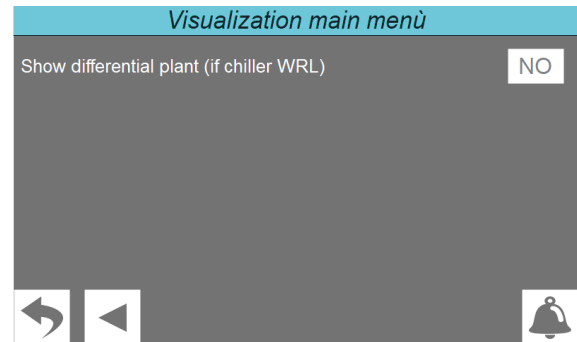
12.34 DISPLAYS - ENABLES PROBE READING FOR NSM



Indicates whether to enable reading of the various probes specific for the NSM chillers; if enabled, reading of these

probes will be displayed on the monitor pages of each individual chiller (page "7.1 Chiller main monitor (HOME) [on page 16](#)")

12.35 DISPLAYS - ENABLES DEBUG MENU

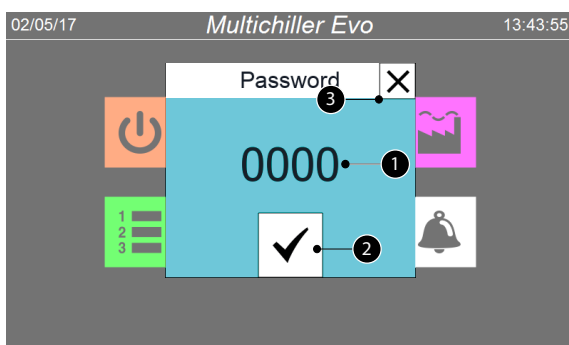


In the case of WRL chillers, the system differential in the MULTICHILLER-EVO page is hidden. This is because the WRL unit does not have a modbus system differential. If the WRL software is updated, then it can be displayed.

13 MANUFACTURER MENU

The MANUFACTURER menu contains confidential settings, the modification of which is not available to the user or installer; the parameters contained in this menu are only available to the AFTER-SALES SERVICE/ASSISTANCE AUTHORIZED.

13.1 ACCESS PASSWORD ENTERING



1. Allows entering the numeric value of the password;
2. Allows confirming the entered password;
3. Go back to the menu selecting page.

14 ALARM MENU


The ALARM menu is used to view (and reset, if necessary) the alarm conditions that may arise on the unit while it's working. The alarms are divided into various categories according to their seriousness. Remember that some of them can cause serious damage to the unit so, before performing a reset, it's important to be sure about the nature of the alarm and the reason it was triggered (contacting AFTER-SALES SERVICE/ASSISTANCE AUTHORIZED if necessary).

14.1 DISPLAYS ACTIVE ALARMS

22/05/17 Alarms 11:31:17	
Date Time	Description
2017/05/22 - 11:31:06 AM	AL021 Chiller1 offline



1. Date and time for the alarm
2. Alarm code and description

: go to alarms log

14.2 DISPLAYS ALARMS LOG

22/05/17

History alarms

11:35:53

Duration	5 min	from	2017/05/22 - 11:30:48
		to	2017/05/22 - 11:35:48
Date Time	Val	Description	
2017/05/22 - 11:31:59 AM	0	AL021 Chiller1 offline	
2017/05/22 - 11:31:06 AM	1	AL021 Chiller1 offline	



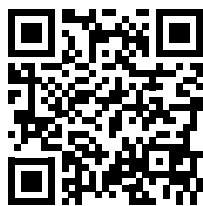
1. Allows selecting to filter the log displaying only the occurred alarms within a certain selected period
2. Indicates the period to which the displayed alarms refer
3. Date and time for the alarm
4. Alarm code and description
5. Date and time the alarm was reset
6. Code and description of reset alarm

15 LIST OF ALARMS

Table of contents	Meaning	Note
AL001	U1 broken or disconnected	
AL002	U2 broken or disconnected	
AL003	U3 broken or disconnected	
AL004	U4 broken or disconnected	
AL005	U5 broken or disconnected	
AL006	U6 broken or disconnected	
AL007	U7 broken or disconnected	
AL008	U8 broken or disconnected	
AL009	U9 broken or disconnected	
AL010	U10 broken or disconnected	
AL011	1B1 broken or disconnected	
AL012	1B2 broken or disconnected	
AL013	1B3 broken or disconnected	
AL014	1B4 broken or disconnected	
AL015	2B1 broken or disconnected	
AL016	2B2 broken or disconnected	
AL017	2B3 broken or disconnected	
AL018	2B4 broken or disconnected	
AL019	pCOe1 offline	
AL020	pCOe2 offline	
AL021	Chiller1 offline	
AL022	Chiller2 offline	
AL023	Chiller3 offline	
AL024	Chiller4 offline	
AL025	Chiller5 offline	
AL026	Chiller6 offline	
AL027	Chiller7 offline	
AL028	Chiller8 offline	
AL029	Chiller9 offline	
AL030	Initialis. Completed, reboot PLC!	
AL031	Slave1 Chiller1 offline	
AL032	Slave2 Chiller1 offline	
AL033	Slave3 Chiller1 offline	
AL034	Slave1 Chiller2 offline	
AL035	Slave2 Chiller2 offline	
AL036	Slave3 Chiller2 offline	
AL037	Slave1 Chiller3 offline	
AL038	Slave2 Chiller3 offline	
AL039	Slave3 Chiller3 offline	
AL040	Slave1 Chiller4 offline	
AL041	Slave2 Chiller4 offline	
AL042	Slave3 Chiller4 offline	
AL043	Slave1 Chiller5 offline	
AL044	Slave2 Chiller5 offline	
AL045	Slave3 Chiller5 offline	
AL046	Slave1 Chiller6 offline	
AL047	Slave2 Chiller6 offline	
AL048	Slave3 Chiller6 offline	
AL049	Slave1 Chiller7 offline	
AL050	Slave2 Chiller7 offline	
AL051	Slave3 Chiller7 offline	
AL052	Slave1 Chiller8 offline	
AL053	Slave2 Chiller8 offline	
AL054	Slave3 Chiller8 offline	
AL055	Slave1 Chiller9 offline	

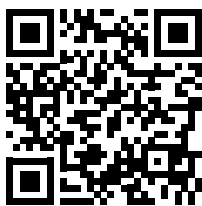
Table of contents	Meaning	Note
AL056	Slave2 Chiller9 offline	
AL057	Slave3 Chiller9 offline	
AL058	Alarm from digital input 8	
AL059		
AL060	Permanent Memory pCO ₂ +	
AL061	Chiller1 alarm	
AL062	Chiller2 alarm	
AL063	Chiller3 alarm	
AL064	Chiller4 alarm	
AL065	Chiller5 alarm	
AL066	Chiller6 alarm	
AL067	Chiller7 alarm	
AL068	Chiller8 alarm	
AL069	Chiller9 alarm	
AL070		
AL071		

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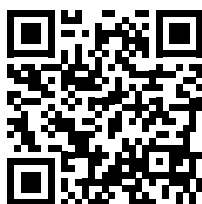
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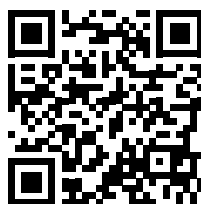
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