EN

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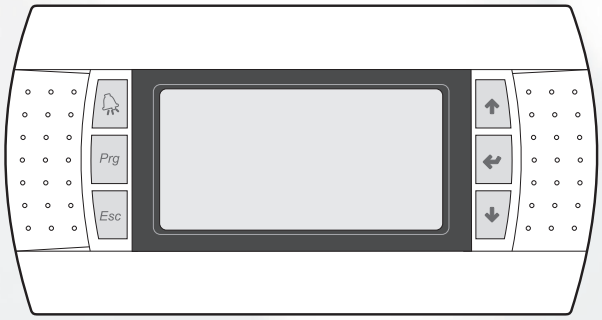
Translation of Original instructions

NYG

User manual



CARD PCO5 - PANEL PGD1

AERMEC

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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.

CERTIFICATIONS

COMPANY CERTIFICATIONS

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.

In accordance with Italian Legislative Decree 116 / 2020, the machine's packaging is marked; for unmarked packaging parts, the composition is as follows: **Expanded polystyrene - PS 6**

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1 SIGNAL WORD AND SIGNAL WORD PANELS KEY

In the following pages, the following Signal Word Panels will be used to facilitate understanding of the degree of importance of the instructions:

˝DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

˝WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

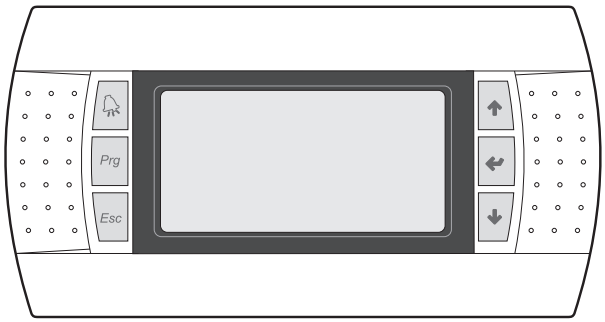
˝CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Is used to address practices not related to physical injury.

2 USER INTERFACE (PGD1)



The command panel of the unit allows the rapid setting of the working parameters of the machine, and their visualisation. The card stores all the default settings and any modifications.
The installation of the remote panel PGD1 makes it possible to copy from remote all the functions and settings available on the machine.
After the absence of voltage for any period of time, the unit is able to start up again automatically, maintaining the original settings.
The main user interface is a graphic monitor with six navigation keys; the displays are organised with a menu hierarchy, which is activated by pressing the navigation keys. The default view of these menus is represented by the main menu; you can navigate between the various parameters by using the arrow keys on the right-hand side of the panel; these keys are also used to change the selected parameters.

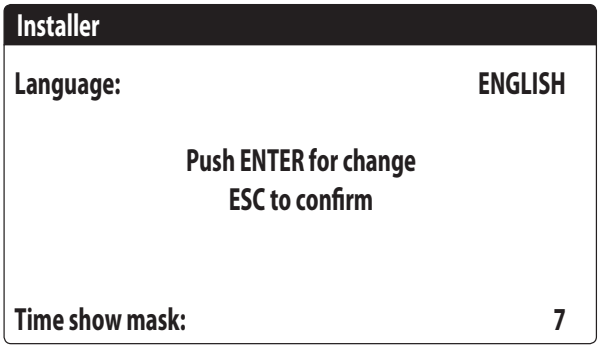
2.1 START-UP PROCEDURE

After powering up the unit, the control board will perform some preliminary operations before it is ready for use; these initial procedures take about 30 to 60 seconds to complete; two windows (one for start-up and one for system language selection) are displayed during the initial loading procedures; these windows are specified in the table below.

NOTICE

The system language can be set in the window shown at start-up, or at any moment by changing the window contained in the installer menu.

This window indicates the seconds remaining until the software loaded in the unit starts up (switching to the system language selection);



This window makes it possible to select the language with which the system is started.

2.2 FUNCTION OF THE PGD1 CONTROL PANEL KEYS

: Displays the list of active and historical alarms (red LED on = active alarm);
: Pressing this button activates menu navigation (orange LED lit = winter operation mode active; orange LED flashing = defrosting in progress);
: Pressing this key returns to the previous window;
: Pressing this key can have different functions:
— Pressing this key when navigating menus/parameters passes to the next menu/parameter;
— Pressing this key when changing a parameter increases the value of the selected parameter;
: Pressing this key can have different functions:
— Pressing this key when navigating menus enters the selected menu;
— Pressing this key when navigating parameters selects the displayed parameter and enters change mode;
— Pressing this key when changing a parameter confirms the change to the value of the selected parameter;
: Pressing this key can have different functions:

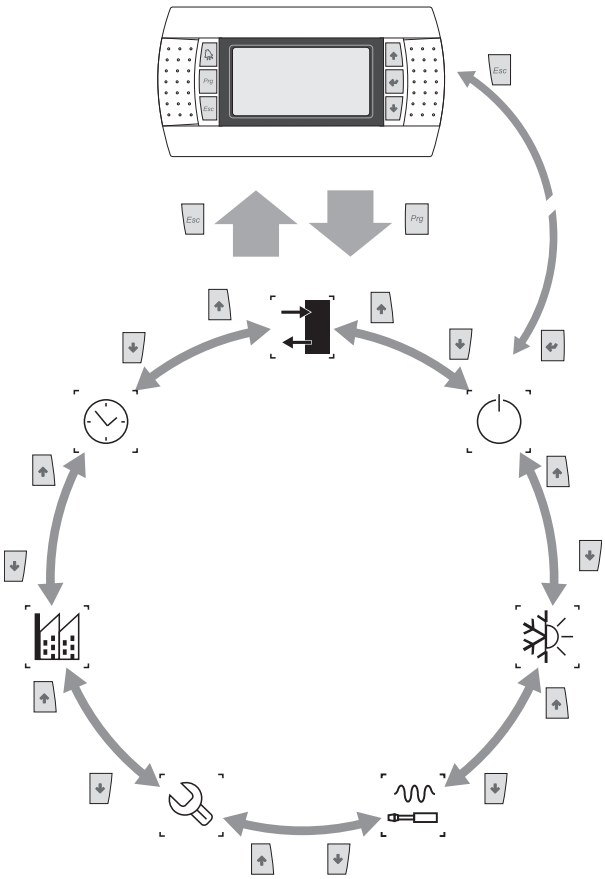
— Pressing this key when navigating menus/parameters passes to the previous menu/parameter;
— Pressing this key when changing a parameter decreases the value of the selected parameter;

2.3 MENU STRUCTURE

All the functions for managing the unit as well as the information about its operation are displayed on the unit control panel; all the functions and information are organised into windows, which are in turn grouped in to menus.
When the unit is operating normally, a main menu is displayed, which is used to select other operating menus.
The menus are displayed via the rotation of the icons that represent them; once the desired icon is selected, the select menu opens, and it is possible to display or change the corresponding parameters. The procedure for navigating the menus, or changing the parameters, is explained in detail in the chapter "Operational utilisation procedures", to which reference is made for more information.
The image shows the relationships between the various menus and the keys used for navigation.

NOTICE

The following pages show all the masks contained in the menus available to the user; Tampering with the parameters in the installer menu could cause the unit to malfunction, therefore it is recommended to have these parameters changed only by personnel assigned to unit installation and configuration;



2.3.1 Menu icons

IN/OUT: This menu contains advanced information about operating the unit;

ON/OFF: This menu allows you to activate or deactivate the unit, change the season and any time periods;

SYSTEM: System parameters (chiller, heat pump) in the machine, enabling, nominal and second setpoint, time periods;

INSTALLER: This menu contains settings useful for the installer (Digital input enabling, BMS configuration, adjustments, pumps, etc ...);

NOTICE

This menu is password protected. The value to be set for access is: 0000.

ASSISTANCE: This menu is not accessible except by authorized staff;

MANUFACTURER: This menu is not accessible except by authorized staff;

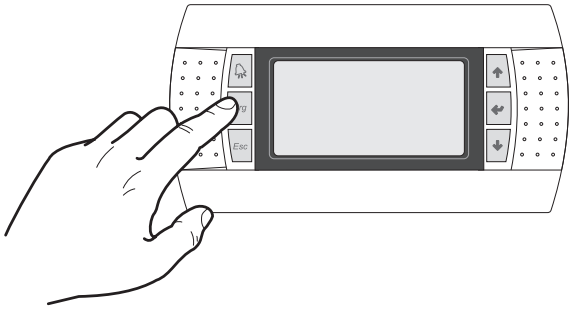
CLOCK: This menu contains the time settings for system management (date and time, calendar);

2.4 USER OPERATING PROCEDURES

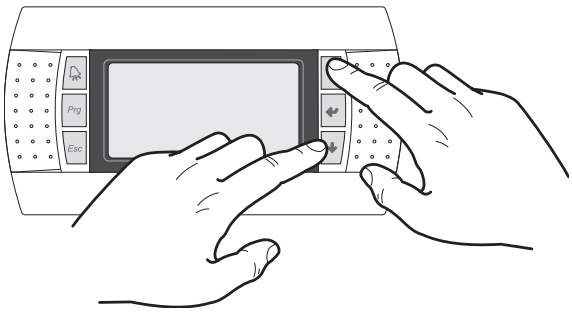
To check or modify the operating parameters of the unit it is necessary to use the interface of the control panel on the unit.
The basic operations that the user must be capable of, for the correct use of the unit, are:
— Moving between menus;
— Selecting and modifying a menu.

2.4.1 Moving between menus

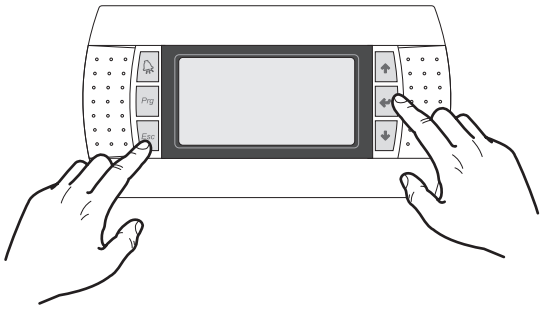
To move between the menus, the order in which they are displayed is shown in the previous page, enter the menu selection mode by pressing the key Prg;



Once in the menu selection mode it is possible to move between menus using the arrow keys: the key ↑ to move to the previous menu, and the key ↓ to move to the next menu:

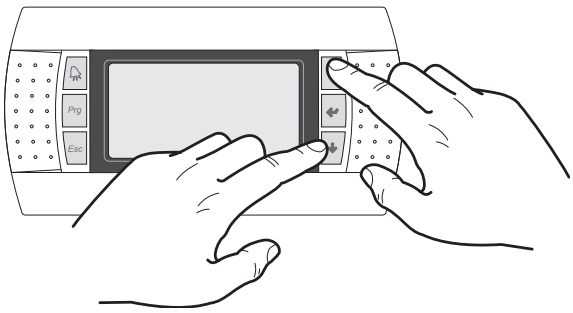


When the desired menu is seen press the key ↵ to enter the menu. Press the key Esc to return to the menu selection mode:



2.4.2 Selecting and modifying a menu

Once in the menu selected, by following the procedure, it is possible to move between the screens using the arrow keys: the key ↑ to move to the previous parameter, and the key ↓ to move to the next parameter:



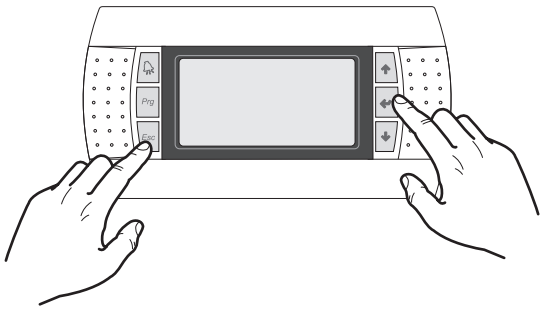
When the desired parameter is seen press the key ↵ to enter the parameter. To exit the parameter and return to the parameter selection mode press the key Esc.

NOTICE

Once a parameter is selected by pressing the key ↵, the parameter selection mode is automatically accessed.

In this mode the desired parameter values can be set with the following procedure:

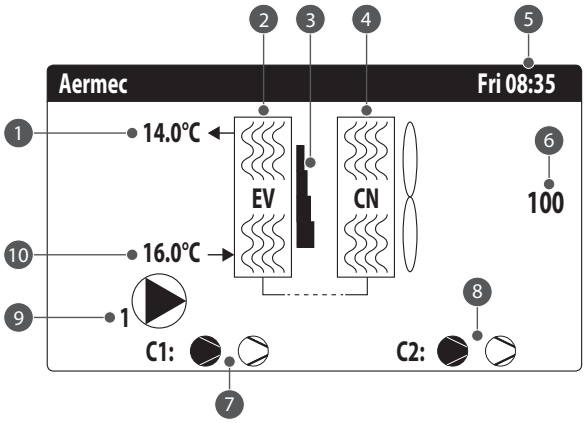
1. Pressing the key ↵ causes a flashing cursor to appear on the first modifiable field of the parameter. If no modifiable fields are displayed then the cursor will not appear.
2. Pressing the key ↑ or the key ↓, the value of the field can be increased or decreased;
3. Pressing the key ↵ confirms the modification of the field value, saving it in memory.



NOTICE

On the basis of the type of parameter selected the number of modifiable fields can change.

3 MAIN MASKS



1 System water outlet temperature;
2 System exchanger (EV=evaporator);
3 Percentage of power (displayed graphically with a bar to the right of the evaporator) requested by the system;
4 Coil (CN=condenser);
5 Current date and time
6 Fan speed percentage (0..100);
7 Circuit 1 on-off compressor status;
8 Circuit 2 on-off compressor status;
9 Pump active: this icon appears if the unit's pump is running; if the unit has several pumps, the number next to the icon indicates which one is active;
10 System water inlet temperature.

NOTICE

Some icons can appear in the window, indicating certain system states::

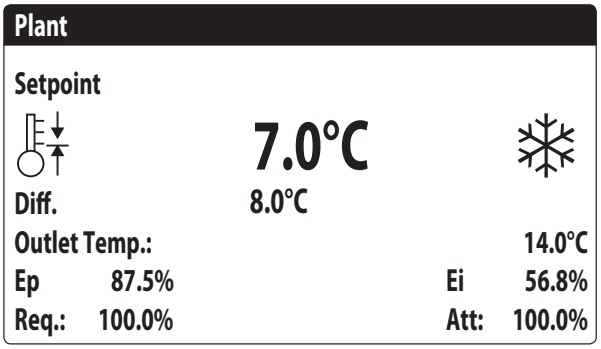
— : anti-freeze heater activation;
— (LT): Indicates that low output temperature anti-freeze prevention is active (turns off the compressors)
— (LC): Indicates that the force-off algorithm for low water content is active (turns off the compressors)
— (HT): Indicates that the dynamic force off for low outside temperature has tripped;
— (F): Indicates that the flow switch is open. The compressors are turned off and the pumps release the flow switch
— : indicates that the compressor is off;
— : indicates that the compressor is on;
— : indicates a compressor alarm;
— **FC**: Indicates that Freecooling is active, the 3-way Freecooling valve outlet is closed

The states in which the unit can be found are as follows:

C1 / C2: The system is active and running
Unit off by alarm: There is a serious alarm that stops the system (check the alarm list);
General off by key: The system is off by terminal, check ON/OFF mask;
Off by supervisor: The supervision system has prevented unit start-up;
Off by time periods: The time periods set switch the whole system off;
Off by digital input: The digital input closed switches the system OFF;
Off by display: the system is off by terminal, check chiller mask;
Manual mode: not envisioned;
Off by master: The system is off by master;
Outside operational limits: The system is out of operational limits.

3.1 SYSTEM MONITOR

This mask is used to display the system's general status:



— Current working setpoint;
— Current working differential (visible with PI adjustment);
— Temperature probe for machine regulation;
— If a PI regulation is active, also the proportional factor "Ep" and the integral factor "Ei" will be displayed;
— Requested percentage of power and percentage of power actually active on the system side;

NOTICE

Some icons can appear in the window, indicating certain system states::

— : system chilled water production;
— : system hot water production;
— : time bands active;
— (M): multifunction input;

3.2 MASTER UNIT MONITOR

This mask is used to display the data related to the system's total power demand and the relative power percentages divided among the units connected to the system:

Master	
Common Outlet:	---°C
Total require	100.0%
Circuit 1:	100.0%
Circuit 2:	100.0%

— **Common output (optional)**: probe water temperature on the common output of the two master and slave unit outputs;
— **Demand**: power calculated by the Master unit thermostat that will be distributed between the two units;
— **Unit 1**: percentage power requested of the Master unit;
— **Unit 2**: percentage power requested of the Slave unit;

NOTICE

This mask is only available on the Master unit, if the system has a Master/Slave configuration with multiple units.

3.3 CIRCUIT MONITORS

This mask is used to display the cooling circuit's general status; if the unit has multiple circuits, each will have a dedicated window:

Circuit 1				
HP:	15.5bar	→	Tc	48.3°C
LP:	5.0bar	→	Te	7.9°C
Liquid T.				30.0°C
Disch.T CP1A				110.3°C
Disch.T CP1B				78.0°C
CP1:			0s	
CP2:			0s	

Circuit 2				
HP:	15.5bar	→	Tc	48.3°C
LP:	5.0bar	→	Te	7.9°C
Liquid T.				30.0°C
Disch.T CP2A				114.8°C
Disch.T CP2B				82.6°C
CP1:			0s	
CP2:			0s	

— **AP**: high pressure
— **BP**: low pressure
— **Tc**: condensation temperature
— **Te**: evaporating temperature
— **T.Liquid**: liquid temperature
— **Pressing line Gas T.**: compressor pressing line gas temperature

The status of the compressors can be:

— ◔: indicates that the compressor is off, the (remaining) time to satisfy the minimum OFF time is indicated to the side;

If flashing = Compressor switched off but will soon be switched on.

— ◕: indicates that the compressor is on, the (remaining) time to satisfy the minimum ON time is indicated to the side;
— ⊗: indicates a compressor alarm;

3.4 POWER DEMAND MONITOR

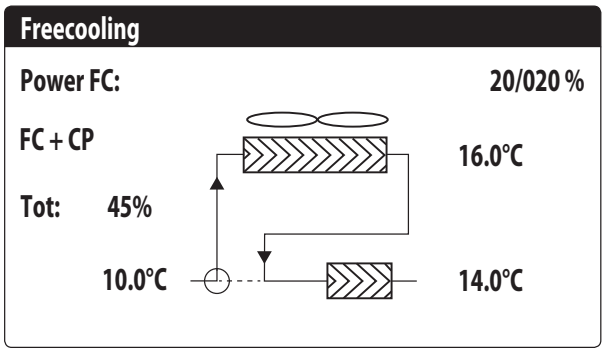
This mask is used to display the data related to the power demand on the indicated circuit; if the unit has multiple circuits, each will have a dedicated window:

Circuits	
Total require	100.0%
Circuit 1:	50.0%
Circuit 2:	50.0%
Time between starts:	0s

— Total thermostat request;
— Power delivered by circuit 1 and 2;
— Seconds remaining until the next compressor is switched on.

3.5 FREE COOLING MONITOR

This mask is used to display the status of the free cooling circuit:



— Activation of the 3-way valve with the display of moving arrows for pump status and water circulation;
— Power delivered by the free cooling based on that available;
— Operating status;
— Tot: total power as a percentage delivered by the unit. If only free cooling, corresponds to the total power delivered by free cooling, if mixed operation the total power is the sum of the power delivered by free cooling and the compressors;

Possible operating status:
— OFF (unit off);
— FC (unit only operating in free cooling);
— FC+CP (unit in mixed operation);
— CP (unit operating with compressors only);

NOTICE

This mask is available on free cooling units.

4 INPUT/OUTPUT MENU

4.1 FAN MONITOR

This window summarises the state of the fans and the utilised setpoints:

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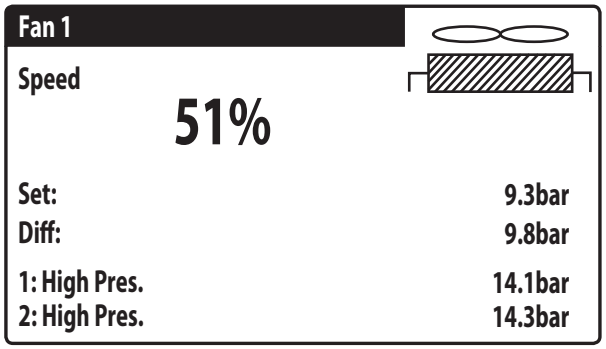
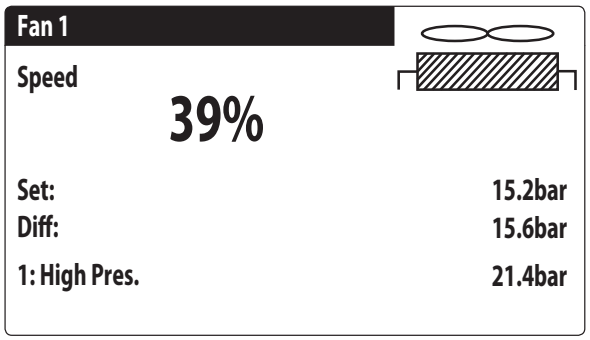
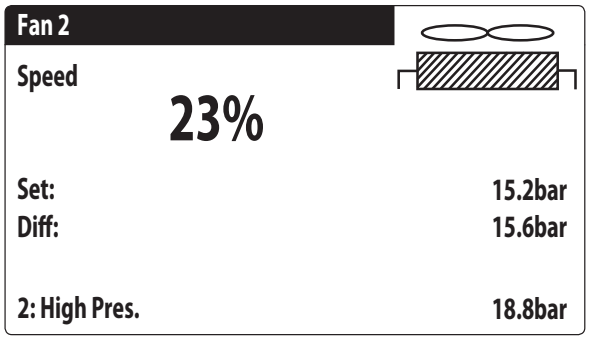


NYG 1000-1800





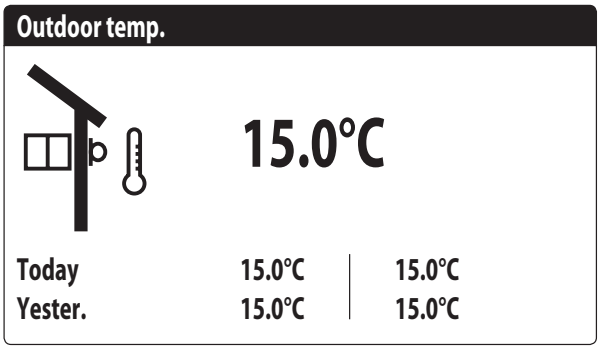
— **Speed**: this value indicates the current speed (as a percentage) at which the concerned fans are operating (common, circuit 1 or circuit 2);
— **Set**: Fan setpoint: this value indicates the current ventilation setpoint;
— **Diff**: Ventilation setpoint differential: this value indicates the current differential applied to the ventilation setpoint;

The state of the fans (displayed on the row at the bottom of the window), can be:

— **OFF**: fans off;
— **PREVENTILATION**: the fans switch on earlier than the compressors;
— **high pressure**: control based on high pressure;
— **POSTVENTILATION**: ventilation after the compressors switch-off;
— **ANTI-FREEZE**: ventilation phase to prevent the accumulation of snow or the formation of ice;
— **DEFROSTING**: defrosting phase in progress;
— **Equalisation**: control based on low temperature;
— **MAXIMUM SPEED**: fans at maximum speed;
— **SILENCED**: speed reduced to reduce noise

4.2 OUTSIDE TEMPERATURE MONITOR

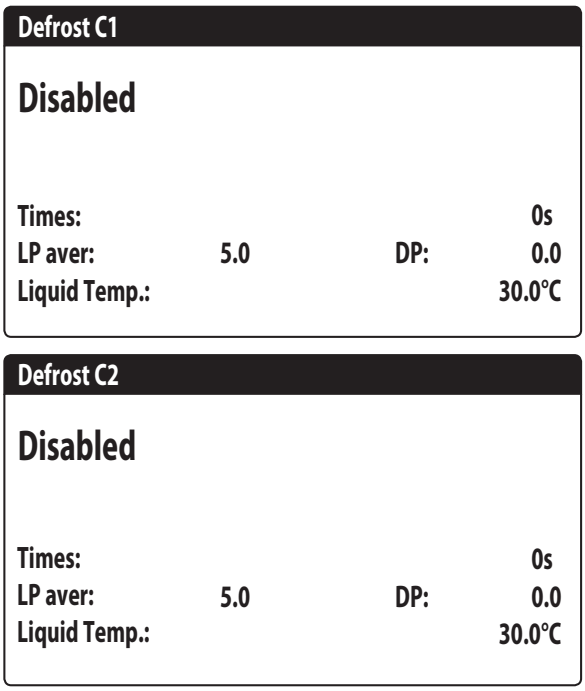
This window indicates the value of the outside temperature detected by the unit:



The last two lines show the minimum and maximum temperatures recorded during the current day and during the previous day.

4.3 DEFROSTING MONITOR

This window contains the information concerning the state of defrosting on the unit:



The state of defrosting is divided between two rows, the first can have the following states:

— **Disabled**: defrosting is disabled;
— **Bypass**: bypass phase after the compressor start;
— **Decreasing calculation**: phase calculating the decrease of pressure;
— **Wait for cycle inversion**: pause before inversion of the cycle valve;
— **Defrosting start**: defrosting during the start phase;
— **Defrosting in progress**: defrosting phase;
— **End of defrosting**: conclusion of defrosting;
— **First defrost**: shows the first defrost phase after a power loss.

The second row can have the following states:

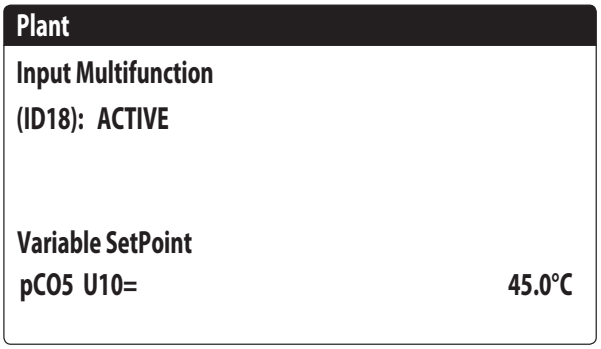
— **High outside temperature**: the air temperature is above the defrosting enabling threshold;
— **Circuit off**: all the compressors of the circuit are off; defrost is disabled;
— **LP above the limit threshold**: the low pressure is above the limit threshold to trigger defrosting;
— **Min times between defrosting procedures**: the defrosting is disabled to respect the minimum time between defrosting procedures;
— **Start CP**: compressor just started, wait for defrosting bypass time;
— **New LP reference**: a new low pressure value has been taken as reference for the calculation of decreasing pressure;
— **Start for LP limit**: start of the defrosting due to exceeding the low pressure limit threshold;
— **Start for Delta P**: start of defrost to overcome the decreasing value of low pressure;
— **Liquid Temp OK**: the temperature of the liquid exceeded the threshold for determining the end of defrosting;
— **Min defrosting times**: defrosting continues until exceeding the minimum defrosting time even if the output conditions were already reached;
— **Awaiting other circuit**: occurs if the fans are common to both circuits and the first circuit to finish defrost awaits the second circuit to finish;
— **Bypass first start**: the first defrost after a power loss can only occur after the compressor has run for the determined time;
— **Liquid temp. Low**: liquid temperature below the level that determines the end of defrost;
— **Start for TGP**: defrosting was activated due to exceeding the temperature threshold of the discharge gas;
— **Forced**: defrosting was forced by the user;

The following data is available in the lower part of the window:

— **Times**: displays the seconds related to the defrosting times;
— **Low average pressure**: shows the average low pressure in the last minute;
— **Delta pressure**: shows the accumulated delta pressure to determine activation of defrost;
— **T.Liquid**: temperature of the liquid to determine the defrosting output.

4.4 MULTIFUNCTION INPUT MONITOR

This window contains the information concerning the state of the multifunction input:



Digital Input ID18: this value indicates the state of the digital input connected to multifunction input (U10) enabling, whose states can be:

— OPEN: multifunction input (U10) NOT ENABLED;
— CLOSED: multifunction input (U10) ENABLED;

NOTICE

The functions currently selected for the multifunction input U10 are displayed at the bottom of the window; to set that function, refer to the dedicated paragraph in the installer menu.

4.5 I/O MONITOR

The status of the available inputs and outputs will be shown on the display, divided into successive pages;the following paragraphs will contain the tables with the various analogue and digital inputs and outputs (in the order in which they will be listed on the display of the unit) available on the software;

The order in which the masks will be available will be as follows:
— Analogue inputs;
— Digital inputs;
— Digital outputs;
— Analogue outputs;
— Analogue inputs (EVD Expansion);
— Inputs and outputs (pCOE Expansion).

NOTICE

The displays may or may not be present (or change) depending on the model of the unit.

5 INPUT AND OUTPUT

5.1 ANALOGUE INPUTS

Analogue inputs	Code	Description	Note
U1	SIW	evaporator water inlet probe	
U2	SUW	evaporator water outlet probe	
U3	TD	Water differential transducer	
U4	SGP1A	Compressor 1 Circuit 1 discharge gas probe	
U5	TAP1	High pressure transducer circuit 1	
U6	SGP1B	Compressor 2 Circuit 1 discharge gas probe	NYG 1000-1800
U7	SGP2A	Compressor 1 Circuit 2 discharge gas probe	
U8	TAP2	High pressure circuit 2 transducer	
U9	SGP2B	Compressor 2 Circuit 2 discharge gas probe	NYG 1000-1800
U10	MULTI IN Common outlet probe	Multi-function input Common output with Master/Slave	

5.2 DIGITAL INPUTS

Digital inputs	Code	Description	Note
ID1	FL	Evaporator flow switch	
ID2	AP1	Circuit 1 high pressure switch	
ID3	QMF1	Thermal switch fan 1	
ID4	RCS	Phase monitor	
ID5	QM1A	Overload compressor 1 circuit 1	
ID6	QM1B	Overload compressor 2 circuit 1	NYG 1000-1800
ID7	BP1	Circuit 1 low pressure pressure switch	
ID8	AP2	Circuit 2 high pressure switch	
ID9	TV1	Fans thermal switch series	
ID10	SET2	Second setpoint	
ID11	QM2A	Overload compressor 1 circuit 2	
ID12	QM2B	Overload compressor 2 circuit 2	NYG 1000-1800
ID13	BP2	Circuit 2 low pressure pressure switch	
ID14	TMP1	Pump 1 circuit breaker	
ID15	TMP2 / FLS	Pump 2/secondary side flow switch thermal switch	
ID16	C/F	Remote season contact (closed = summer mode)	Heat pump
ID17	ON/OFF	Remote ON/OFF contact (closed = ON)	
ID18	EMF	Multifunction input enabling	

5.3 DIGITAL OUTPUTS

Digital outputs	Code	Description	Note
NO1	CP1A	Compressor 1 Circuit 1	
NO2	CP1B	Compressor 2 Circuit 1	NYG 1000-1800
NO3			
NO4			
NO5			
NO6	VIC1	Circuit 1 cycle inversion valve (reverse logic)	Heat pump
NO7	MV1	Ventilation group 1	
NO8	AE	Alarm summary	
NO9	CP2A	Compressor 1 Circuit 2	
NO10	CP2B	Compressor 2 Circuit 2	NYG 1000-1800
NO11			
NO12	V2V	Evaporator valve / Cooling-side manifold valves	All modular NYG versions
	---	---	All versions NYG 1000-1800

Digital outputs	Code	Description	Note
NO13	V2V1	Heat side manifold valve	Heat Pump Modular NYG
	V2VA	Freecooling valve (1=freecooling enabled)	NYG 0500/NYG 1000-1800 Freecooling
	---	---	Modular NYG Cooling Only NYG 1000-1800 Cooling/heat pump only
NO14	VIC2	Circuit 2 cycle inversion valve (reverse logic)	NYG 0500/NYG 1000-1800 Heat Pump NYG 0500/NYG 1000-1800 Only Cooling/Freecooling
	---	---	
NO15	---	---	
NO16	MPO1	Pump 1 evaporator	
NO17	RE	Heater exchanger	
NO18	MPO2	Pump 2 evaporator	

5.4 ANALOGUE OUTPUTS

Analogue outputs	Code	Description	Note
Y1	FAN1	Ventilation group 1	
Y2	FAN2	Ventilation group 2	
Y3	FANC	Shared ventilation unit	NYG 1000-1800
Y4			
Y5			
Y6	RCI	Water circuit resistors	

5.5 ANALOGUE INPUTS (EVD TWIN EXPANSION)

Analogue inputs	Code	Description	Note
S1	TBP1	Low pressure transducer circuit 1	
S2	SGA1	Circuit 1 suction probe	
S3	TBP2	Low pressure transducer circuit 2	
S4	SGA2	Circuit 2 suction probe	

5.6 ANALOGUE INPUTS (PCOE EXPANSION)

Analogue inputs	Code	Description	Note
B1	---	---	NYG 0500/NYG 1000-1800 not Freecooling
	SFC	Free cooling inlet probe	NYG 0500/NYG 1000-1800 Freecooling
B2	SAE	External air sensor	
B3	SL1	Circuit 1 Liquid Probe	
B4	SL2	Circuit 2 Liquid Probe	

5.7 DIGITAL INPUTS (PCOE EXPANSION)

Digital inputs	Code	Description	Note
ID1	--	--	
ID2	--	--	
ID3	--	--	
ID4	--	--	

5.8 DIGITAL OUTPUTS (PCOE EXPANSION)

Digital outputs	Code	Description	Note
NO1			
NO2	RB1	Circuit 1 base heater	
NO3	RB2	Circuit 2 base heater	
NO4			

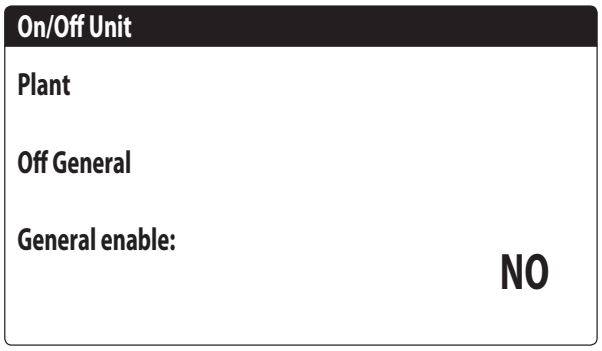
5.9 ANALOGUE OUTPUTS (PCOE EXPANSION)

Analogue outputs	Code	Description	Note
Y1			

6 ON/OFF MENU

6.1 GENERAL ON/OFF

This window makes it possible to view the general state of the system as well as to turn the unit on or off:



Display of the general system state:

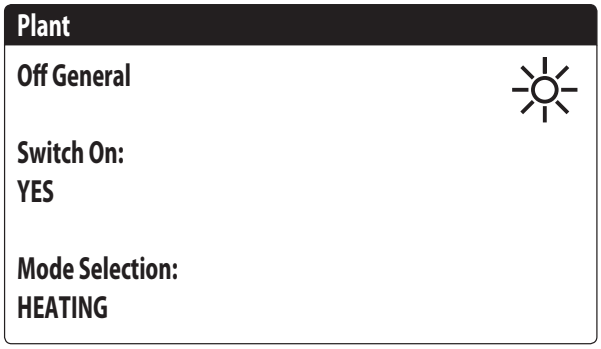
- **Enabled**: the system regulates via the main probe based on the system setpoint;
- **Off due to alarm**: system off due to serious alarm;
- **General off**: system turned off by general enabling (see the paragraph described below "General enabling");
- **Off by BMS**: system turned off by the supervision system;
- **Off by clock**: system turned off by time bands;
- **Off by dig. input**: system turned off by digital input (ID17);
- **Off by display**: system turned off by terminal, control system screen;
- **Out of operating limits**: system out of machine operating limits;

It is possible to change the unit state in the last row. If NO is selected, the entire system will be put in stand-by mode, if YES is selected the machine is turned on.

7 SYSTEM MENU

7.1 SELECTING THE SYSTEM OPERATING MODE

This mask is used to display the current unit state, to turn the unit on or off and to select the operating mode:



Enable: allows to select the mode with which to turn the unit on or off; the available options are:

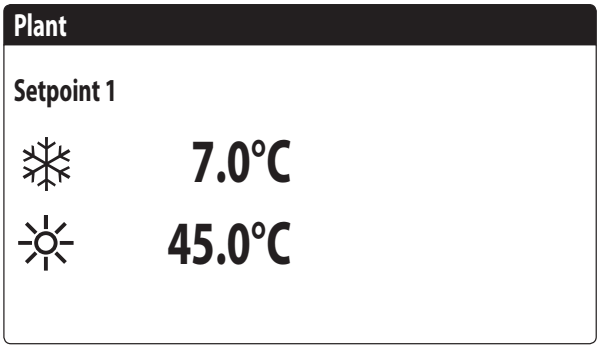
- **OFF**: the system does not produce hot/chilled water;
- **YES**: the system regulates via the main probe based on the system setpoint;
- **YES WITH SET2**: the system regulates via the main probe based on setpoint 2;
- **BY CLOCK**: the system regulates only when time bands are active;

Mode selection: allows to select the operating mode used to operate the unit; the available options are:

- **COOLING**: the system is in cooling mode;
- **HEATING**: the system is in heating mode;
- **FROM OUTSIDE TEMP.**: summer or winter mode is selected based on the outside temperature;
- **DA INGR.DIG.**: if the digital contact closes, cooling mode is selected;
- **BY SUPERVIS.**: the BMS system controls remotely;
- **BY CALENDAR**: hot mode is selected by the calendar;

7.2 SETTING THE VALUES FOR THE PRIMARY SETS

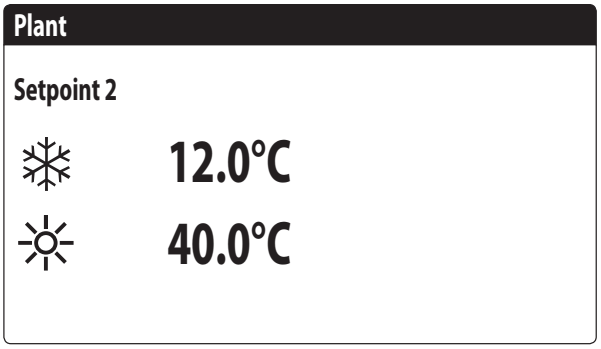
This mask is used to set the values to assign to the primary working setpoints:



The primary working setpoints are:
- ❄ : setpoint 1 for cooling mode;
- ☼ : setpoint 1 for heating mode;

7.3 SETTING THE VALUES FOR THE SECONDARY SETPOINTS

This mask is used to set the values to assign to the secondary working setpoints:



The secondary working setpoints are:
- ❄: setpoint 2 for cooling mode;
- ☼: setpoint 2 for heating mode;

NOTICE

There are two possibilities for using the secondary setpoint of the system:

- Enable the system with the secondary setpoint as an option (ON CON SET 2) in the first screen of the System menu;
- Use the digital input ID10, which activates the secondary setpoint when closed.

7.4 SETTING THE TIME BANDS (A) AND (B)

This mask is used to set the times and action to assign to the time bands (a) and (b):

Plant

Timezone

Day **MONDAY**

			SEL
a	08:00	12:00	ON
b	16:00	22:00	ON

It is possible to assign up to four time bands (a, b, c, d) for each day of the week, during which a specific action can be selected:
— **ON**: system on with setpoint 1 (nominal);
— **SET2**: system on with setpoint 2;
— **OFF**: system off;

NOTICE

The system keeps the system off outside the time bands.

All the screens for time-clock programming are only visible if activated in the main screen of the System menu (Enabling = FROM CLOCK).

7.5 SET THE TIME BANDS (C) AND (D)

This mask is used to set the times and action to assign to the time bands (c) and (d):

Plant

Timezone

Day **MONDAY**

			SEL
c	08:00	12:00	ON
d	16:00	22:00	ON

It is possible to assign up to four time bands (a, b, c, d) for each day of the week, during which a specific action can be selected:
— **ON**: system on with setpoint 1 (nominal);
— **SET2**: system on with setpoint 2;
— **OFF**: system off;

NOTICE

The system keeps the system off outside the time bands.

All the screens for time-clock programming are only visible if activated in the main screen of the System menu (Enabling = FROM CLOCK).

7.6 COPY/PASTE TIME BANDS

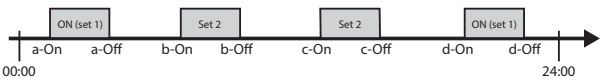
This mask is used to copy and paste the time bands set for a day of the week to another (or to all other days):

Plant

Timezone

Day	**MONDAY**	
Copy to	**---**	**NO**

Each program has 8 days and each day has four time periods at which the switch-on and switch-off time, set point 2 or switch-on/switch-off can be set.
Outside these 4 time periods the program will switch the system off:



NOTICE

All the screens for time-clock programming are only visible if activated in the main screen of the System menu (Enabling = FROM CLOCK).

7.7 SETTING THE SEASON CHANGE

This mask allows you to select at which outside temperature to activate heating or cooling:

Cooling/Heating	
Select Cool/Heat with Outdoor temperature	
Set ON cooling	27.0°C
Set ON heating	13.0°C

NOTICE

This screen for automatic control based on external air temperature is only visible if activated in the main screen of the System menu (Selection mode = BY EXT. TEMP.).

7.8 SETTING THE SEASON CHANGE FROM THE CALENDAR

This mask allows you to select on which day of the year to change the operating mode. If the machine is not in heating mode (winter) then it is in cooling mode (summer):

Cooling/Heating	
Select Cool/Heat with Calendar	
Start Heating	0/---
Finish Heating	0/---

NOTICE

This screen for automatic control based on calender is only visible if activated in the main screen of the System menu (Selection mode = BY CALENDAR)

8 CLOCK MENU

8.1 SETTING SYSTEM DATE AND TIME

This mask is used to set the system date and time:

Clock	
Day:	MONDAY
Time:	16 MARZ 2020
Hour:	16:29

System settings are maintained even when the unit is off.

8.2 SETTING THE AUTOMATIC SUMMER/WINTER TIME CHANGE

This mask is used to set the automatic change between summer and winter time, it is also possible to define the day the change is made:

Clock			
Automatic change			
Hour solar/legal:			YES
Start:			
	LAST	SUNDAY	
in	March	alle	02:00
End:	LAST	SUNDAY	
in	October	alle	03:00

8.3 SETTING THE PUBLIC HOLIDAYS ON THE CALENDAR

This mask is used to set the days (up to 5 intervals) to mark as "holidays" (therefore to activate the relative time programming previously specified for the holiday time band), or set the off mode for the system:

Calendar		
Start	Finish	Action
25/DIC.	26/DIC.	---
15/LUGL	15/LUGL	---
0/---	0/---	---
0/---	0/---	---
0/---	0/---	---

This mask displays:

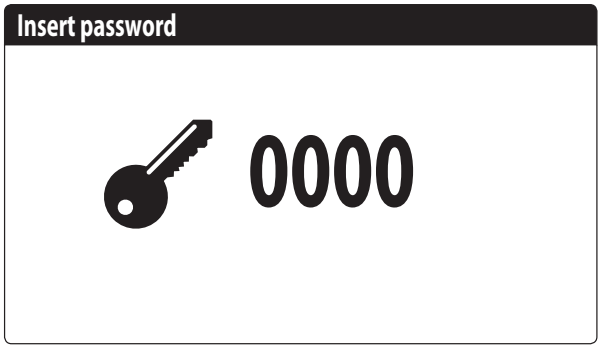
Start date: shows the date of the start of the holiday. The calender can control a maximum of 5 days defined as hliday, during which time specific actions are carried out.
End date: shows the date of the end of the holiday. The calender can control a maximum of 5 days defined as holidays, during which time specific actions are carried out.
Action to associate with holiday: shows which action the unit will take during the holiday, which may be:

- OFF: unit will be off during the days selected;
- FEST.: unit will be controlled as specified in the time-clock programme called HOLIDAY (for further information refer to the function of the time-clock);
- --- : if no action is specified the unit will be controlled by the manual settings.

9 INSTALLER MENU

9.1 PASSWORD TO ACCESS THE INSTALLER MENU (0000)

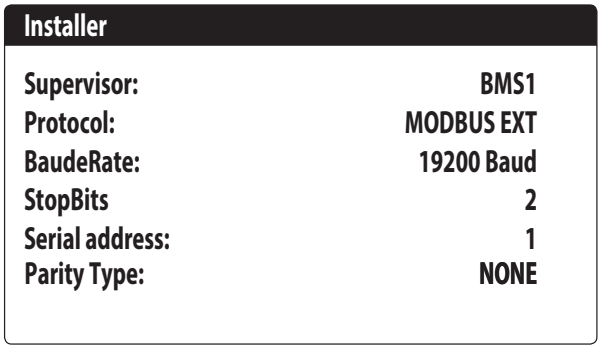
This mask is used to enter the password necessary for accessing the installer menu (the password is 0000):



If an incorrect password is entered, an error message will be displayed.

9.2 SETTING THE BMS 1 PARAMETERS

This mask is used to set the parameters related to the serial communication dedicated to BMS1:



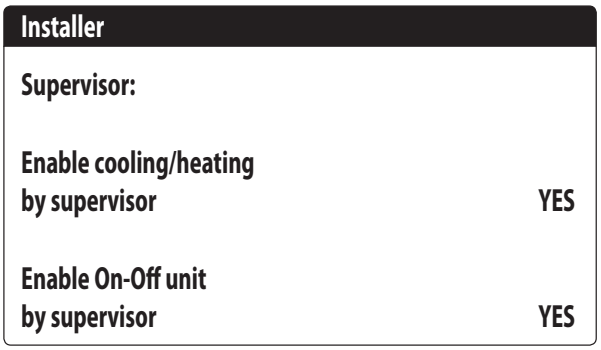
Protocol: this value indicates which protocol is used to communicate with the BMS supervision system; the support protocols are:
— 0: CAREL: protocol for expansions;
— 1: MODBUS: Modbus/RS485 supervisor;
— 2: pCOWeb: protocol for pCOWeb expansion;
— 3: LON: protocol for LON expansion;
— 4: MODBUS EXT: Modbus in extended version with several addresses available.

Speed: this value indicates which speed is set for serial communication; the possible selections are:
— 0: 1200 baud;
— 1: 2400 baud;
— 2: 4800 baud;
— 3: 9600 baud;
— 4: 19200 baud;
— 5: 38400 baud;

Stopbits: this value indicates the number of bits used to indicate the bitstop in serial communication;
Address: this value indicates the address assigned to the BMS supervision system towards which communication will be made;
Parity: indicates the actual value assigned to the number of parity bits for communication between the unit and the BMS1 supervision system; the values that can be set are:
0. None
1. Even
2. Odd

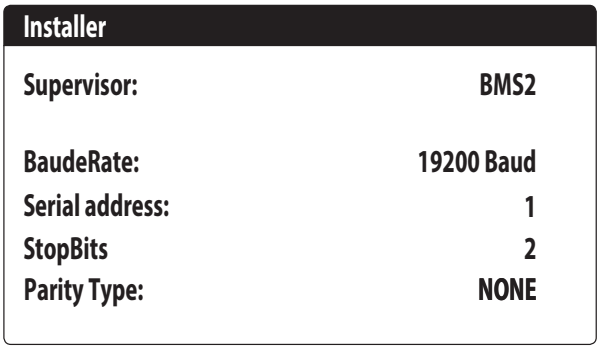
9.3 ENABLE CHANGE OVER AND ON/OFF BY SUPERVISOR

This mask is used to enable or disable the change over (season change) and unit on/off via BMS:



9.4 SETS THE BMS2 PARAMETERS

This mask is used to set the parameters related to the serial communication dedicated to BMS2:



Protocol: this value indicates which protocol is used to communicate with the BMS supervision system; the support protocols are:
— 0: CAREL: protocol for expansions;
— 1: MODBUS: Modbus/RS485 supervisor;
— 2: pCOWeb: protocol for pCOWeb expansion;
— 3: LON: protocol for LON expansion;
— 4: MODBUS EXT: Modbus in extended version with several addresses available.

Speed: this value indicates which speed is set for serial communication; the possible selections are:
— 0: 1200 baud;
— 1: 2400 baud;
— 2: 4800 baud;
— 3: 9600 baud;
— 4: 19200 baud;
— 5: 38400 baud;

Address: this value indicates the address assigned to the BMS supervision system towards which communication will be made;
Stopbits: this value indicates the number of bits used to indicate the bitstop in serial communication;
Parity: indicates the actual value assigned to the number of parity bits for communication between the unit and the BMS2 supervision system; the values that can be set are:
0. None
1. Even
2. Odd

9.5 ENABLES SYSTEM ON/OFF FROM DIGITAL INPUT (ID17)

This mask is used to enable unit on/off via the digital input (ID17):

Input enable

ID17: ON/OFF plant
NO

9.6 SETTING THERMOSTAT REGULATION

This mask is used to select the parameters for managing the operating thermostat:

Installer

Regulation temperature sensor with:
OUTPUT

Type reg.: **PROP.+INT.**
Integ. Time(Ki) **600s**

Regulation with temperature probe: this value indicates on which probe the system bases its adjustment when producing water; The possible values are:
— INPUT (U1): the probe used for adjusting the production of water is the one at the input of the plate heat exchanger;
— OUTPUT (U2): the probe used for adjusting the production of water is the one at the output of the plate heat exchanger;
— COMMON OUTPUT PROBE(U1): the probe used to regulate water production is the one located at the common outlet if there are two plate exchangers;
— STORAGE TANK (U1): evaporator inlet probe remotely mounted on storage tank. In this way, when the thermostat does not require the compressor to be switched on, the pump is switched off.

NOTICE

If selecting input based adjustment, in order to set a correct work setpoint, keep in mind the addition or the subtraction (based on if hot or cold operation) of the water production differential to or from the work setpoint.

Type of reg.: this value indicates which logic is used for managing the adjustment; The possible values are:
— PROP: applies only proportional control;
— PROP+INT: applies proportional control + integral;

Integ. time (Ki): this value indicates the integral time to add to the proportional control (if the regulation type proportional + integral was selected);

9.7 SETS THE LOGIC FOR THE SETPOINT AND DIFFERENTIAL IN COOLING MODE

This mask allows you to select the logic to be applied to the working setpoint and the value to be assigned to the differential for cooling operation:

Installer

Cooling regulation
COMPENS.TEMP.

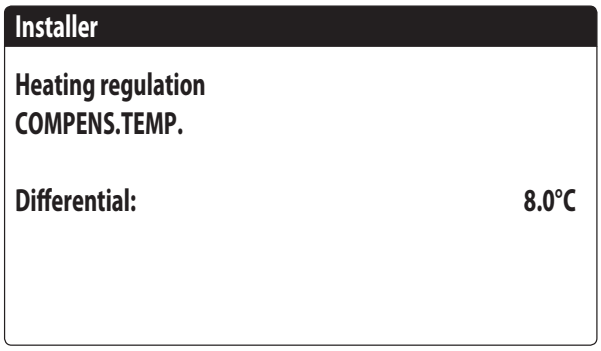
Differential: **8.0°C**

The type of setpoint indicates which logic is used for managing the working setpoint; the possible states are:
— **FIXED SETPOINT**: the system uses the values set by the user in the windows of the set menu as the work setpoint (main and secondary setpoints);

— **CLIMATIC CURVE**: the working setpoint is calculated automatically based on the data entered in the climatic curve;
— **Differential**: this value indicates the differential applied between the water input and output; this value depends on the flow rate value at which the system operates;

9.8 SETS THE LOGIC FOR THE SETPOINT AND DIFFERENTIAL IN HEATING MODE

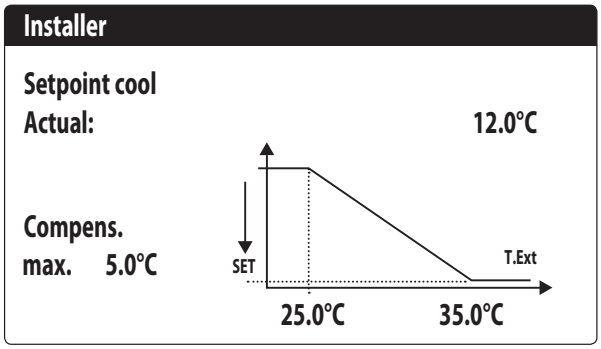
This mask allows you to select the logic to be applied to the working setpoint and the value to be assigned to the differential for heating operation:



The type of setpoint indicates which logic is used for managing the working setpoint; the possible states are:
— **FIXED SETPOINT**: the system uses the values set by the user in the windows of the set menu as the work setpoint (main and secondary setpoints);
— **CLIMATIC CURVE**: the working setpoint is calculated automatically based on the data entered in the climatic curve;
— **Differential**: this value indicates the differential applied between the water input and output; this value depends on the flow rate value at which the system operates;

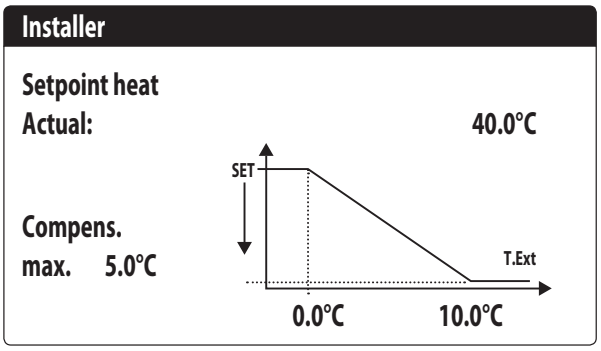
9.9 CLIMATIC CURVE CONFIGURATION IN COOLING MODE

This window allows you to set the temperatures (minimum and maximum) and the maximum differential that will be applied to the cooling working set according to the minimum outside air temperature:



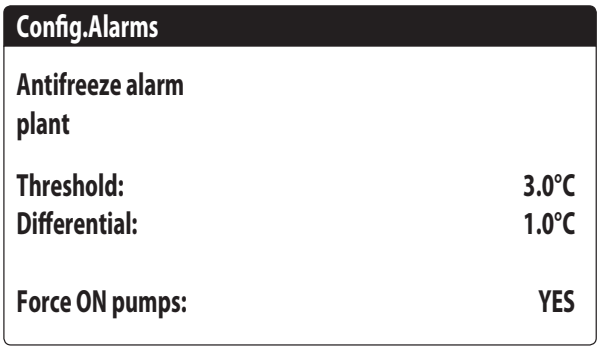
9.10 CLIMATIC CURVE CONFIGURATION IN HEATING MODE

This window allows you to set the temperatures (minimum and maximum) and the maximum differential that will be applied to the heating working set according to the minimum outside air temperature:



9.11 ANTI-FREEZE ALARM CONFIGURATION

This window is used to configure the system anti-freeze alarm:



Threshold: this value indicates the temperature of the inlet or outlet water (based on the type of regulation selected), below which the anti-free alarm activates;

NOTICE

The threshold cannot be changed. In the case of glycol water, the threshold is the result of the calculation obtained from: freezing temperature of the mixture with anti-freeze + 3°C.

Differential: this value indicates the differential to apply to the anti-freeze activation threshold; when the water temperature (inlet or outlet) is higher than the threshold value plus the differential, the anti-freeze alarm is deactivated;
Pump ON power: by changing this value, it is possible to decide whether to automatically activate or deactivate the pumps during the anti-freeze alarm;

9.12 MANAGING THE PUMPS

This mask is used to manage the pumps inside and outside the unit:

Installer	
Number of Pumps:	0
Idle time:	168h
Delay switch-off:	5s

Number of pumps: this parameter indicates if there are pumps outside the unit;
Off time: this value indicates the off time for a pump, after which the pump is activated (if there are several pumps installed on the unit this prevents limescale build-up in the pump in the case of an extended stop);
Delay off: this value indicates the pump turn off delay after deactivating the compressors;

9.13 CONFIGURE ANTI-FREEZE MANAGEMENT VIA THE PUMP

This mask is used to configure the cyclical activation of the pump for the anti-freeze function:

Installer	
Cycles pump start Antifreeze Enable:	N
Cycle time	30min
Pulse time	2min
Min.Extern.Air Temp.	5.0°C

Enable pump cyclical start-up for anti-freeze: this value indicates whether to enable the pump start-up cycle for the anti-freeze function;
Cycle time: this value indicates the interval time between pump activation periods;
Forced duration: this value indicates the time the pumps will be made to operate for the anti-freeze function;
Outside temp threshold: this value indicates the temperature for the outside air below which the anti-freeze cycle activates (if enabled);

9.14 CONFIGURE FANS AT LOW TEMPERATURES

This mask is used to configure the cyclical start-up of the fans to eliminate any accumulation of snow:

Fans	
Fan antifreezer/snow function enable	YES
Ext.Air temp.:	1.0°C
Pulse time Off:	120min
Pulse time On :	30s

Enable: this value indicates whether to enable the anti-freeze function on the fans,
Outside Temp: this value indicates the temperature for the outside air below which the anti-freeze cycle activates on the fans (if enabled);
Off period: this value indicates the interval time between fan activation periods during the anti-freeze function;
On period: this value indicates the time for which the fans will be made to operate for the anti-freeze function

9.15 SETS PUMP START-UP FOR ANTI-FREEZE

This mask is used to set pump start-up if the electric heater turns on:

Installer	
Antifreeze Heater	
Force ON pumps:	YES

Pump ON power: this value indicates whether or not to activate the system pumps during operation of the anti-freeze electric heater;

9.16 MULTI-FUNCTION INPUT CONFIGURATION (U10)

This mask is used to set the function associated with multi-function input U10:

Installer	
Multifunction Input	
Config. Input (U10):	
NOT PRESENT	
Type:	**4-20mA**
Min: 4.0mA	**Max: 20.0mA**

U10: this value indicates which function to assign to the multifunction input U10; the possible states are:
— NOT PRESENT: the multifunction input is disabled;
— POWER LIMITATION: input U10 is used to limit the unit power proportionally to the signal applied to input U10 (the configuration of the managed power range is available on the next window if this option is active);
— VARIABLE SETPOINT: input U10 is used to vary the unit work setpoint proportionally to the signal applied to input U10 (the configuration of the range for setpoint variation is available on the next window if this option is active);

Type: this value indicates the type of signal applied to the multifunction input; the possible states are:
— 0-10V: input signal 0-10V;
— 4-20mA: input signal 4-20mA
— NTC: input signal NTC;

NOTICE

If option (1) or (2) is selected as "Type", it will be possible to set the minimum and maximum signal value;

To use this function, close the contact on input ID18.

9.17 CONFIGURATION OF POWER LIMITATION FOR INPUT (U10)

This mask is used to set the "POWER LIMITATION" function for input U10:

Installer	
Multifunction Input	
Power limit	
Minimun Limit :	**0%**
Maximum Limit :	**100%**

Minimum limit: this value indicates the minimum power level that can be reached based on the input signal;
Maximum limit: this value indicates the maximum power level that can be reached based on the input signal;

9.18 CONFIGURATION OF THE NTC SIGNAL FOR INPUT (U10)

This mask is used to set the "NTC" function (for the type) on input U10:

Installer	
Multifunction Input	
Config. NTC	
Minimum temp.:	**15.0°C**
Maximum temp.:	**25.0°C**

Minimum temp.: this value indicates the minimum temperature (NTC signal) to assign to the minimum value for the function set on the multifunction input (power limitation or variable setpoint);
Maximum temp: this value indicates the maximum temperature (NTC signal) to assign to the maximum value for the function set on the multifunction input (power limitation or variable setpoint);

9.19 CONFIGURATION OF VARIABLE SETPOINT FOR INPUT (U10)

This mask is used to set the "VARIABLE SETPOINT" function for input U10:

Installer		
Multifunction Input		
Variable SetPoint Mode :		
	COOLING	**HEATING**
Min:	**7.0°C**	**45.0°C**
Max:	**11.0°C**	**50.0°C**

On this mask it will be possible to set the minimum and maximum setpoint limits (cooling and heating) based on the U10 input signal;
To configure the multifunction input, therefore, you must select which type of input you want to use, set the minimum and maximum limits that the input can assume, and as a result set the minimum and maximum limits of the functionality you want to use.

9.20 CONFIGURE NIGHT MODE CONTROL

This mask is used to set the night mode function to lower the noise level of the fans:

Fans	
Condensation mode overnight	**NO**
On:	**21:00**
Off:	**8:00**
Cooling VMax:	**6.0V**
FreeCool. VMax:	**6.0V**

Night-time silenced control: this value indicates if the night mode function should be activated; this function enables silenced operation during the time band specified in the following parameters;
Control on: if night-time silenced operation is active, this parameter indicates the time after which this operation will be activated;
Control off: if night-time silenced operation is active, this parameter indicates the time after which this operation will be deactivated;
Cooling VMax: if night-time silenced operation is active, this parameter indicates the maximum Volt applied to the cold condensation control;
FC VMax: Maximum volts in free cooling operation with night mode control;

9.21 COMPRESSOR HOUR COUNTER MONITOR

This window displays data on the operating hours and number of compressor starts on the unit:

Hour meter	
Circuit 1	
Compressor 1:	**0000h**
Compressor 2:	**000h**
Number of starts	
Compressor 1:	**0000**
Compressor 2:	**000**

Circuit 1

Hour meter	
Circuit 2	
Compressor 1:	**0000h**
Compressor 2:	**000h**
Number of starts	
Compressor 1:	**0000**
Compressor 2:	**000**

Circuit 2

9.22 UNIT HOUR METER MONITOR

This window displays data on the operating hours in cooling mode and heating mode, the number of mode changes and the number of defrosts performed on the unit:

Hour meter	
Cool:	**0000h**
Heat:	**0000h**
Counters	
Mode changes:	**0002**
Defrost:	**0001**

9.23 CONFIGURATION OF THE FAN SPEED

This window is used to configure the inverter fan signals:

Fans	
Fans	
Start time:	**1s**
Minimum V:	**1.0**
Max V cooling:	**10.0**
Max V heating:	**10.0**

Peak duration: this value indicates the peak duration at fan start-up;
Min volt: this value indicates the voltage at minimum speed before shutdown;
Max volt cold: this value indicates the voltage at maximum speed during cooling mode;
Max volt hot: this value indicates the voltage at maximum speed during heating mode;

9.24 CONFIGURE MASTER SLAVE

This window is used to configure the parameters for unit Master/Slave management:

Installer	
Master/Slave	
Unit:	**ALONE**
Step:	**1.0%**
Slave Pump off with Compressor off:	**NO**

(Unit: this value indicates the type of setting for the unit; this type can be:
— SINGLE: unit without Master/Slave connection;
— MASTER: identifies the master unit;
— SLAVE: identifies the slave unit;

Power step: the required power calculated by the thermostat is divided between the master and slave units based on this parameter; (E.G.: 1% = the units work in parallel; 100%= the units work in sequential mode (first all the power of one is used and then all the power of the other is used);
Slave pump Off with CP Off: this value indicates management of the pump on the slave unit; this management can be:
— YES: the slave pump turns off if there is no request on the slave;
— NO: the slave pump turns on and shuts down together with the master;

9.25 CONFIGURATION OF THE FAN SPEED IN FREE COOLING

NOTICE

This mask is available on free cooling units.

This window is used to configure the inverter fan signals during the free cooling operation:

Installer	
Freecooling	
Delta T:	**15.0°C**
Max volt:	**10.0V**

Delta T: value generated at the maximum fan speed at a design external air temperature;
Max volts Freecooling: maximum fan voltage during the free cooling operation.Used in silenced units to reduce noise;

9.26 FREE COOLING CONFIGURATION (YIELD CONTROL)

NOTICE

This mask is available on free cooling units.

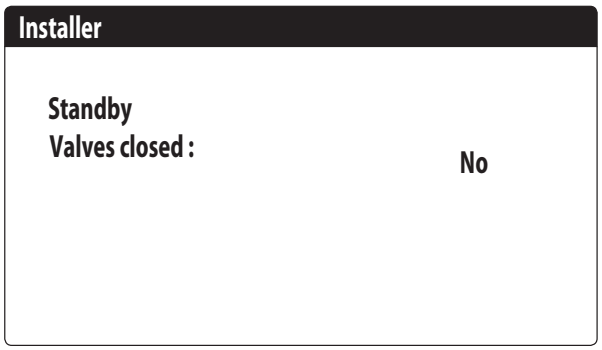
This window allows you to set the parameters related to the management of the freecooling yield control; this control constantly verifies that the freecooling coil is generating a delta T used to control the operational safety of the 3-way valve. The control is only active with ventilation at the maximum air flow rate:

Installer	
Frecooling Gain control.	
Delta T:	**1.5°C**
Control time:	**180s**

Delta T: delta T generated at the maximum fan speed;
Control time: yield control bypass time given by the input in free cooling;

9.27 VALVE MANAGEMENT

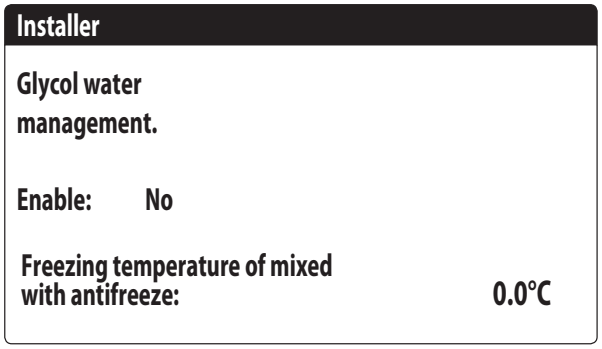
This mask allows you to manage the evaporator valves (only if the unit is configured as modular):



Valves closed:
— **No**: there is water flowing through the evaporator when the machine is in standby;
— **Yes**: there is no water flowing through the evaporator when the machine is in standby.

9.28 GLYCOL WATER MANAGEMENT

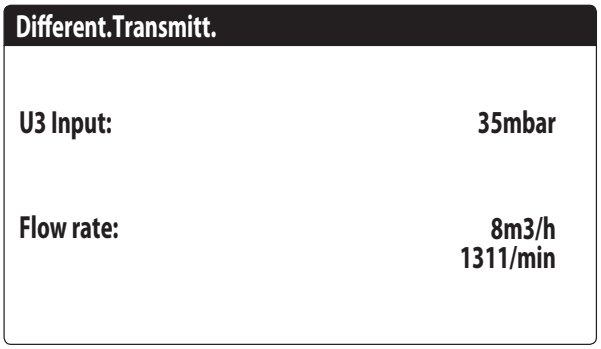
This window is used to enable or disable the use of glycol water:



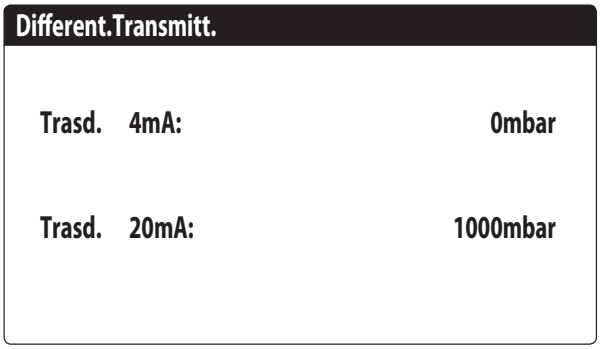
Enable: this value indicates if the unit uses glycol water; the possible states are:
— No: glycol water management is disabled;
— Yes: glycol water management is disabled;

Freezing temperature of mixed with antifreeze: This parameter is used to calculate the minimum cold setpoint limit, the antifreeze alarm and the antifreeze resistance threshold. With hydronic unit 09, double ring with intermediate exchanger, glycol means the intermediate ring.

9.29 DIFFERENTIAL TRANSMITTER



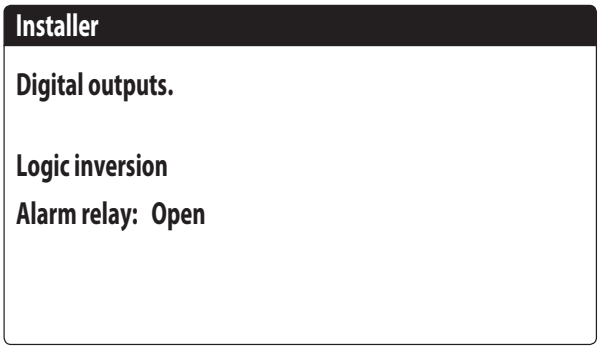
U3 reading: reading that comes from the U3 input of the pCO card
Flow rate: calculation of the flow rate (cubic meters per hour, litres per minute)



Transd. 4mA: minimum limit 4mA
Transd. 20mA: maximum limit 20mA

9.30 ALARM RELAY LOGIC

NO8 digital output alarm relay logic.



— Open (the relay is closed if there are no alarms)
— Closed (the relay is open if there are no alarms)

9.31 UNIT INFORMATION MONITOR

This window contains information concerning the unit code, the software version and the machine test date:

Information

Aermec S.p.A.
Code:
NYG0500XH°°M600°
Ver.: 1.0.000 18/09/24

Testing date: 17:01 25/09/24

9.32 EVD VALVE INFORMATION MONITOR

Information

EVD n°1

Firmw. version.: ---

This mask displays information concerning the EVD valve connected in Modbus (if present).

9.33 SETS THE INTERFACE LANGUAGE

This window is used to select the display language. Press "ENTER" to cycle the available languages:

Installer

Language: ENGLISH

Push ENTER for change

9.34 CONFIGURATION OF THE UNITS OF MEASURE

This window is used to set the units of measure to use in the system:

Options

Type of measurem.unit
STANDARD [°C/bar]

Supervisor BMS
STANDARD [°C/bar]

Type of units of measure: indicates the units of measure shown on the display; the possible states are:
— STANDARD [°C/bar]
— ANGLO-SAXON [°F/psi]

BMS supervisor: indicates the units of measure read by the supervisor; the possible states are:
— STANDARD [°C/bar]
— ANGLO-SAXON [°F/psi]

9.35 CONFIGURES THE INSTALLER MENU PASSWORD

This window is used to change the "Installer" menu access parameter:

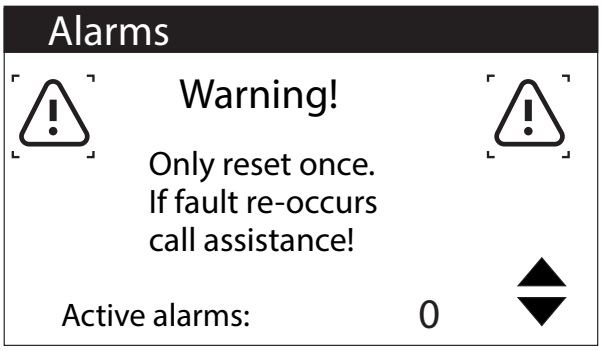
Password

New password
Installer: 0000

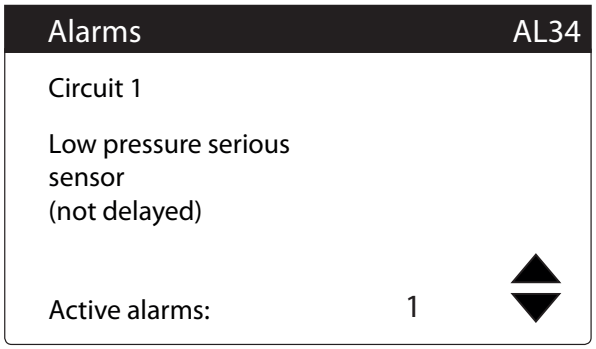
10 ALARM

10.1 CONTROL OF ALARMS

Pressing the button displays the following screen:



Using the and buttons it is possible to scroll through the list of active alarms:



This mask displays the alarm management logic.
The last line shows how many alarms are active at that moment.
The alarm status remain in memory even after power failure.

NOTICE

If the default parameters are loaded (via the manufacturer menu), the alarms and attempts stored up to that point are reset.

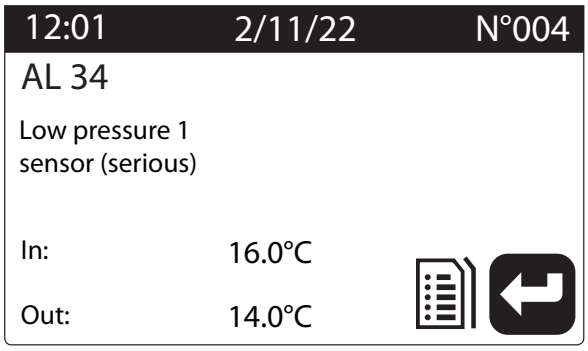
Alarms are RESET, where conditions permit, by pressing the Alarm key from the menu of the active alarms.

There are some alarms, considered possible gas leakage, which turn on the fans at maximum speed. These alarms are the low and high pressure switches of the two circuits.

10.2 ALARM HISTORY

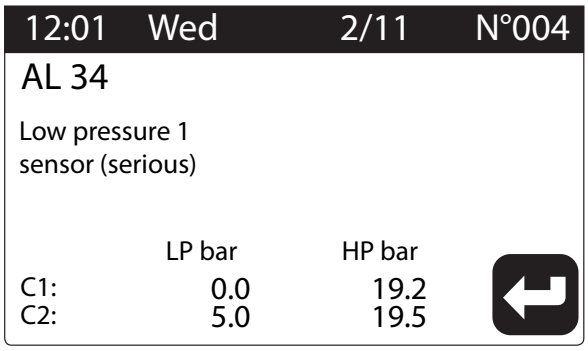
To view the alarm history, press the button , scroll with the button to the last screen and press Enter.

Each alarm is uniquely identified by a 4-digit alarm code, this code can be found on the follow pages.
At any time it is possible to view the history of the last 100 alarms that have occurred in the system.



This mask displays:

— Date and time of intervention (alarm start)
— Alarm number and brief description
— Input/output temperature



This mask displays:

— Date and time of intervention (alarm start)
— Alarm number and brief description
— High pressure in both circuits
— Low pressure in both circuits

When the last position in the alarm history is reached, the software will overwrite the first one with the last one that occurred.

NOTICE

It is not possible for a end user to reset the alarm history.

11 LIST OF ALARMS

There are three types of alarm resets:

— **Auto**: automatic, when the event causing the alarm stops, also the alarm disappears.

— **Manual**: manual, to restart normal operation manual acknowledgement is necessary.

— **Semi-auto**: semi-automatic, the alarm is automatic but if it is present more than "n" times, it then becomes manual. The interventions are decreased by one unit every hour. Furthermore, there is a "timeout", after which the alarm becomes manual, even if the maximum number of interventions is reached.

Example: taking the phase monitor alarm, the maximum number of times the alarm can intervene is 3. This is the maximum number of possible alarms in one hour, but considering that every hour the count is decremented by one unit, it follows that: the phase monitor alarm can intervene, without assuming the level of manual reset, a maximum of 3 times in one hour or 4 times in 2 hours or 5 times in 3 hours and so on. The semi-auto reset can switch to manual reset without reaching the maximum number of interventions, if it remains for a time equal to the Timeout time.

Code	Description	Reset	N.int.	Timeout(s)
AL01	Clock battery flat alarm	Auto		
AL03	Phase monitor alarm	Semi-auto	3	300
AL04	Display alarm reset			
AL05	Circuit 1 high pressure faulty transducer alarm	Manual	1	
AL06	Circuit 2 high pressure faulty transducer alarm	Manual	1	
AL07	Circuit 1 low pressure faulty transducer alarm	Manual	1	
AL08	Circuit 2 low pressure faulty transducer alarm	Manual	1	
AL09	Evaporator 1 input faulty probe alarm	Manual	1	
AL10	Evaporator 1 output faulty probe alarm	Manual	1	
AL11	Evaporator common outlet faulty probe alarm	Manual	1	
AL16	Outside temperature faulty probe alarm	Manual	1	
AL17	Faulty liquid probe alarm circuit 1	Manual	1	
AL18	Circuit 2 liquid probe failure alarm	Manual	1	
AL19	Circuit 1 compressor 1 maintenance request	Auto		
AL22	Evap pumps 1 hours maintenance alarm	Auto		
AL23	Circ. 1 compressor 1 technical alarm	Manual	1	
AL24	Evaporator 1 pump thermal alarm	Manual	1	
AL25	Evaporator 2 pump thermal alarm	Manual	1	
AL28	Fan 1 circuit breaker alarm	Manual	1	
AL29	Circuit 1 fan thermal series	Manual	1	
AL30	Circ. 1 low pressure switch alarm	Manual	1	
AL31	Circ. 1 low pressure alarm	Manual	1	
AL32	Circ. 1 high pressure switch alarm	Manual	1	
AL33	Circ. 1 high pressure alarm	Manual	1	
AL34	Circ. 1 serious low pressure alarm	Manual	1	
AL35	Circ. 2 serious low pressure alarm	Manual	1	
AL38	Evaporator flow switch alarm	Manual	1	
AL40	Evaporator anti-freeze alarm	Manual	1	
AL41	Common evaporator antifreeze alarm	Manual	1	
AL45	High outside air temperature alarm	Auto		
AL46	Pressing line CP1A gas temp. faulty probe alarm	Manual	1	
AL47	Pressing line CP1B gas temp. faulty probe alarm	Manual	1	
AL48	Pressing line CP2A gas temp. faulty probe alarm	Manual	1	
AL49	Pressing line CP2B gas temp. faulty probe alarm	Manual	1	
AL51	Circuit 1 compressor 2 maintenance request	Auto		
AL53	Circuit 2 compressor 1 maintenance request	Auto		
AL54	Circuit 2 compressor 2 maintenance request	Auto		
AL58	Maintenance request evap. pump 2	Auto		
AL59	Circ. 1 compressor 2 technical alarm	Manual	1	
AL61	Circ. 2 compressor 1 technical alarm	Manual	1	
AL62	Circ. 2 compressor 2 technical alarm	Manual	1	
AL64	Circ.2 low pressure gauge alarm	Manual	1	
AL65	Circ.2 low pressure alarm	Manual	1	
AL66	Circ.2 high pressure gauge alarm	Manual	1	
AL67	Circ.2 high pressure alarm	Manual	1	

Code	Description	Reset	N.int.	Timeout(s)
AL72	Discharge circuit alarm 1	Manual	1	
AL73	Discharge circuit alarm 2	Manual	1	
AL74	Circuit 1 low overheating alarm	Semi-auto	3	60
AL75	Circuit 2 low overheating alarm	Semi-auto	3	60
AL76	Air-water envelope alarm	Semi-auto	5	300
AL77	Circuit 1 envelope alarm	Semi-auto	5	300
AL78	Envelope alarm circuit 2	Semi-auto	5	300
AL81	Pressing line CP1A gas high temp. alarm	Manual	1	
AL82	Pressing line CP1B gas high temp. alarm	Manual	1	
AL83	Pressing line CP2A gas high temp. alarm	Manual	1	
AL84	Pressing line CP2B gas high temp. alarm	Manual	1	
AL85	System high temperature	Manual	1	
AL87	Master offline	Auto		
AL88	Slave offline	Auto		
AL89	Incorrect master/slave SW version	Auto		
AL90	Free cooling ouput alarm	Manual	1	
AL91	Slave alarm summary	Auto		
AL97	Faulty freecooling inlet probe alarm	Manual	1	
AL99	EVD alarms summary Circuit 1	Manual	1	
AL100	EVD alarms summary Circuit 2	Manual	1	
AL101	Expansion (pCOe) Off-line	Semi-auto	3	60
AL102	Water inlet temperature outside operating limits	Manual	1	
AL103	DeltaP alarm Circuit 1	Manual	1	
AL104	DeltaP alarm Circuit 2	Manual	1	
AL105	EVD error valve motor circuit 1	Manual	1	
AL106	EVD low evap. temp. (LOP) circuit 1	Manual	1	
AL107	EVD high temp. evap. (MOP) circuit 1	Manual	1	
AL108	EVD low overheating (LowSH) circuit 1	Manual	1	
AL109	EVD low suction temp. circuit 1	Manual	1	
AL110	EVD high temp. condensation circuit 1	Manual	1	
AL111	EVD valve motor error circuit 2	Manual	1	
AL112	EVD low evap. temp. (LOP) circuit 2	Manual	1	
AL113	EVD high temp. evap. (MOP) circuit 2	Manual	1	
AL114	EVD low overheating (LowSH) circuit 2	Manual	1	
AL115	EVD low suction temp. circuit 2	Manual	1	
AL116	AL116 – EVD S1 probe error	Manual	1	
AL117	AL117 – EVD S2 probe error	Manual	1	
AL118	AL118 – EVD S3 probe error	Manual	1	
AL119	AL119 – EVD S4 probe error	Manual	1	
AL120	EVD EEPROM alarm	Manual	1	
AL121	EVD Driver offline	Manual	1	
AL122	EVD Battery discharged	Manual	1	
AL123	EVD Parameter transmission error	Manual	1	
AL124	EVD Firmware not compatible	Manual	1	
AL125	Low water content force off	Manual	1	

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