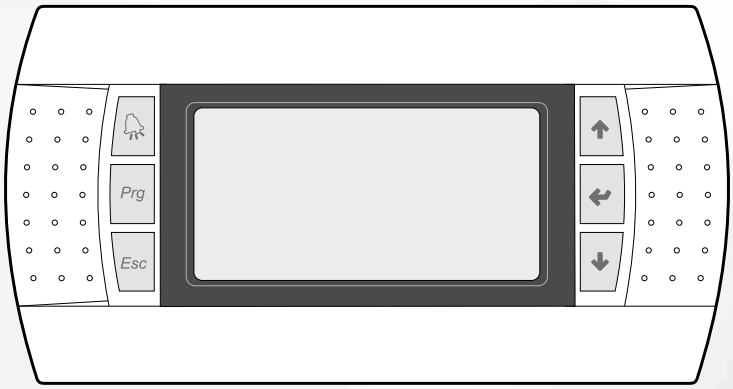
EN

24/06 - 4140002_01
Translation of Original instructions

NYP

User manual



CARD PCO5 - PANEL PGD1

AERMEC

www.aermec.com

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.

WARNING: personnel who possess the necessary skills according to state, national and local regulations in force must choose and size the machine

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

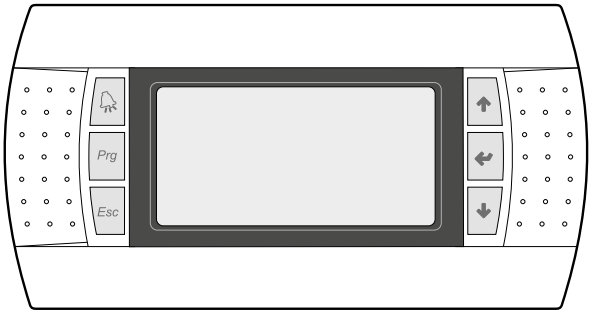
This mark indicates that the disposal of this product must strictly follow the national and local laws in force.

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**

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.

TABLE OF CONTENTS

1 USER INTERFACE (PGD1)



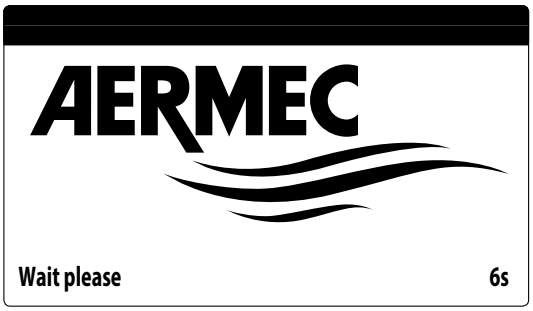
The command panel of the unit allows the rapid setting of the working parameters of the machine, and their visualisation. The card stores all the default settings and any modifications.
The installation of the remote panel PGD1 makes it possible to copy from remote all the functions and settings available 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.

1.1 START-UP PROCEDURE

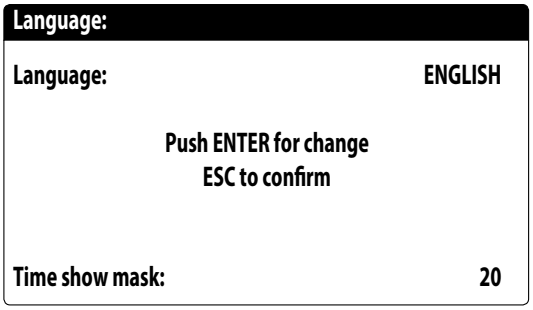
After powering the unit, the control card will perform preliminary operations before it is ready to be used; these initial procedures last about 60 seconds before they are complete; two windows are displayed during the initial loading procedures (a start window and one for selecting the system language); these windows are specified below in the table.

NOTICE

The system language can be set through the window shown at startup, or through the After-sales Technical Service.



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.

NOTICE

To change the unit of measurement, please contact the After-sales Technical Service.

The screens in the manual are set to standard units of measurement [°C and bar] and are to be used as examples only. If you set the Imperial system, the same screens will display the respective units of measurement °F and psi.

1.2 FUNCTION OF THE PGD1 CONTROL PANEL KEYS

: Displays the list of active and historical alarms (red LED on = active alarm);

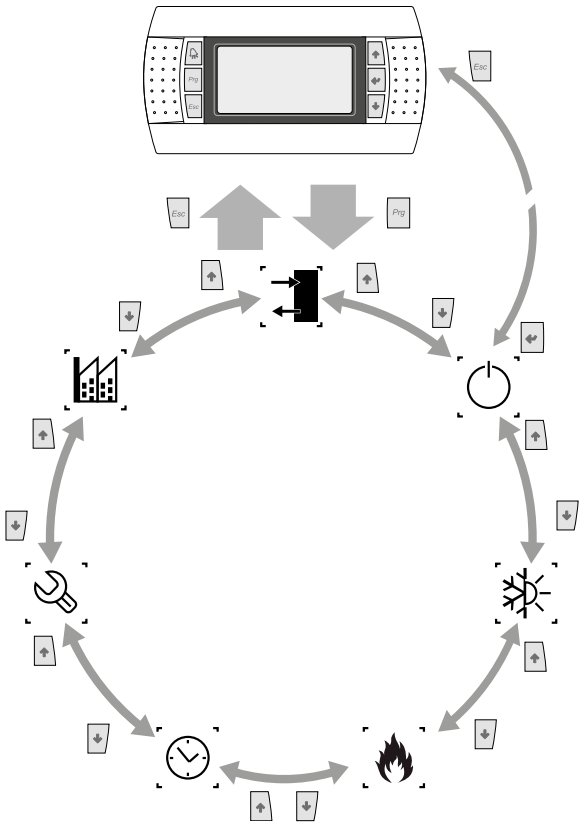
: Pressing this key activates navigation between the menus;

: 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 previous 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 next menu/parameter;
— Pressing this key when changing a parameter decreases the value of the selected parameter;



1.3 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.

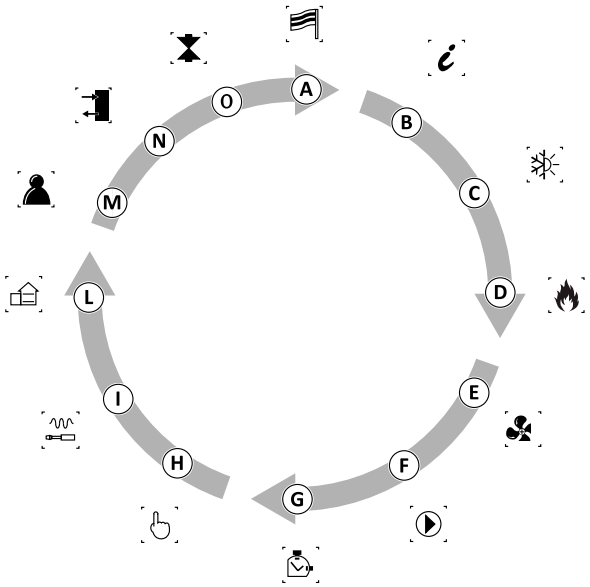
Menu icons:

Icon	Menu	Menu function
	IN/OUT	Contains the information (temperature, pressure, etc.) of the system components.
	ON/OFF	Switches the unit on and off and sets its functioning mode (summer/winter) and eventual time periods.
	COLD	Management of the chiller parameters, standard/energy saving work set-point when functioning in cooling mode.
	HOT	Management of the chiller parameters, standard/energy saving work set-point when functioning in heating mode.
	Clock	Manages all parameters linked to the system time (hour, date, etc....).
	Help menu (PROTECTED menu)	Protects the after-sales assistance menu with password request.
	Manufacturer menu (PROTECTED menu)	Protects the manufacturer menu with password request.

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;

Assistance Menu (protected by password)



	Icon	Menu	Menu function
A		LANGUAGE	Selecting the user interface language
B		INFO	Information regarding the software
C		COLD	Assistance parameters in cooling mode
D		HOT	Assistance parameters in heating mode
E		VENTILAT.	Ventilation assistance parameters
F		PUMPS	Pumps assistance parameters
G		HOUR METER	Devices working hours timer
H		MANUAL	Manual controls forcing
I		OPTIONS	Enabling of accessories modules
L		C.SYSTEM	Definition of system features
M		MISCELLANEO	Setting assistance parameters
N		IN/OUT	Input and output states
O		EVD	EVD Driver configuration

NOTICE

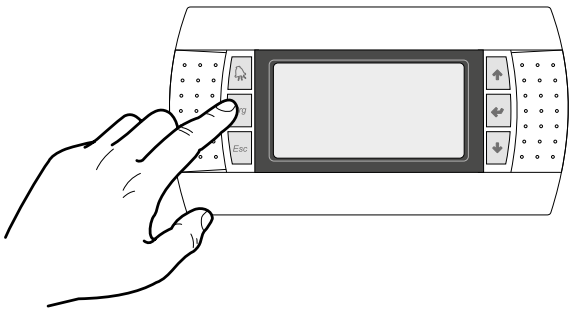
Parameters can be modified by authorised personnel alone

1.4 USER OPERATING PROCEDURES

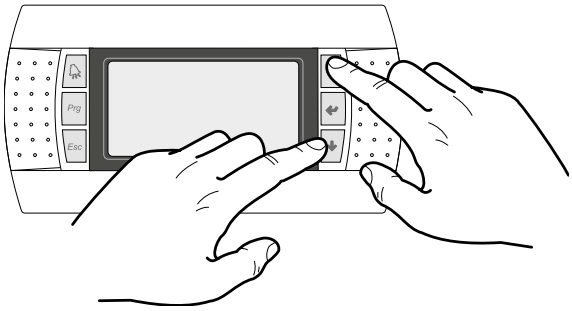
To check or modify the operating parameters of the unit it is necessary to use the interface of the control panel on the unit.
The basic operations that the user must be capable of, for the correct use of the unit, are:
— Moving between menus;
— Selecting and modifying a menu.

1.4.1 Moving between menus

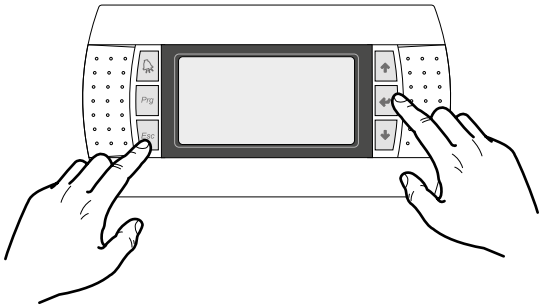
To move between the menus, the order in which they are displayed is shown in the previous page, enter the menu selection mode by pressing the key Prg;



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:

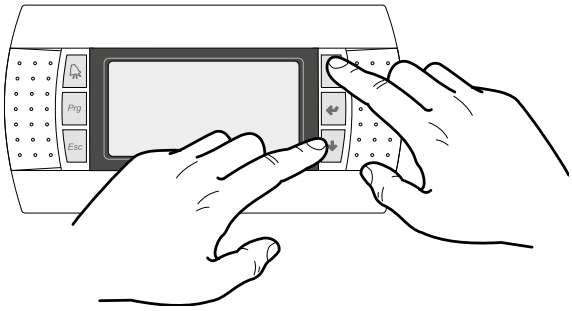


When the desired menu is seen press the key ↵ to enter the menu. Press the key Esc to return to the menu selection mode:



1.4.2 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:



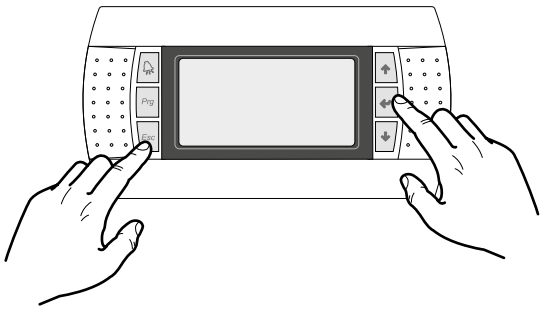
When the desired parameter is seen press the key ↵ to enter the parameter. To exit the parameter and return to the parameter selection mode press the key Esc.

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.

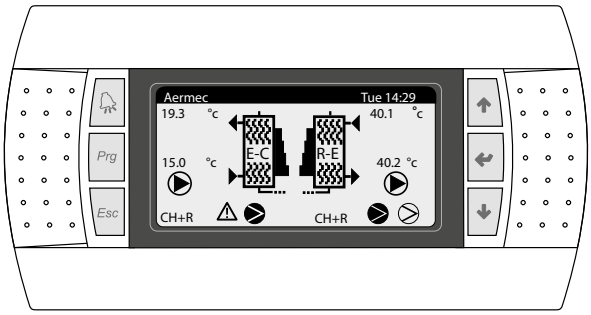


NOTICE

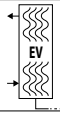
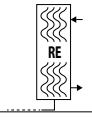
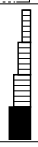
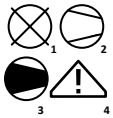
On the basis of the type of parameter selected the number of modifiable fields can change.

2 MAIN DISPLAY

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



Icons:

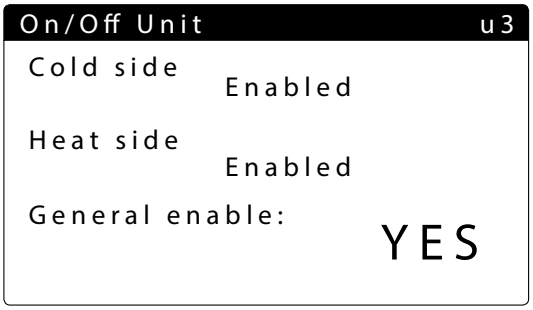
Icon	Meaning
	Indicates water inlet and outlet temperature of the cold side heat exchanger
	Indicates water inlet and outlet temperature of the hot side heat exchanger
	Indicates the percentage requested by the machine intended for the system or for recovery
	Indicates which pump is running. The icon on the left refers to the system side pump while the one on the right refers to recovery. The number at the bottom indicates which pump is turned on.
	Indicates that the anti-freeze resistance is active
	Indicates that the flow switch is open
	Indicates that low output temperature anti-freeze prevention is active (turns off the compressors).
	Indicates that the outlet high temperature prevention is active. Switches the compressors/mode change off.
	Low load: indicates low water content or low heat load.
	Indicates compressor status: disabled(1), off (2), on (3), in alarm (4).

Description of the status in which the circuit can be found:

State	Meaning
C1 C2	The system is active and running
CH	Chiller operation
CH + R	Chiller + total recovery functioning
REC	Total recovery
DEFR	Defrost active
WAIT	The circuit is in standby because configuration is changing

2.1 DESCRIPTION OF THE STATUS IN WHICH THE CIRCUIT CAN BE FOUND

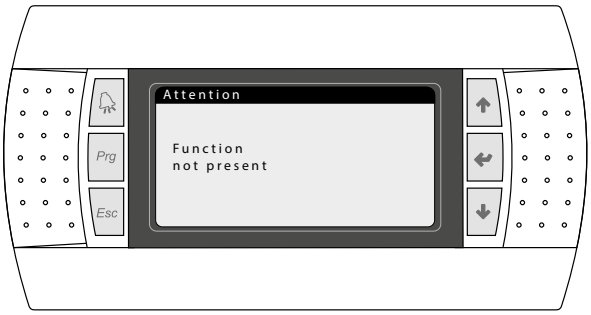
From the main screen, by pressing  , you can see the following screen:



State	Meaning
Enabled	The system is active and running
Off by alarm	There is a serious alarm which stops the system (check the list of alarms, below the alarm key)
General Off	The system is switched off by the terminal; check the On/Off screen
Off by supervisor (BMS)	The supervision system has prevented unit start-up (cold side and/or hot side)
Off by clock	The time periods set switch the whole system off (cold side and/or hot side)
Off by digital input	The digital input puts the system in Off (cold side and/or hot side)
Off by display	The system is switched off by the terminal. Check the cold side and/or hot side screen.

Function not present

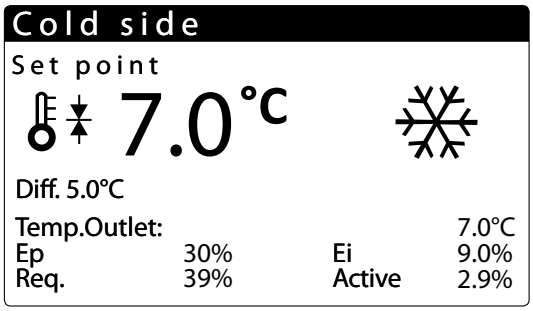
If a function is not present the folowing screen will be shown:



To return to the main screen press ESC.

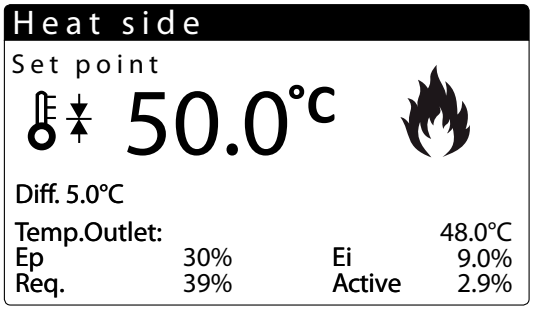
2.2 INFORMATION ON COOLING SIDE HEAT EXCHANGER

From the main screen, by pressing and , you can view the screens for the heat exchanger on the cold side and on the hot side.



From this window it is possible to view the information relative to the cold side exchanger:
- Current working setpoint;
- Current working differential;
- Evaporator outlet temperature;
- If a PI regulation is active, also the proportional factor "Ep" and the integral factor "Ei" will be displayed;
- Percentage of power required and percentage of actual active power on the cold side;

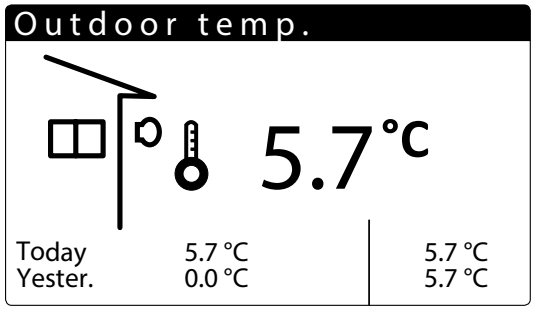
2.3 INFORMATION ON HEATING SIDE HEAT EXCHANGER



From this window it is possible to view the information relative to the hot side exchanger:
- Current working setpoint;
- Current working differential;
- Heat exchanger outlet temperature
- If a PI regulation is active, also the proportional factor "Ep" and the integral factor "Ei" will be displayed;
- Percentage of power required and percentage of actual active power on the hot side;

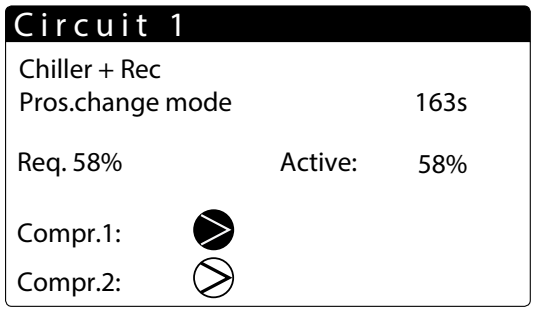
3 INPUT/OUTPUT MENU

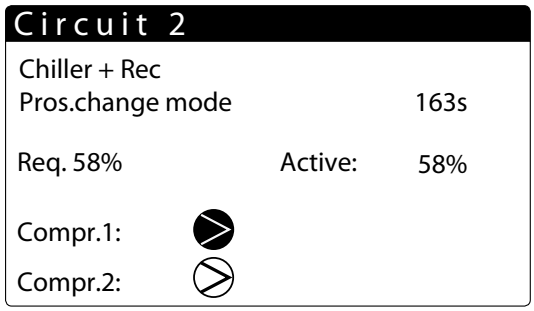
3.1 INFORMATION REGARDING EXTERNAL TEMPERATURE



— **External temperature**: this window displays the data relative to the external temperature.
— **Today**: indicates the MIN and MAX temperature recorded during the day.
— **Yesterday**: indicates the MIN and MAX temperature recorded the previous day.
— **External temperature**: Indicates the external temperature currently detected by the outdoor air probe.

3.2 INFORMATION ON CIRCUIT STATUS AND CAPACITY



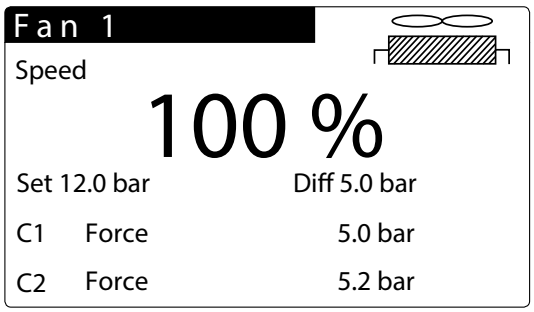


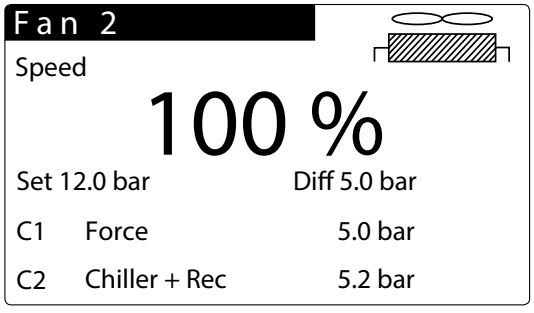
— Displays the operating status of circuits 1 and 2:
- Off
- Chiller only
- Chiller+Rec
- Heat recovery only
- Await part load
- Defrost start
- Await inversion VIC
- Defrost
- Await exit defrost
- Turn on fan exit defrost
- Exit defrost
- No defrost System
- No defrost Recovery

— Shows how many seconds until the next change of operation
— Shows the circuit demand
— Shows the compressor status:
- ⊘: indicates that the compressor is off;
- ◕: indicates that the compressor is on;
- Min. On: Compressor on and display of the minimum switch-on time;
- Min. Off: Compressor on and display of the minimum switch-off time;
- Off alarm: Compressor off due to alarm, see Alarm key.

— Shows the circuit active capacity

3.3 INFORMATION ON STATUS OF FANS



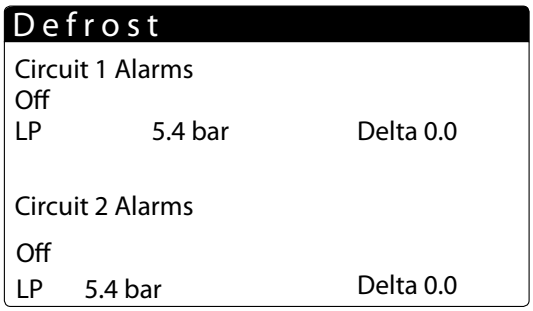


This window displays the data relative to fan operation:

— **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;
— State in which the circuit can be found (see chapter 2 Main display p. 10). The states, for each circuit, can be:

- **C1 Off**: Circuit off
- **C1 Press.Cond**: Fans control to high pressure (condensing)
- **C1 Chiller +Rec**: Fans off because unit is operating in water/water mode
- **C1 Forced to Max**: Fans are forced to maximum
- **C1 Press.Evap**: Fans control to low pressure

3.4 INFORMATION ON DEFROSTING STATUS



— Shows the defrost status of circuits 1 and 2
— Shows if the defrost mode is operating
— Shows the circuit operating status:
  - Off
  - Chiller only
  - Chiller+Rec
  - Heat recovery only
  - Await part load
  - Defrost start
  - Await inversion VIC
  - Defrost
  - Await exit defrost
  - Turn on fan exit defrost
  - Exit defrost
  - No defrost System
  - No defrost Recovery

— Indicates the stored low pressure value

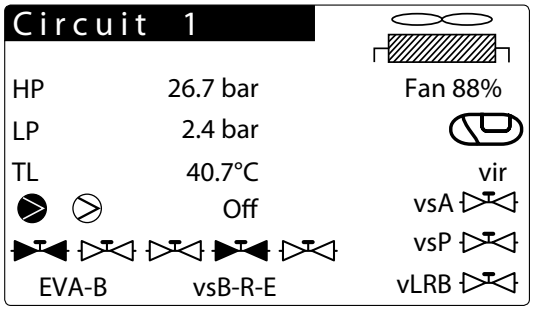
The Delta value shows the drop in pressure with time. When this level is reached the defrost operating cycle is started

Description of defrosting states:

- **No SBR**: No defrost
- **Off**: Circuit off from display panel, or time clock, or digital input
- **Defr. Activ**: Defrost active (the unit condenses in the ventilated coil)
- **On Smart**: Defrost started due to drop
- **On Min LP**: Defrost started due to low pressure reached
- **On Reboot**: Defrost started after power loss
- **On Force**: Defrost started forced from the display panel or forced by another defrost cycle
- **On TGP**: Defrost started due to high discharge temperature
- **Defrost stopped due to high liquid temperature**
- **End Time**: Defrost stopped after maximum time reached
- **End Force**: Defrost stopped forced from display panel
- **Startup Cmp**: Defrosting inhibited due to time after compressor start-up
- **High evap p.**: Defrosting inhibited owing to high evaporation pressure
- **High T.Ext**: Defrost inhibited due to high external temperature
- **T.Bw Sbr**: Defrosting inhibited due to waiting time between two defrosts
- **Alarms**: Circuit in alarm
- **On by Alarm**: Defrost started due to return to alarm

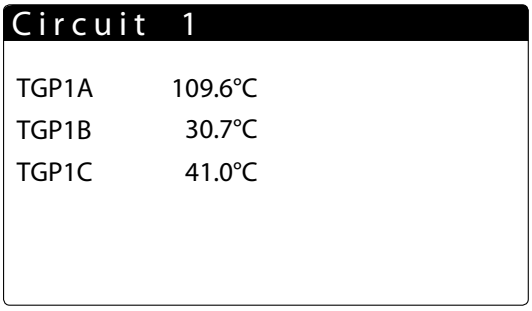
3.5 INDICATES THE STATUS OF THE CIRCUIT 1 AND CIRCUIT 2 VALVES

This window displays the data relative to circuit pressures and valve status:

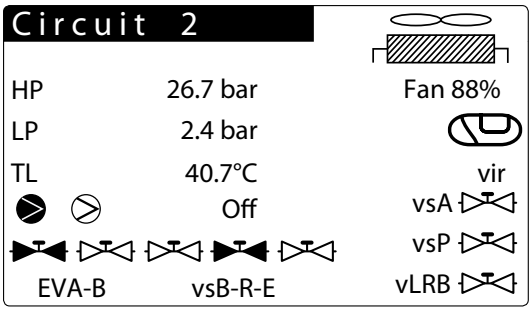


— Indicates the high and low pressure values of the circuit.
— Indicates the refrigerant liquid (LT) temperature
— Indicates speed percentage at which the fan works.
— Displays the status of the compressors (disabled - on - off - alarm)
— Indicates the valve status:

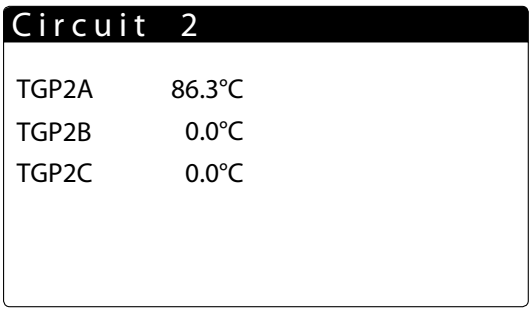
- **EVA-B**: Electronic valve 1 and 2
- **VIR**: Recovery Reversing Valve
- **vsB**: battery solenoid valve
- **vsR**: recovery solenoid valve
- **vsE**: evaporator solenoid valve
- **vsA**: storage tank emptying valve
- **vsP**: oil spillage valve
- **vLRB**: battery return liquid valve



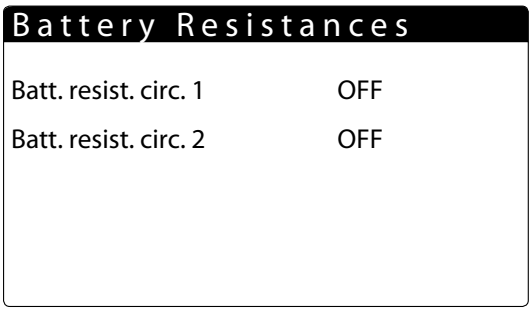
Indicates the pressure gas temperature for each compressor in circuit 1.



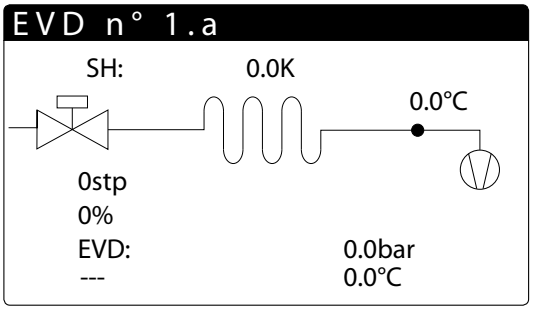
This screen displays the pressure and valve data of circuit 2, following the same logic as the respective circuit 1 screen.



Indicates the pressure gas temperature for each compressor in circuit 2.



Indicates the status of the basin resistors of the circuit 1 and 2 coils.



Indicates the values of the EVD electronic valves:
— SH: Overheating
— Compressor suction temperature
— Electronic valve opening step
— Electronic valve opening percentage
— Electronic valve status
— Gas pressure
— Gas temperature

NOTICE

This screen repeats for all available EVD valves (1a / 1b / 2a / 2b).

4 INPUTS/OUTPUTS LIST

4.1 PCO BOARD

Inputs/outputs	Code	Description
Analogue inputs		
U1	TAP1	High pressure transducer (4÷20mA)
U2		
U3	SUW	evaporator water outlet probe
U4	SIW	evaporator water inlet probe
U5	SGP1A	Pressure gas probe circuit 1 compressor 1
U6	TAP2	High pressure transducer (4÷20mA)
U7		
U8	MULTI IN	Multi-function input
U9	SAE	External air sensor
U10	SGP2A	Pressure gas probe circuit 2 compressor 1
Digital inputs		
ID1	AP1	Circuit 1 high pressure switch
ID2	BP1	Circuit 1 low pressure pressure switch
ID3	0/1	Remote ON/OFF contact (closed = ON)
ID4	C/F	Remote season contact (closed = summer mode)
ID5	FL	Flow switch
ID6	QMCP1A	Circuit breaker compressor 1 circuit 1
ID7	QMCP1B	Circuit breaker compressor 2 circuit 1
ID8	RCS	Phase monitor
ID9	AP2	Circuit 2 high pressure switch
ID10	BP2	Circuit 2 low pressure pressure switch
ID11	QMCP2A	Circuit breaker compressor 1 circuit 2
ID12	QMCP2B	Circuit breaker compressor 2 circuit 2
ID13	QMPE1	Evaporator pump 1 circuit breaker
ID14	QMPE2	Evaporator pump 2 circuit breaker
ID15	QMF1A	Fan circuit breaker circuit 1
ID16	QMF2A	Fan circuit breaker circuit 2
ID17		
ID18		Multi-function digital input
Digital outputs		
NO1	CP1A	Compressor 1 Circuit 1
NO2	CP1B	Compressor 2 Circuit 1
NO3	CP2A	Compressor 1 Circuit 2
NO4	CP2B	Compressor 2 Circuit 2
NO5	CP1C	Compressor 3 Circuit 1
NO6	CP2C	Compressor 3 Circuit 2
NO7	MPE1	Pump 1 evaporator
NO8	AE	Alarm summary
NO9	MPE2	Pump 2 evaporator
NO10	MV1	Circuit 1 fans
NO11	MV2	Circuit 2 fans
NO12	VIC1	Circuit 1 reverse cycle valve
NO13	VIR1	Inversion valve recovery cycle 1
NO14	VIC2	Circuit 2 reverse cycle valve
NO15	VIR2	Inversion valve recovery cycle 2
NO16	RE	Heater exchanger
NO17	MPR1	Recovery pump 1
NO18	MPR2	Recovery pump 2
Analogue outputs		
Y1	DCP1	Modulating fan unit Circuit 1
Y2	DCP2	Modulating fan unit Circuit 2
Y3	DCP3	Modulating fan unit Common Circuit
Y4		
Y5		
Y6		

4.2 MPC BOARD

Inputs/outputs	Code	Description
Analogue inputs		
B1	SIR1	Recovery inlet water temperature 1
B2	SUR1	Recovery 1 outlet water temperature
B3	SUWC	Evaporator common outlet water temperature (Master)
B4	SURC	Recovery common outlet water temperature
B5	SSAN	DHW storage tank temperature (optional)
B6	SUR2	Recovery 2 outlet water temperature
B7	SGP1B	Pressure gas probe circuit 1 compressor 2
B8		
B9	SIR2	Recovery inlet water temperature 2
B10	SGP1C	Pressure gas probe circuit 1 compressor 3
B11	SGP2B	Pressure gas probe circuit 2 compressor 2
B12	SGP2C	Pressure gas probe circuit 2 compressor 3
Digital inputs		
ID1	FLR	Recovery flow switches
ID2	QMPR1	Thermomagnetic switch on pump 1 - recovery
ID3	QMPR2	Thermomagnetic switch on pump 2 - recovery
ID4	QMCP1C	Circuit breaker compressor 3 circuit 1
ID5	QMCP2C	Circuit breaker compressor 3 circuit 2
ID6	ON/OFF REC	On/Off remote D.H.W. /Hot water
ID7	2nd SET REC	Qualify according to setpoint D.H.W.
ID8	LD1	Leak Detector
ID9	CTF1	Second fan inlet C1
ID10	CTF2	Second fan inlet C2
Digital outputs		
NO1	VSA1	Circuit 1 storage tank emptying valve
NO2	VSA2	Circuit 2 storage tank emptying valve
NO3	VSP1	Circuit 1 oil spillage valve
NO4	VSP2	Circuit 2 oil spillage valve
NO5	VSR1	Recovery solenoid valve circuit 1
NO6	VSR2	Recovery solenoid valve circuit 2
NO7	VSB1	Battery solenoid valve circuit 1
NO8	VSB2	Battery solenoid valve circuit 2
NO9	VSE1	Evaporator solenoid valve circuit 1
NO10	VSE2	Evaporator solenoid valve circuit 2
NO11	VLRB1	Battery return liquid valve circuit 1
NO12	VLRB2	Battery return liquid valve circuit 2
Analogue outputs		
Y1		
Y2		
Y3		
Y4		

4.3 PCOE BOARD

Inputs/outputs	Code	Description
Analogue inputs		
B1	SL1	C1 Liquid probe
B2	SL2	C2 Liquid probe
B3	SGA1	Intake gas temperature circuit 1
B4	SGA2	Intake gas temperature circuit 2
Digital outputs		
NO1	MVCP	Compressor box fans
NO2	RB1	Basin resistor circuit 1
NO3	RB2	Basin resistor circuit 2
NO4		
Digital inputs		
ID1		
ID2		
ID3		
ID4		
Analogue outputs		
Y1		

4.4 EVD VALVE 1

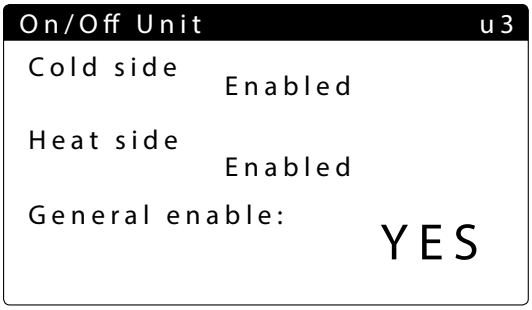
	Code	Description
EVA	EV1A	Electronic valve A circuit 1
EVB	EV1B	Electronic valve B circuit 1
S1	TBP1	Low pressure transducer (4÷20mA) (EV1A)
S2	ST1A	Intake temperature probe (EV1A)
S3		
S4	ST1B	Intake temperature probe (EV1B)

4.5 EVD VALVE 2

	Code	Description
EVA	EV2A	Electronic valve A circuit 2
EVB	EV2B	Electronic valve B circuit 2
S1	TBP2	Low pressure transducer (4÷20mA) (EV2A)
S2	ST2A	Intake temperature probe (EV2A)
S3		
S4	ST2B	Intake temperature probe (EV2B)

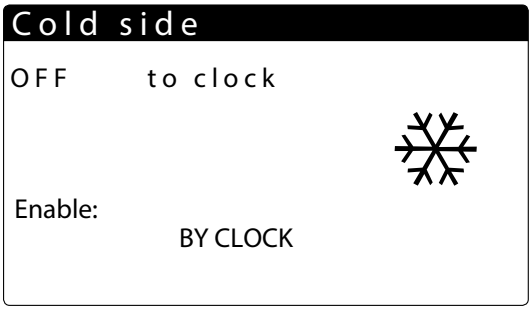
5 ON/OFF MENU

5.1 UNIT SWITCH-ON/OFF AND SETTINGS ON THE FUNCTIONING MODE



— **General on/off**: this window displays the data relative to the unit state
— **General ON/Off Status**: the user can enable/disable the unit

6 COOL MENU

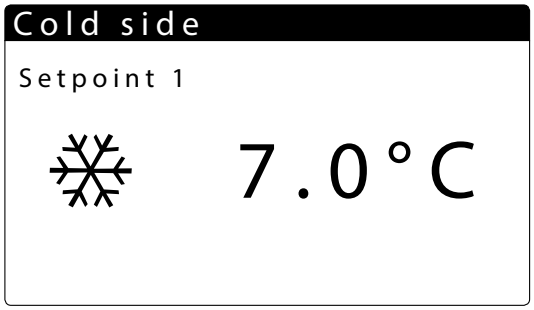


From this screen you can set the following parameters:

- **NO**: the system does not produce cold water
- **Yes**: the unit is running and the system is adjusted at the default set-point
- **Yes with set2**: the unit is running and the system is adjusted at the second set-point
- **BY CLOCK**: the system is adjusted by the set time periods, when active.

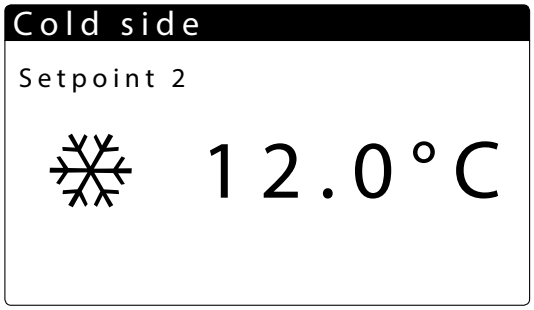
As a result, the current state of the machine will change according to the parameter set.

6.1 DISPLAY OF COOLING SIDE HEAT EXCHANGER SET-POINT 1



— Indicates the default setpoint of the system
— Indicates the cooling set-point temperature

6.2 DISPLAY OF COOLING SIDE HEAT EXCHANGER SET-POINT 2



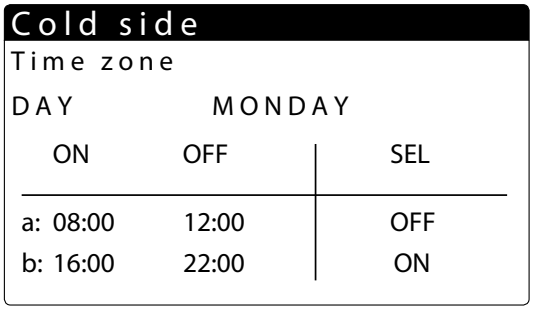
Indicates the set-point 2 settings for the production of cold water.

NOTICE

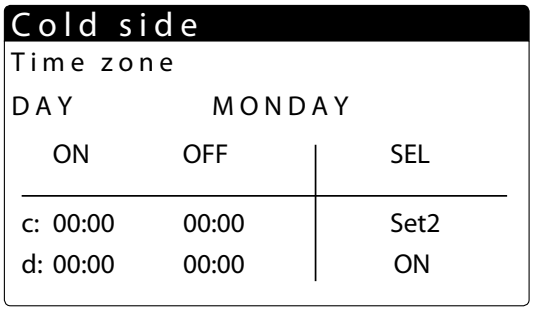
To set the time periods in the cold menu, see chapter 6.3 Enabling: BY CLOCK p. 19; to set the time periods in the hot menu, see chapter 7.2 Enabling: BY CLOCK p. 20.

6.3 ENABLING: BY CLOCK

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



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



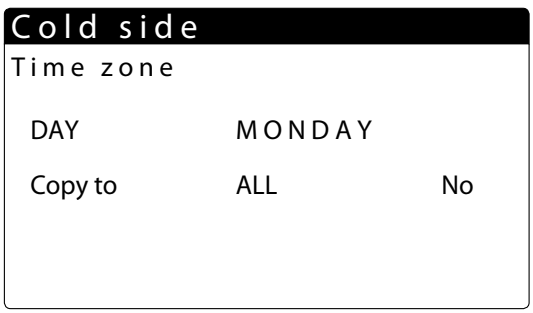
It is possible to assign up to four time bands (a, b, c, d) for each day of the week, during which a specific action can be selected:
— **ON**: system on with setpoint 1 (nominal);
— **SET2**: system on with setpoint 2;
— **OFF**: system off;

NOTICE

The system keeps the system off outside the time bands.

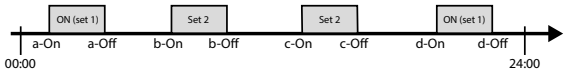
All windows containing the settings on the time periods will be visible only if activated on the main page of the cold menu (Enable = FROM CLOCK)

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):

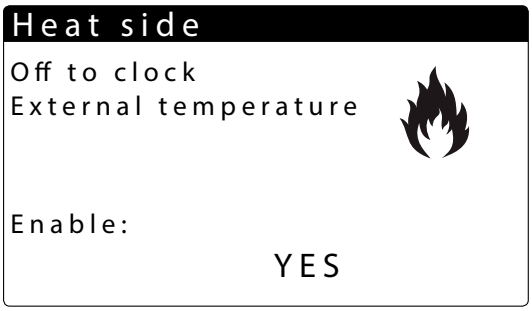


The settings may be copied on a single day or on all days:
- No = disables the day setting copy function
- Yes = enables the day setting copy function

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:



7 HEAT MENU

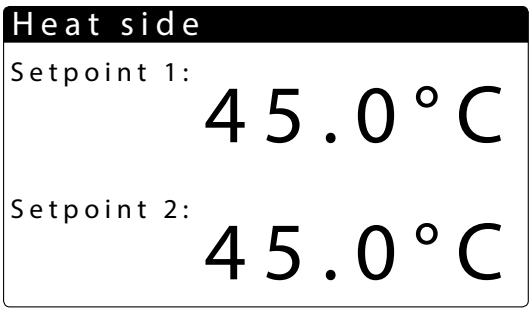


From this screen you can set the following parameters:

- **NO**: the unit does not produce hot water
- **YES**: the unit is running and the system is adjusted at the default set-point.
- **Yes with set2**: the unit is running and the system is adjusted at the second set-point.
- **BY CLOCK**: the system is adjusted by the set time periods, when active.

As a result, the current state of the machine will change according to the parameter set.

7.1 DISPLAY OF HEATING SIDE SET-POINT



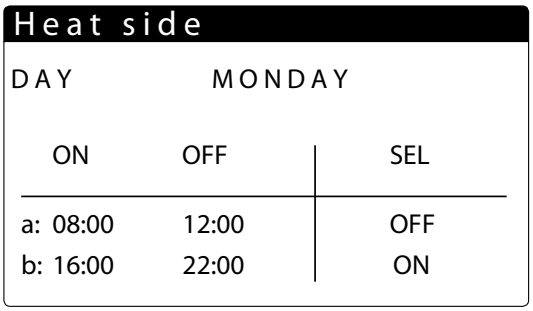
— Displays the current settings of the unit
— Displays the heat exchanger outlet water temperature at the default set-point
— Displays the heat exchanger outlet water temperature at the second set-point

7.2 ENABLING: BY CLOCK

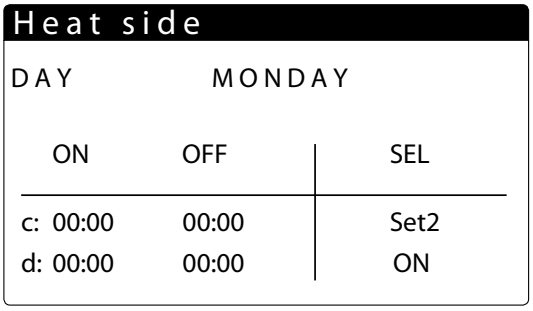
NOTICE

The procedure for setting the time periods of the hot menu is identical to that of the cold menu.

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



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



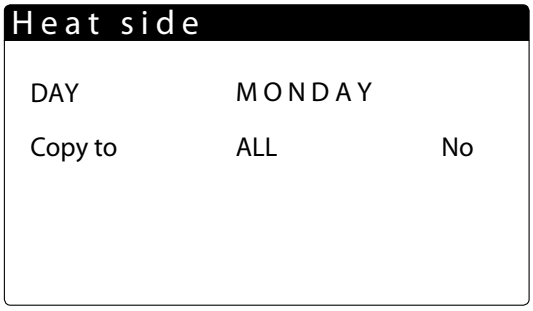
It is possible to assign up to four time bands (a, b, c, d) for each day of the week, during which a specific action can be selected:
— **ON**: system on with setpoint 1 (nominal);
— **SET2**: system on with setpoint 2;
— **OFF**: system off;

NOTICE

The system keeps the system off outside the time bands.

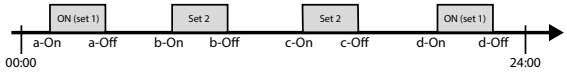
All windows containing the settings on the time periods will be visible only if activated on the main page of the hot menu (Enable = FROM CLOCK)

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):



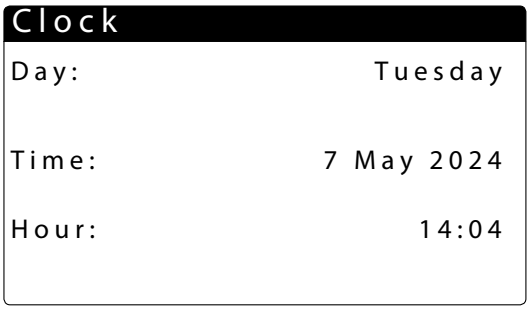
The settings may be copied on a single day or on all days:
- No = disables the day setting copy function
- Yes = enables the day setting copy function

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:



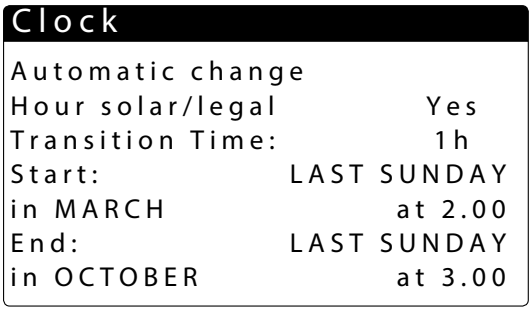
8 CLOCK MENU

8.1 SYSTEM TIME AND DATE SETTINGS



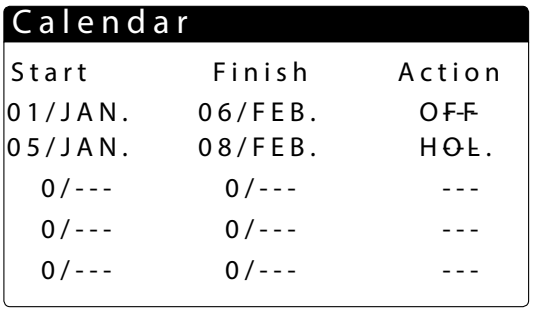
— Displays the day of the week (it cannot be changed from this window).
— The date of the system can be modified
— The time of the system can be modified

8.2 DAYLIGHT SAVING TIME SETTINGS



— **Clock**: the daylight saving time settings are displayed in this window.
— **Day-light saving time**: this parameter indicates whether to enable adjustment of system time based on the date, according to the subsequent settings.
— **Transition time**: This parameter indicates how much the system time must be increased or decreased based on time change (depending on whether it is the start or finish of daylight savings time).
— **Start of daylight saving time use**: this parameter indicates which day of the month you must start to use daylight saving time; in order to specify this, you must set two parts of the same parameter, the first indicating the week (first, second, third or last), the second indicating the day of the week.
— **Start month**: this parameter indicates the month in which to start to use the daylight saving time setting
— **Start time**: this parameter indicates the time in which to start to use the daylight saving time setting
— **End of daylight saving time use**: this parameter indicates which day of the month you must quit using daylight saving time; in order to specify this, you must set two parts of the same parameter, the first indicating the week (first, second, third or last), the second indicating the day of the week.
— **End month**: this parameter indicates the month in which to quit using the daylight saving time setting
— **End hour**: this parameter indicates the time in which to quit using the daylight saving time setting

8.3 SETTING THE CALENDAR FUNCTION

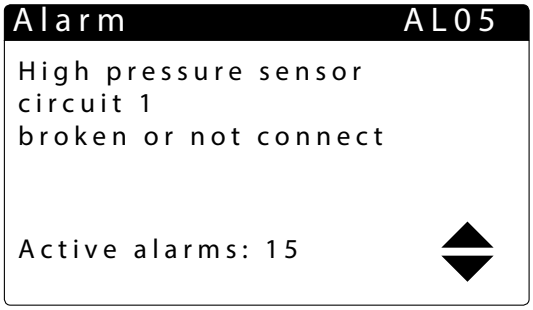


— **Calendar**: this window sets the actions to be carried out in the calendar function; this function allows you to set 5 periods, specifying the length in days, and to connect a specific action to be carried out to each one of them.
— **Start**: Indicates the start date for the 5 periods that can be set.
— **End**: Indicates the end date for the 5 periods that can be set.
— **Action**: indicates the action to be carried out for each of the 5 periods set in the calendar.
— **Time periods start date**: these parameters specify the starting date (day/month) for each period; if you set 00/00 as the start and end value, this period will be disabled.
— **Time periods end date**: these parameters specify the end date (day/month) for each period; if you set 00/00 as the start and end value, this period will be disabled.
— **Actions set for the time periods**: these parameters specify the action to be carried out corresponding to the set periods; the actions can be:
- Off (unit switch-off during the period selected);
- Fest (for each day of the period selected, settings relative to the time periods specified for the "HOLIDAY" will be carried out);
- --- (no action).

9 ALARM MENU

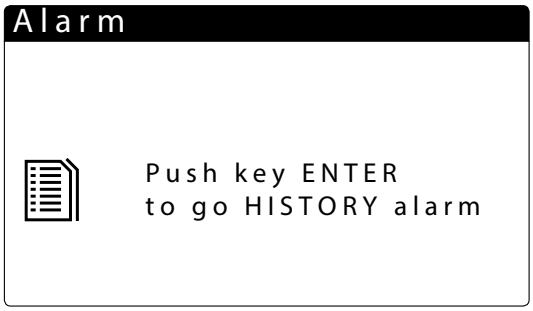
Every time an alarm is generated, it is saved in an area of memory called “alarms log”, which contains the last 100 alarms recorded in the unit. For every alarm saved, different information is recorded regarding the unit situation at that time (work temperatures and pressures), so that the technical after-sales staff can have a clear view of the unit when a given alarm occurs.
To access the alarms log:

1. press the key ( ) and enter the alarms display;
2. if they are present, scroll all active alarms using the ( ) key and reach the icon that indicates the activation of the alarms log;
3. press the key ( ) to enter the alarms log;
4. to exit the alarms log, press ( ) or ( ).

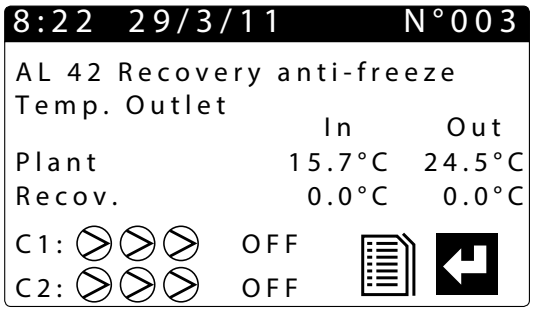


— **Alarm code**: this parameter indicates the alarm code. This code can be found in the following pages (alarms summary table).
— **Alarm description**: this parameter indicates the description of the alarm saved.
— Indicates the possibility of scrolling the displays of the various active alarms signalled by pressing the keys and .

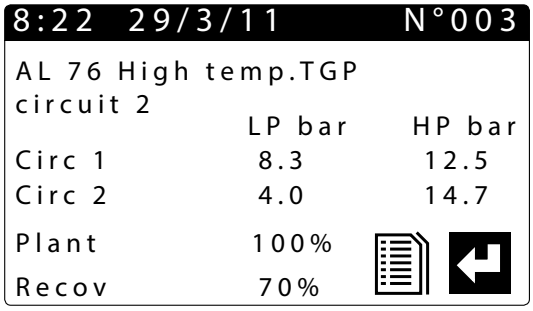
9.1 ALARM HISTORY



By using the keys to scroll inside the alarms menu, you access the indicated screen from whence it is possible to enter the alarms log MENU.



Alarm number: this value indicates the progressive number assigned to the alarm; this value goes from 0 (first alar recorded) to 99 (last alarm recorded).



The following descriptions are possible for each alarm:
— Date and time of triggering
— Nature of alarm
— Cold side inlet/outlet temperature
— Hot side inlet/outlet temperature
— Status of compressors
— Low pressure
— Status of unit
— Status of pumps
— High pressure

10 LIST OF ALARMS

There are three types of alarm resets:
— **Auto**: automatic, when the event causing the alarm stops, also the alarm disappears.
— **Semi (semi-automatic)**: the alarm is automatic, but if it is triggered more than 3 times in an hour then it becomes with manual reset;
— **Manual**: manual, to restart normal operation manual acknowledgement is necessary.
— **Manual with password**: to resume normal operation, you must contact the After-sales Technical Service.

NOTICE

Keep the  button pressed to rearm the alarm manually.

The alarms log cannot be reset and as the memory available is suitable to contain 100 alarms, once the index has reached the value of 99, its increase will start from 00 again (over-writing the oldest alarm).

Code	Description	Reset	Note
AL01	Clock battery faulty or not connected	Automatic	
AL02	Expansion memory damaged	Automatic	
AL03	ID8 phase monitor	Automatic	
AL04	Board re-start from lost power	Automatic	
AL05	High pressure sensor circuit 1 faulty or not connected	Automatic	
AL06	High pressure sensor circuit 2 faulty or not connected	Automatic	
AL07	Low pressure sensor circuit 1 faulty or not connected	Automatic	
AL08	Low pressure sensor circuit 2 faulty or not connected	Automatic	
AL09	Inlet water temp sensor evap. faulty or not connected	Automatic	
AL10	Evap Out. Temp. broken or disconnected	Automatic	
AL11	Outlet water temp sensor evap.com. faulty or not connected	Automatic	
AL12	Inlet water temp sensor recovery faulty or not connected	Automatic	
AL13	Outlet water temp sensor recovery1 faulty or not connected	Automatic	
AL14	Outlet water temp sensor recovery2 faulty or not connected	Automatic	
AL15	Outlet water temp sensor recovery common faulty or not connected	Automatic	
AL16	External temperature sensor faulty or not connected	Automatic	
AL17	Circuit 1 Liquid temperature probe broken or not connected	Automatic	
AL17	Geothermal input's temperature probe is broken or not connected	Automatic	
AL18	Liquid temperature sensor circuit 2 faulty or not connected	Automatic	
AL18	Geothermal output's temperature probe is broken or not connected	Automatic	
AL19	Request for maintenance on compressors of circuit 1	Automatic	
AL21	Circuit 1 Pump 1 Rec. maintenance	Automatic	
AL22	Circuit 1 Pump 1 Rec. maintenance	Automatic	
AL23	Circuit breaker compressor 1 circuit 1	Manual	
AL24	ID13 Pump 1 system overload	Manual	
AL25	ID14 Pump 2 system overload	Manual	
AL26	Thermal alarm heat recovery pump 1	Manual	
AL27	Pump 2 rec. overload	Manual	
AL28	ID15 Fan circuit breaker circuit 1	Manual	
AL29	ID16 Fan circuit breaker circuit 2	Manual	
AL30	Low pressure indicated by pressure switch on circuit 1	Manual with password	
AL31	Low pressure sensor circuit 1	Manual	
AL32	High pressure indicated by pressure switch on circuit 1	Manual with password	
AL33	High pressure sensor circuit 1	Manual	
AL34	Circuit 1 Low pressure from probe (not delayed)	Manual	
AL35	Circuit 2 Low pressure from probe (not delayed)	Manual	
AL36	Circ 1 prevention by probe	Automatic	
AL37	Circ 2 prevention by probe	Automatic	
AL38	Loss of evaporator water flow	Manual	
AL39	Loss of heat recovery water flow	Manual	
AL40	Anti-freeze alarm system inlet/outlet temperature	Manual	
AL41	Anti-freeze alarm system common outlet temperature	Manual	
AL42	Anti-freeze alarm heat recovery 1 inlet/outlet temperature	Manual	

Code	Description	Reset	Note
AL43	Anti-freeze alarm heat recovery 2 outlet temperature	Manual	
AL44	Output temp com. rec. anti-freeze	Manual	
AL45	Expansion IO (uPC) Off-line	Automatic	
AL46	Expansion IO (pCOe) Off-line	Automatic	
AL47	Forcing off recovery 1	Automatic	
AL48	Discharge gas temperature sensor circuit 1 faulty or not connected	Automatic	
AL49	Discharge gas temperature sensor circuit 2 faulty or not connected	Automatic	
AL50	Board re-start from lost power	Automatic	
AL51	Circuit 1 Comp. 2 maintenance	Automatic	
AL52	Circuit 1 Comp.3 maintenance	Automatic	
AL53	Circuit 2 Comp.1 maintenance	Automatic	
AL54	Circuit 2 Comp.2 maintenance	Automatic	
AL55	Circuit 2 Comp.3 maintenance	Automatic	
AL56	Circuit 2 Fan maintenance	Automatic	
AL57	Circuit 1 Pump 2 Rec. maintenance	Automatic	
AL58	Circuit 1 Pump 2 syst. maintenance	Automatic	
AL59	Circuit breaker compressor 2 circuit 1	Manual	
AL60	Circuit breaker compressor 3 circuit 1	Manual	
AL61	Circuit breaker compressor 1 circuit 2	Manual	
AL62	Circuit breaker compressor 2 circuit 2	Manual	
AL63	Circuit breaker compressor 3 circuit 2	Manual	
AL64	Pressure switch BP 2 from pressure switch	Manual with password	
AL65	Low pressure 2 from probe	Manual	
AL66	High pressure pressostat circuit 2	Manual with password	
AL67	High pressure sensor circuit 2	Manual	
AL68	Circ.1 low pressure prevention	Automatic	
AL69	Circ.2 low pressure prevention	Automatic	
AL71	Forcing off recovery 2	Automatic	
AL72	Forcing off common recovery	Automatic	
AL73	Circuit 1 TGP prevention	Automatic	
AL74	Circuit 2 TGP prevention	Automatic	
AL75	High discharge gas temperature circuit 1	Automatic	
AL76	High discharge gas temperature circuit 2	Automatic	
AL78	Defrost on system not available	Automatic	
AL79	Defrost on recovery not available	Automatic	
AL80	Alarm Offline Master board disconnected	Automatic	
AL84	High system inlet temperature alarm	Automatic	
AL85	Alarm high temperature - Recovery inlet	Automatic	
AL86	Heating off forcing, circuit 1	Automatic	
AL87	Heating off forcing, circuit 2	Automatic	
AL88	Cooling off forcing, circuit 1	Automatic	
AL89	Cooling off forcing, circuit 2	Automatic	
AL90	pLAN Master offline	Automatic	
AL91	pLAN Slave offline	Automatic	
AL92	Slave alarm	Automatic	
AL93	Master alarm	Automatic	
AL94	Faulty domestic hot water storage tank temperature probe alarm	Automatic	
AL95	No deltaP circuit 1	Automatic	
AL96	No deltaP circuit 2	Automatic	
AL97	Leak detector	Manual with password	
AL99	Fault suction temp circ.1 and 2	Automatic	
AL100	Low SH circ.1	Automatic	
AL101	Low SH circ.2	Automatic	
AL104	Circuit 1 envelope alarm	Manual	
AL105	Envelope alarm circuit 2	Manual	

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