AERMEC
air conditioning

Quick Reference

AIR / WATER Heat pump

USER MANUAL

pCO5

GB

AERMEC
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Index

User interface (PGD1) 4

Start-up procedure 5

Menu structure and navigation 6

User operating procedures 7

Main menu 8
Main menu - General monitoring 8
Main menu - System monitoring 9
Main menu - Circuit 1 monitoring 9
Main menu - Circuit 2 monitoring (visible if present) 10
Main menu - General circuits monitoring 10

In / Out Menu 11
In / Out Menu - External temperature monitoring 11
In / Out Menu - Fans monitoring (common or circuit 1) 11
In / Out Menu - Defrost monitoring circuit 1 / circuit 2 12
In / Out Menu - Analogue input monitoring (1) 13
In / Out Menu - Analogue input monitoring (2) 13
In / Out Menu - Analogue input monitoring (3) 13
In / Out Menu - Analogue input monitoring (4) (only on units with two circuits) 14
In / Out Menu - Analogue input monitoring (5) (only on units with two circuits) 14
In / Out Menu - Digital input monitoring (1) 14
In / Out Menu - Digital input monitoring (2) 15
In / Out Menu - Digital input monitoring (3) 15
In / Out Menu - Digital input monitoring (4) 15
In / Out Menu - Digital input monitoring (5) 16
In / Out Menu - Digital input monitoring (6) 16
In / Out Menu - Digital output monitoring (1) 17
In / Out Menu - Digital output monitoring (2) 17
In / Out Menu - Digital output monitoring (3) 17
In / Out Menu - Digital output monitoring (4) 18
In / Out Menu - Digital output monitoring (5) 18
In / Out Menu - Digital output monitoring (6) 18

ON / OFF Menu 19
ON / OFF Menu - Switching unit on or off 19

SYSTEM Menu 19
SYSTEM Menu - Selecting the operating mode 19
SYSTEM Menu - Setting main setpoints 20
SYSTEM Menu - Setting secondary setpoints 20
SYSTEM Menu - Time-clock settings (A) and (B) 21
SYSTEM Menu - Time-clock settings (C) and (D) 21
SYSTEM Menu - Copy time-clock settings function 22
SYSTEM Menu - Setting change-over based on external temperature 22
SYSTEM Menu - Setting change-over based on calender 23

INSTALLER Menu (Password 0000) 23
INSTALLER Menu- Insert password to access menus 23
INSTALLER Menu- Enabling digital inputs ID3 and ID4 24
INSTALLER Menu- Addressing BMS supervisor system 24
INSTALLER Menu- Enabling primary functions by BMS 24
INSTALLER Menu- Addressing secondary supervisor system (not opto-isolated) 25

INSTALLER Menu- Selecting control for water production ... 25
INSTALLER Menu- Setting parameters for cooling control ... 25
INSTALLER Menu- Setting parameters for heating control ... 26
INSTALLER Menu- Setting ambient curve parameters for cooling ... 26
INSTALLER Menu- Setting ambient curve parameters for heating ... 26
INSTALLER Menu- Configuring pumps ... 27
INSTALLER Menu- Setting pump anti-freeze function ... 27
INSTALLER Menu- Setting fans anti-icing function ... 27
INSTALLER Menu- Setting pump operation during use of anti-freeze heaters ... 28
INSTALLER Menu- Setting multi-function input ... 28
INSTALLER Menu- Configuration of capacity limit from multi-function input (if enabled) ... 28
INSTALLER Menu- Configuration of variable setpoint from multi-function input (if enabled) ... 29
INSTALLER Menu- Configuration of variable setpoint from multi-function input (if enabled) ... 29
INSTALLER Menu- Configuration of NTC signal from multi-function input (if enabled) ... 29
INSTALLER Menu- Monitoring compressor hour counter circuit 1 ... 29
INSTALLER Menu - Operation Silent Night Set ... 30
INSTALLER Menu - Management of electrical heaters ... 30
INSTALLER Menu - Enabling boiler ... 30
INSTALLER Menu - Set temperature of integration and substitution ... 30
INSTALLER Menu- Monitoring compressor hour counter circuit 2 (if present) ... 31
INSTALLER Menu- Monitoring number of compressor starts circuit 1 ... 31
INSTALLER Menu- Monitoring number of compressor starts circuit 2 (if present) ... 31
INSTALLER Menu- Monitoring pump operating hours ... 31
INSTALLER Menu- Monitoring unit configurator and test info ... 32
INSTALLER Menu- Monitoring unit configurator and test info ... 32

CLOCK Menu ... 32
CLOCK Menu - Setting system date and time ... 32
CLOCK Menu - Setting automatic time change (summer/winter time) ... 33
CLOCK Menu - Setting holidays ... 33

Alarm summary table ... 34

Alarm history and memory ... 37

Alarm history ... 37

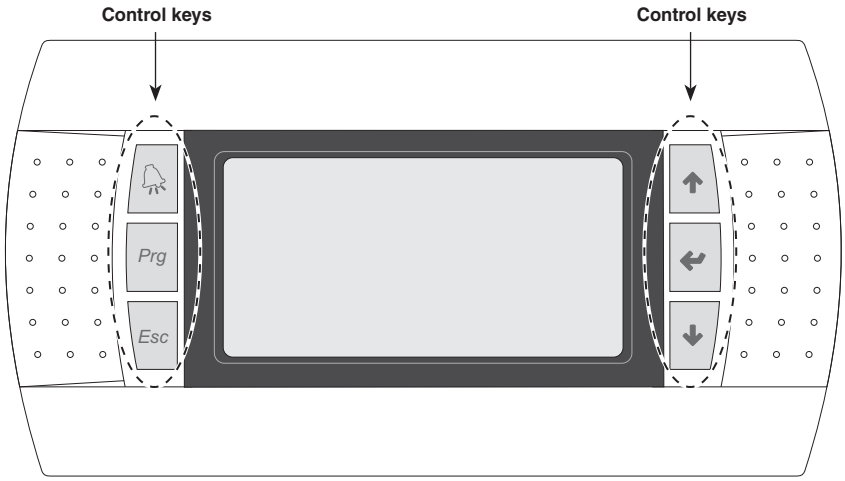
Quick reference ... 40

User interface (PGD1)

The unit control panel allow the quick setting and display of the unit's operating parameters. The board memorises all the default settings and any modifications. By installing the remote control panel PGD1 it is possible to remotely replicate all the functions and the settings available on the unit. After a power failure the unit is capable of an automatic restart, retaining the original settings.

The user interface consists of a graphic display with six navigation keys; the display is arranged through a menu hierarchy, activated by pressing the navigation keys. The default display of these menus is the main screen. The navigation between the various parameters is by using the arrow keys located to the right of the display. These keys are also used for the modification of the selected parameter.

INTERFACE CONTROL KEYS:

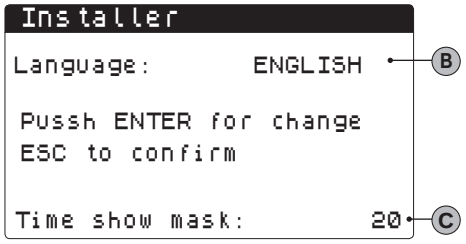


Key	Function
	ALARM key Displays the list of active and historical alarms (red LED on = active alarm)
Prg	**MENU ACTIVATION key** • Pressing this key activates the navigation between menus (orange LED on = winter operating mode active)
Esc	**EXIT MENU key** • Pressing this key returns to the previous menu
	NAVIGATION (+) key • Pressing this key when navigating between menu/parameters passes to the next menu/parameter • Pressing this key when modifying a parameter increases the value of the selected parameter
	NAVIGATION (enter) key • Pressing this key when navigating between menus allows entry to the selected menu • Pressing this key when navigating between parameters allows selection of the parameter displayed to modify it • Pressing the key when modifying a parameter confirms the modification of the parameter value selected
	NAVIGATION (-) key • Pressing this key when navigating between menu/parameters passes to the previous menu/parameter • Pressing this key when modifying a parameter decreases the value of the selected parameter

Start-up procedure

After having powered up the unit the control board will carry out preliminary operations before being ready for use. This initial procedure takes around 60 seconds to complete. During the initial loading procedure two screens are displayed: a start-up screen and a screen to select the system language. These screens are detailed in the table below.

WARNING: The system language can be set on the screen displayed at the start-up or can be modified at any time through the appropriate screen contained in the Installer menu.

Start-up procedure		
Display on the unit	**Index**	**Display/Parameter**
	A	**Remaining time for software loading:** this value shows the remaining time to starting the software loaded on the unit, and passing the to system language selection
	B	**System language:** this parameter shows the current language set for the system. To change the language follow the instructions shown on the screen.
	C	**Remaining time to select the language:** this value shows the remaining time to modify the language. When the time elapses the display goes to the main screen (Main screen - General monitoring). **WARNING: It is possible to modify the system language at any time using the appropriate screen contained in the Installer menu. (Menu password = 0000).**

Menu structure and navigation

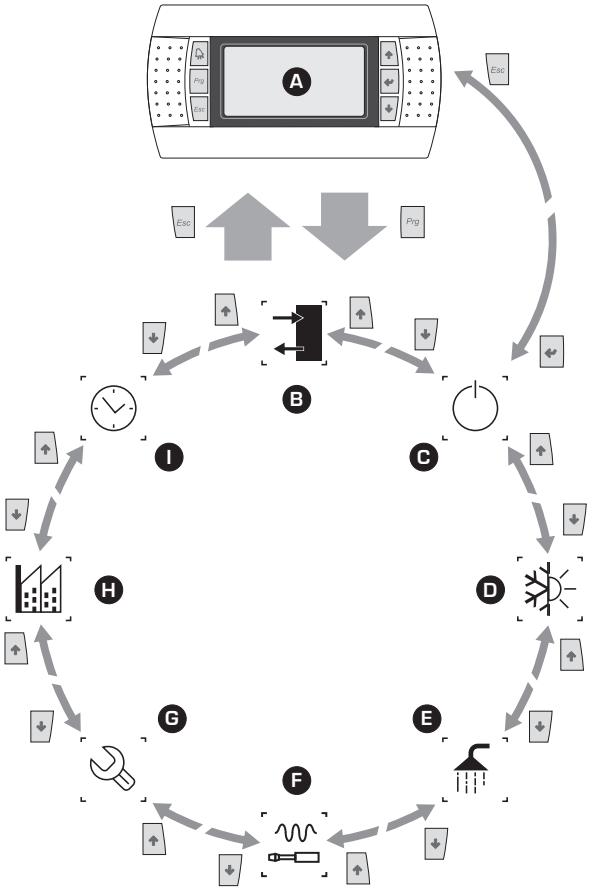
Both the functions to control the unit and the operating information are displayed on the unit mounted control panel. All the functions and information are arranged in screens which in turn are grouped into menus.

During the normal operation of the unit the main screen is displayed, from which it is possible to access the selection of the other operating menus.

The menus are displayed through the rotation of the icons that they represent. Once the desired icon is selected the chosen menu is entered, permitting the display or modification of the parameters that it is made up from. The procedure for navigating the menus, or changing parameters, is explained in detail in the chapter “User operating procedures”.

The adjacent drawing shows the relation between the various menus and the navigation keys used.

The operating menus are arranged as in the following drawing:



⚠ **WARNING: Improper selection of the parameters in the Installer menu may cause malfunctions of the unit. It is recommended that these parameters are only modified by personnel qualified in the installation and configuration of the unit.**

Index	Icon	Menu	Menu function
A	---	MAIN	The screens in this menu display the current conditions of the unit (unit status, setpoints,circuit data, etc.)
B		IN/OUT	This menu contains advanced information on the unit operation
C		ON/OFF	This menu permits the unit to be enabled or disabled, and provides information on the status
D		SYSTEM	This menu permits the selection of the operating modes, the water setpoints and the time-clock for the system
E		RECOVERY	If the unit includes heat recovery, this menu permits the setting of the parameters associated with the heat recovery
F		INSTALLER	This menu contains the settings useful for the installer (enabling digital inputs, BMS configuration, control, pumps, etc.) **WARNING: This menu is password protected. The password is: 0000**
G		ASSISTANCE	This menu is only accessible to qualified personnel
H		FACTORY	This menu is only accessible to qualified personnel
I		CLOCK	This menu contains the clock settings for the system control (date, hour, calender)

User operating procedures

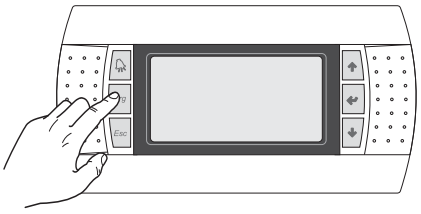
To check or modify the operating parameters of the unit it is necessary to use the interface of the control panel on the unit. The basic operations that the user must be capable of, for the correct use of the unit, are:

(1) Moving from one menu to the next.
(2) Selecting and modifying a parameter.
In this manual the parameters that can be modified by the user are identified by the icon ( ).

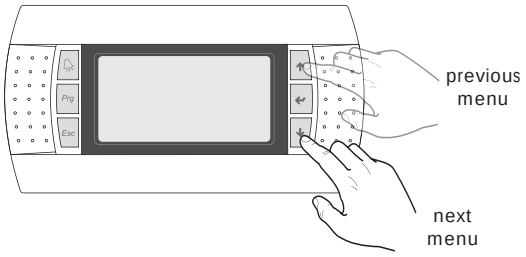
1

Moving between menus

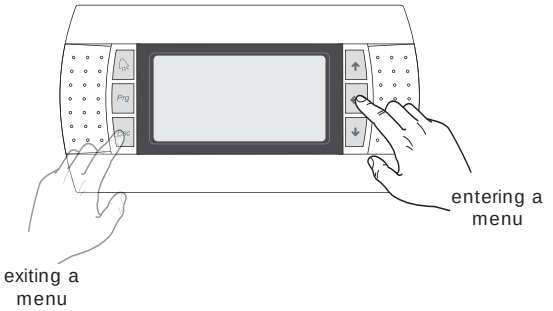
(a) To move between the menus, the order in which they are displayed is shown in the previous page, enter the menu selection mode by pressing the key ( ).



(b) 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.



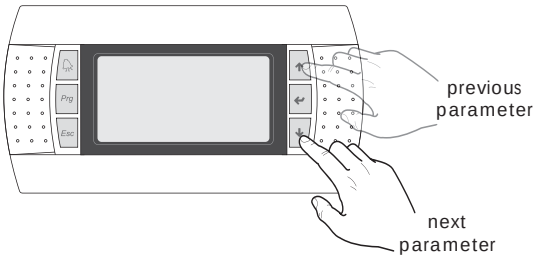
(c) When the desired menu is seen press the key ( )to enter the menu. Press the key( ) to return to the menu selection mode.



2

Selecting and modifying a menu

(a) 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.



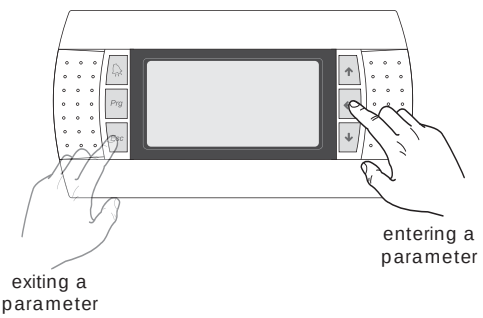
(c) When the desired parameter is seen press the key ( ) to enter the parameter. To exit the parameter and return to the parameter selection mode press the key ( ).

WARNING: Once a parameter is selected by pressing the key ( ), the parameter selection mode is automatically accessed and 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. **On the basis of the type of parameter selected the number of modifiable fields can change.**

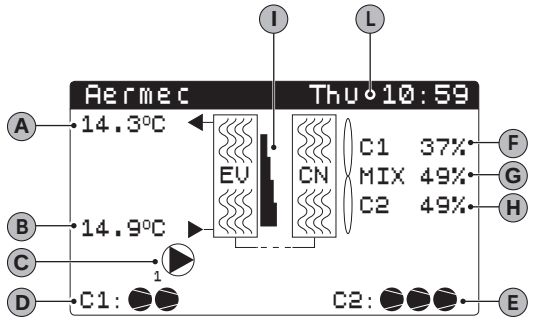


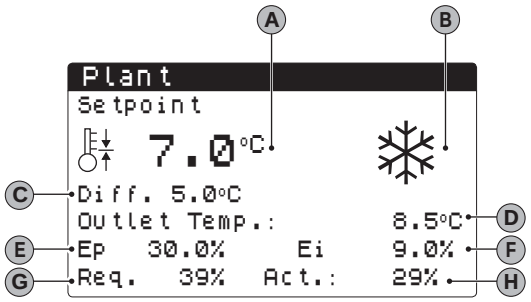
Main menu

During normal operation the first screen of the Main menu is displayed on the unit. This menu consists of several screens with different information on the operating status of the system which can be navigated using the arrow keys. In these screens the information is read only and no parameters can be changed.

WARNING: If no keys are pressed for at least 5 minutes during the use of the control panel the software automatically return to the main screen of this menu.

Main menu - General monitoring

Display on the unit	Index	Display/Parameter
		
WARNING: Several icons can appear in this screen to show specific states of the system, and the icons can be: ((LT))) low leaving temperature anti-freeze function is active (compressors switched off) ((HT)) high leaving water temperature prevention is active (compressors switched off) ((LC)) low load function active (-⋀⋀-) anti-freeze heater active (set point: 4.0°C - differential: 1.0K) (↘) the return water temperature is dropping so new requests for cooling load are disabled (↗) the return water temperature is rising so new requests for heating load as disabled (-(F)-) the flow switch is open so compressors will be switched off whilst the pump attempts to enable the flow switch	A	**System supply water temperature:** shows the water temperature leaving the heat exchanger
	B	**System return water temperature:** shows the water temperature entering the heat exchanger
	C	**Pump active:** the icon appears if the unit pump operates, if the unit is supplied with a pump. The number next to the pump indicates which of the pumps is active
	D	**Compressor status circuit 1:** the icon shows the current status of the compressors present in circuit 1, which can be: • On (●) • Off (○) • Disabled (⊠) • In alarm (⚠) • Part load operation lasting 10 minutes (P)
	E	**Compressor status circuit 2:** the icon shows the current status of the compressors present in circuit 2, which are the same as those available on circuit 1
	F	**Fan speed circuit 1:** the value shows the percentage speed of the fans on circuit 1
	G	**Common fan speed:** the value shows the percentage speed of the common fans between two circuits
	H	**Fan speed circuit 2:** the value shows the percentage speed of the fans on circuit 2
	I	**System capacity demand:** this element presents the system capacity demand as a bar graphic between 0 and 10 WARNING: Based on the operating mode of either heating or cooling the heat exchanger changes role. This is shown on the display of the screen by EV = evaporator, CN = condenser
	L	**Date and time:** shows the current date and time

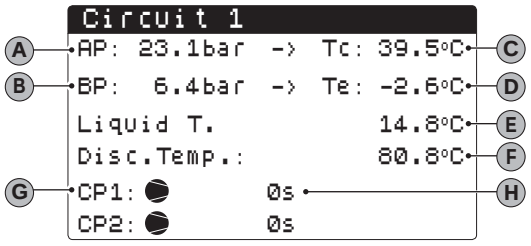
Main menu - System monitoring		
Display on the unit	**Index**	**Display/Parameter**
	A	**Current setpoint:** shows the current system setpoint
	B	**Operating mode:** the icon shows the current operating mode of the system (❄ = cooling, ☼ = heating)
	C	**Differential:** shows the current system working differential
	D	**Control sensor:** these values show the sensor on which the control is based (inlet or outlet), and the current value read by the selected sensor
	E	**Proportional error:** if the Proportional + Integral function is active, this shows the proportional value
	F	**Integral error:** if the Proportional + Integral function is active, this shows the integral value
	G	**Load request:** shows the percentage load required by the system
	H	**Capacity output:** shows the percentage output to the system

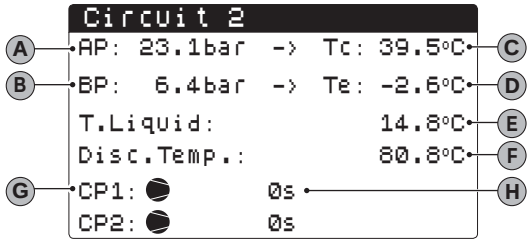
⚠ **WARNING: Several icons can appear in this screen to show specific states of the system, and the icons can be:**

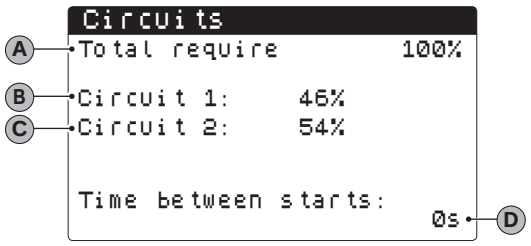
(OFF) time-clock is active

(M) multi-function input is active

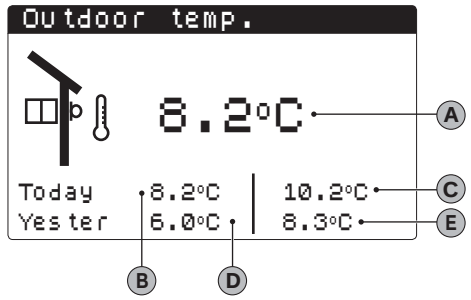
(LC) low load function is active

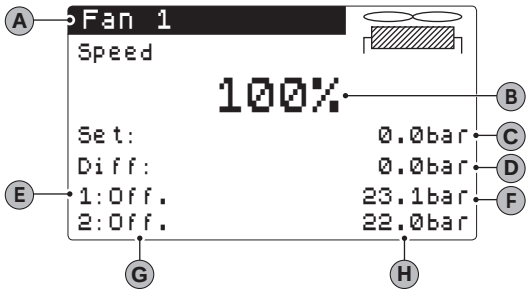
Main menu - Circuit 1 monitoring		
Display on the unit	**Index**	**Display/Parameter**
	A	**High pressure:** shows the discharge pressure of the circuit
	B	**Low pressure:** shows the suction pressure of the circuit
	C	**Condensing temperature:** shows the condensing temperature
	D	**Evaporating temperature:** shows the evaporating temperature
	E	**Liquid temperature:** shows the liquid temperature (displayed only for heat pumps models)
	F	**Discharge temperature:** shows the discharge temperature
	G	**Compressor status:** the icon represents the compressor status of the circuit. Each compressor is numbered with the code CP, and for each the current status is shown, being: • On (●) • Off (○)
	H	**Minimum residual time:** the value shows how many seconds remain until minimum required On or Off time elapses for the current status of each compressor

Main menu - Circuit 2 monitoring (visible if present)		
Display on the unit	**Index**	**Display/Parameter**
	A	**High pressure:** shows the discharge pressure of the circuit
	B	**Low pressure:** shows the suction pressure of the circuit
	C	**Condensing temperature:** shows the condensing temperature
	D	**Evaporating temperature:** shows the evaporating temperature
	E	**Liquid temperature:** shows the liquid temperature
	F	**Discharge temperature:** shows the discharge temperature (displayed only for heat pumps models or unit with total heat recovery)
	G	**Compressor status:** the icon represents the compressor status of the circuit. Each compressor is numbered with the code CP, and for each the current status is shown, being: • On (●) • Off (○)
	H	**Minimum residual time:** the value shows how many seconds remain until minimum required On or Off time elapses for the current status of each compressor

Main menu - General circuits monitoring		
Display on the unit	**Index**	**Display/Parameter**
	A	**Total capacity request:** shows the current value of total capacity request from the system
	B	**Capacity output of circuit 1:** shows the current capacity output of the circuit to satisfy the system request
	C	**Capacity output of circuit 2:** shows the current capacity output of the circuit to satisfy the system request
	D	**Residual time to next compressor:** shows the remaining time before the next compressor is turned on, if required

In / Out Menu

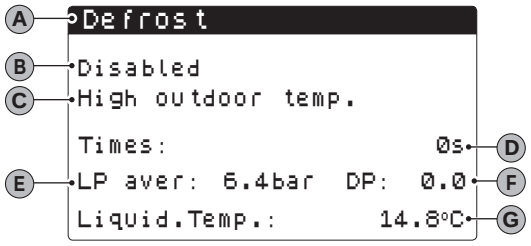
In / Out Menu - External temperature monitoring		
Display on the unit	**Index**	**Display/Parameter**
	A	**External air temperature:** shows the current external air temperature
	B	**External air temperature (minimum today):** shows the minimum external air temperature read today
	C	**External air temperature (maximum today):** shows the maximum external air temperature read today
	D	**External air temperature (minimum yesterday):** shows the minimum external air temperature read yesterday
	E	**External air temperature (maximum yesterday):** shows the maximum external air temperature read yesterday

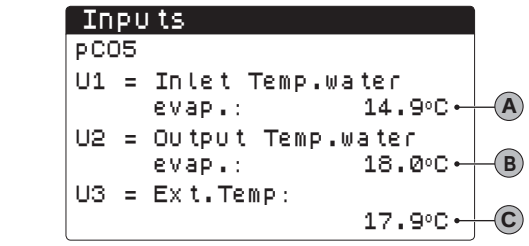
In / Out Menu - Fans monitoring (common or circuit 1)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Circuit fans:** shows which circuit the data refers to, with options of: • Fans: shows that the fans are common to both circuits • Fans 1: data refer to the fans of circuit 1 • Fans 2: data refers to the fans of circuit 2
	B	**Fan speed:** shows the percentage speed at which the fans are operating (common, circuit 1 or circuit 2)
	C	**Fan setpoint:** shows the current fans setpoint
	D	**Differential on fan setpoint:** shows the current differential applied on the fan setpoint
	E	**Fan status circuit 1:** shows the current status of the fans, which can be: • OFF: fans off • PRE-VENTILATION: fans on in anticipation of compressor • HIGH PRESSURE: control based on high pressure • POST-VENTILATION: fans on after compressors switch off • ANTI-ICING: fans on phase to prevent ice accumulation • DEFROST: defrost phase • LOW PRESSURE: control based on low pressure • MAXIMUM SPEED: fans at maximum speed • SILENCED: speed reduction to reduce noise levels
	F	**Fan pressure circuit 1:** shows the current pressure value read
	G	**Fan status circuit 2:** equivalent values to that of item (E) and this value is only displayed if the fans are common to the two circuits. If not, this value is not displayed but is shown in the following screen “Fans circuit 2”
	H	**Fan pressure circuit 2:** shows the current pressure value read and is only displayed if the fans are common to both circuits. If not, this value is not displayed but is shown in the following screen “Fans circuit 2”.

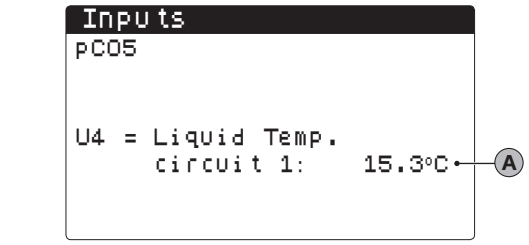
⚠ **WARNING: The information contained in this screen can be split into two screens of “Fans circuit 1” and “Fans circuit 2”. The control types can be:**

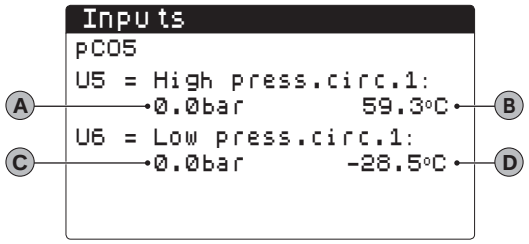
• COMMON control: The fans of both circuits are controlled together, in which case there will be only one screen which summarises the data relating to the fans (as seen in the screen above).

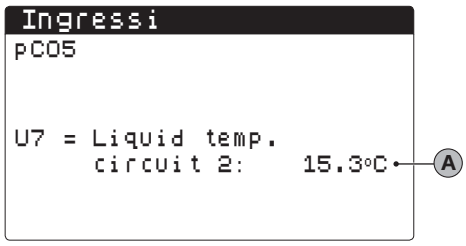
• INDIVIDUAL control: The fans of circuit 1 and circuit 2 are controlled independently, so the system will display two distinctive screens to display the data of the two circuits. In this case the two screens will be successively displayed and will contain the same type of data, except for points (E) and (G) in that (E) is displayed only in the screen “Fans circuit 1”, whilst (G) is displayed only in the screen “Fans circuit 2”.

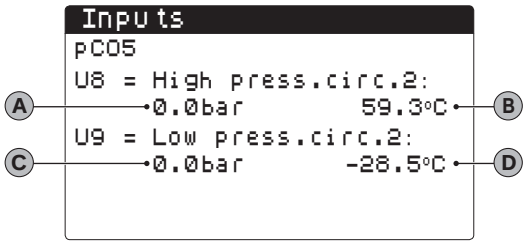
In / Out Menu - Defrost monitoring circuit 1 / circuit 2		
Display on the unit	**Index**	**Display/Parameter**
 ⚠ **WARNING: in the case the unit has two circuits this screen is repeated and the heading of (A) changed to C2, and each screen will provide data for the relevant circuit.**	A	**Defrost circuit:** shows which circuit the values refer to, if a second circuit is present, and provides a second screen for the second circuit: • Defrost C1: data relating to circuit 1 • Defrost C2: data relating to circuit 2
	B	**Defrost information:** provides status information on the defrost, which can be: • DISABLED: defrost disabled • BYPASS: bypass phase after the compressor start • DECREASING CALCULATION: phase calculating the decrease of pressure • AWAITING CYCLE INVERSION: system in pause before cycle inversion • START DEFROST: defrost in start phase • DEFROSTING: defrost cycle • END DEFROST: end of the defrost cycle • FIRST DEFROST: shows the first defrost phase after a power loss
	C	**Additional defrost information:** provides additional status information on the defrost: • HIGH EXTERNAL AIR TEMPERATURE: the external air temperature is above the level for enabling defrost • CIRCUIT OFF: all the compressors of the circuit are off; defrost is disabled • LP ABOVE LIMIT: the low pressure is above the level to enable defrost • MINIMUM TIME BETWEEN DEFROST: defrost is disabled during the period of minimum time between defrosts • START CP: compressor just started; await the bypass time before calculating the pressure decrease • 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 defrost to overcome the low pressure limit • START FOR DELTA P: start of defrost to overcome the decreasing value of low pressure • TEMP. LIQUID OK: the liquid temperature has overcome the limit to define the end of defrost • MINIMUM DEFROST TIME: defrost continuous until the minimum time is exceeded even if the exit conditions are met • 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 DGT: defrost is activated due to the level of the discharge gas temperature exceeding the limit • FORCED: in the case the fans are common to both circuits this circuit has been forced into defrost due to defrost of the other circuit, even if not required
	D	**Defrost time:** the value can indicate the maximum time before completing defrost (in the event the normal levels for completion have not been met), or the minimum defrost cycle time (in the event the “TEMP. LIQUID OK” message is displayed), to exit defrost
	E	**Low average pressure:** shows the average low pressure in the last minute
	F	**Delta pressure:** shows the accumulated delta pressure to determine activation of defrost
	G	**Liquid temperature:** shows the liquid temperature to determine exit of the defrost cycle

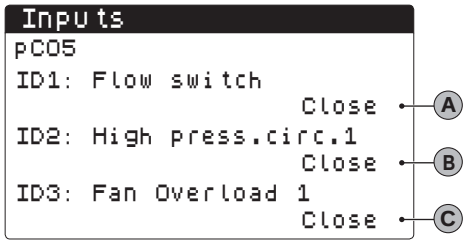
In / Out Menu - Analogue input monitoring (1)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Analogue input U1:** shows the heat exchanger inlet water temperature
	B	**Analogue input U2:** shows the heat exchanger outlet temperature
	C	**Analogue input U3:** shows the external air temperature

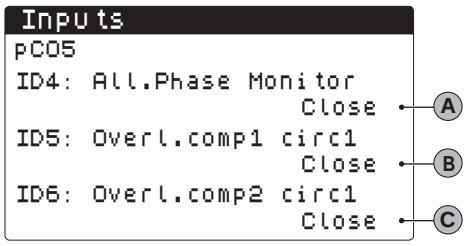
In / Out Menu - Analogue input monitoring (2)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Analogue input U4:** shows the discharge gas temperature of circuit 1

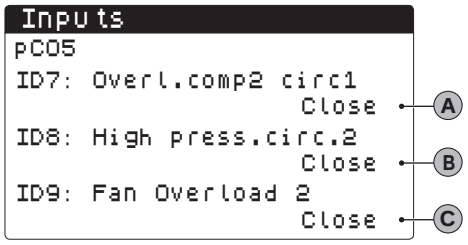
In / Out Menu - Analogue input monitoring (3)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Analogue input U5:** shows the high pressure transducer value read for circuit 1
	B	**Conversion HP temperature:** this is the conversion value into temperature from the pressure read by the high pressure transducer of circuit 1
	C	**Analogue input U6:** shows the low pressure transducer value read for circuit 1
	D	**Conversion LP temperature:** this is the conversion value into temperature from the pressure read by the low pressure transducer for circuit 1

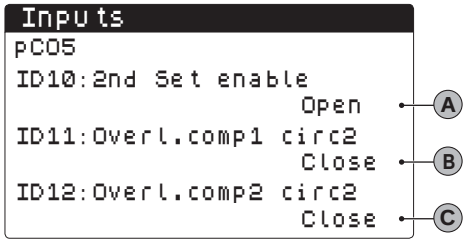
In / Out Menu - Analogue input monitoring (4) (only on units with two circuits)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Analogue input U7:** shows the discharge gas temperature of circuit 2

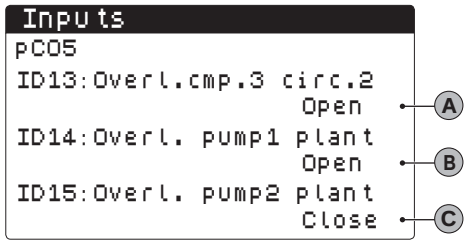
In / Out Menu - Analogue input monitoring (5) (only on units with two circuits)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Analogue input U8:** shows the high pressure transducer value read for circuit 2
	B	**Conversion HP temperature:** this is the conversion value into temperature from the pressure read by the high pressure transducer of circuit 2
	C	**Analogue input U9:** shows the low pressure transducer value read for circuit 2
	D	**Conversion LP temperature:** this is the conversion value into temperature from the pressure read by the low pressure transducer for circuit 2

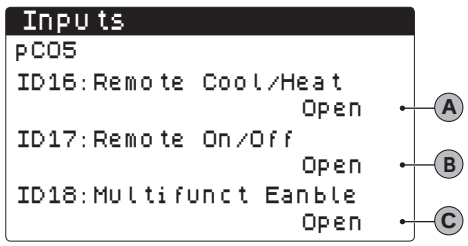
In / Out Menu - Digital input monitoring (1)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Digital input ID1:** shows the binary status of the input read from the flow switch of the evaporator, which are: • OPEN: flow switch alarm • CLOSED: normal operation
	B	**Digital input ID2:** shows the binary status of the input read from the high pressure pressostat of circuit 1, which are: • OPEN: high pressure pressostat alarm • CLOSED: normal operation
	C	**Digital input ID3:** shows the binary status of the input relating to the circuit breaker of the fans on circuit 1, which can be: • OPEN: circuit breaker alarm • CLOSED: normal operation

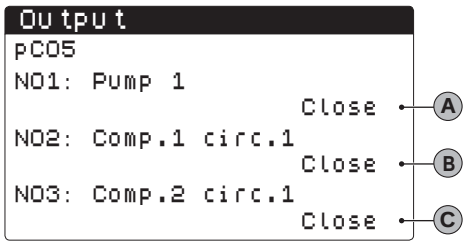
In / Out Menu - Digital input monitoring (2)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Digital input ID4:** shows the binary status read from the input of the phase control device, which can be: • OPEN: phase control device in alarm • CLOSED: normal operation
	B	**Digital input ID5:** shows the binary status of the input relating to the circuit breaker of compressor 1 on circuit 1, which can be: • OPEN: circuit breaker alarm • CLOSED: normal operation
	C	**Digital input ID6:** shows the binary status of the input relating to the circuit breaker of compressor 2 on circuit 1, which can be: • OPEN: circuit breaker alarm • CLOSED: normal operation

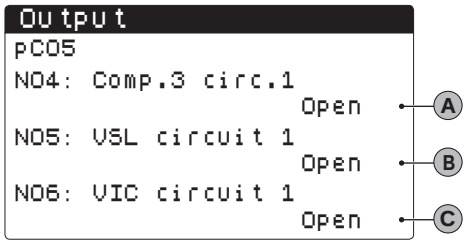
In / Out Menu - Digital input monitoring (3)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Digital input ID7:** shows the binary status of the input relating to the circuit breaker of compressor 3 on circuit 1, which can be: • OPEN: circuit breaker alarm • CLOSED: normal operation
	B	**Digital input ID8:** shows the binary status of the input read from the high pressure pressostat of circuit 2 (if provided), which are: • OPEN: high pressure pressostat in alarm • CLOSED: normal operation
	C	**Digital input ID9:** shows the binary status of the input relating to the circuit breaker of the fans on circuit 2 (if provided), which can be: • OPEN: circuit breaker alarm • CLOSED: normal operation

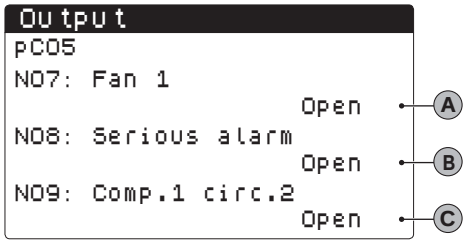
In / Out Menu - Digital input monitoring (4)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Digital input ID10:** shows the binary status of the input relating to the secondary setpoint function, which are: • OPEN: secondary setpoint not active • CLOSED: secondary setpoint active NOTE: To control this function the installer must use the digital input ID10 and provide a volt free contact for the activation of the secondary setpoint
	B	**Digital input ID8:** shows the binary status of the input relating to the circuit breaker of compressor 1 on circuit 2, which can be: • OPEN: circuit breaker alarm • CLOSED: normal operation
	C	**Digital input ID9:** shows the binary status of the input relating to the circuit breaker of compressor 2 on circuit 2, which can be: • OPEN: circuit breaker alarm • CLOSED: normal operation

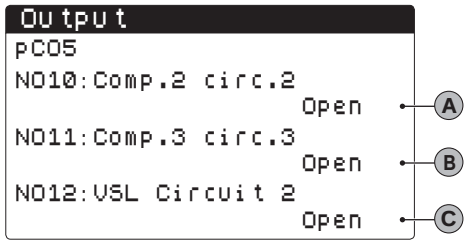
In / Out Menu - Digital input monitoring (5)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Digital input ID13:** shows the binary status of the input relating to the circuit breaker of compressor 3 on circuit 2, which can be: • OPEN: circuit breaker alarm • CLOSED: normal operation
	B	**Digital input ID14:** shows the binary status of the input relating to the circuit breaker of pump 1, which can be: • OPEN: circuit breaker alarm • CLOSED: normal operation
	C	**Digital input ID15:** shows the binary status of the input relating to the circuit breaker of pump 2 (visible if present), which can be: • OPEN: circuit breaker alarm • CLOSED: normal operation

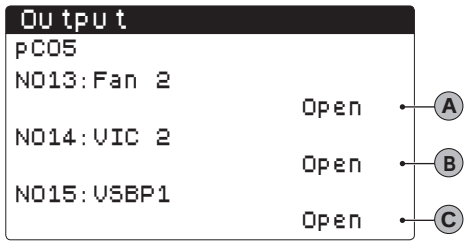
In / Out Menu - Digital input monitoring (6)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Digital input ID16:** shows the binary status of the input relating to the change of season function, which can be: • OPEN: remote season change not active • CLOSED: remote season change active NOTE: To control this function the installer must use the digital input ID16 and provide a volt free contact for the activation of the remote season changeover
	B	**Digital input ID17:** shows the binary status of the input relating to the remote ON/OFF function, which can be: • OPEN: remote ON/OFF remote not active • CLOSED: remote ON/OFF active NOTE: To control this function the installer must use the digital input ID17 and provide a volt free contact for the activation of the remote ON/OFF
	C	**Digital input ID18:** shows the binary status of the input relating to the multi-function U10 (this function is detailed in the Installer menu), which can be: • OPEN: multi-function contact not enabled • CLOSED: multi-function contact enabled NOTE: To control this function the installer must use the digital input ID18 and provide a volt free contact for the activation of the multi-function

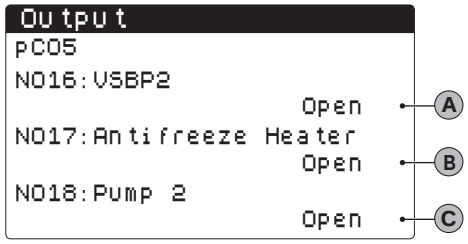
In / Out Menu - Digital output monitoring (1)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Digital output NO1:** shows the binary status of the output relating to pump 1, which can be: • OPEN: pump 1 not active • CLOSED: pump 1 active
	B	**Digital output NO2:** shows the binary status of the output relating to compressor 1 of circuit 1, which can be: • OPEN: compressor not active • CLOSED: compressor active
	C	**Digital output NO3:** shows the binary status of the output relating to compressor 2 of circuit 1, which can be: • OPEN: compressor not active • CLOSED: compressor active

In / Out Menu - Digital output monitoring (2)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Digital output NO4:** shows the binary status of the output relating to compressor 3 of circuit 1, which can be: • OPEN: compressor not active • CLOSED: compressor active
	B	**Digital output NO5:** shows the binary status of the output to the liquid solenoid valve of circuit 1, which can be: • OPEN: valve not active • CLOSED: valve active
	C	**Digital output NO6:** shows the binary status of the output to the reversing valve of circuit 1 (in heat pump models), which can be: • OPEN: valve not active • CLOSED: valve active

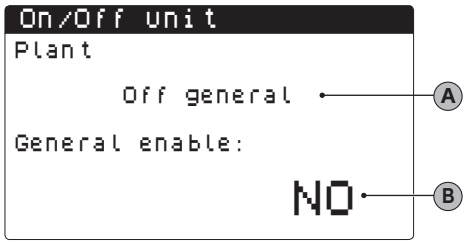
In / Out Menu - Digital output monitoring (3)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Digital output NO7:** shows the binary status of the output to the fans of circuit 1, which can be: • OPEN: fans not active; • CLOSED: fans active
	B	**Digital output NO8:** shows the binary status of the output generated by a serious alarm, which can be: • OPEN: no alarm present • CLOSED: alarm present
	C	**Digital output NO9:** shows the binary status of the output relating to compressor 1 of circuit 2 (visible if present), which can be: • OPEN: compressor not active • CLOSED: compressor active

In / Out Menu - Digital output monitoring (4)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Digital output NO10:** shows the binary status of the output relating to compressor 2 of circuit 2 (visible if present), which can be: • OPEN: compressor not active • CLOSED: compressor active
	B	**Digital output NO11:** shows the binary status of the output relating to compressor 3 of circuit 2 (visible if present), which can be: • OPEN: compressor not active • CLOSED: compressor active
	C	**Digital input NO12:** shows the binary status of the output to the liquid solenoid valve of circuit 2 (visible if present), which can be: • OPEN: valve not active • CLOSED: valve active

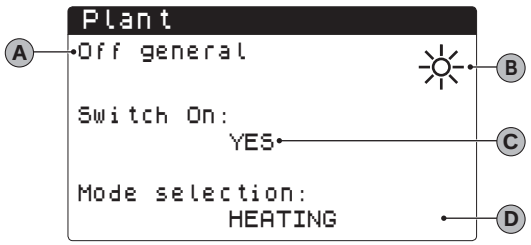
In / Out Menu - Digital output monitoring (5)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Digital output NO13:** shows the binary status of the output to the fans of circuit 2 (visible if present), which can be: • OPEN: fans not active • CLOSED: fans active
	B	**Digital output NO14:** shows the binary status of the output to the reversing valve of circuit 2 (visible if second circuit present in heat pump models), which can be: • OPEN: valve not active • CLOSED: valve active
	C	**Digital input NO15:** shows the binary status of the output to the bypass solenoid valve of circuit 1 (in heat pump models), which can be: • OPEN: valve not active • CLOSED: valve active

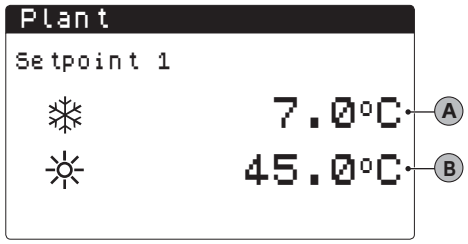
In / Out Menu - Digital output monitoring (6)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Digital output NO16:** shows the binary status of the output to the bypass solenoid valve of circuit 2 (visible if second circuit present in heat pump models), which can be: • OPEN: valve not active • CLOSED: valve active
	B	**Digital output NO17:** shows the binary status of the output to the anti-freeze heater, which can be: • OPEN: heater not active • CLOSED: heater active
	C	**Digital input NO18:** shows the binary status of the output relating to pump 2 (visible if present), which can be: • OPEN: pump 2 not active • CLOSED: pump 2 active

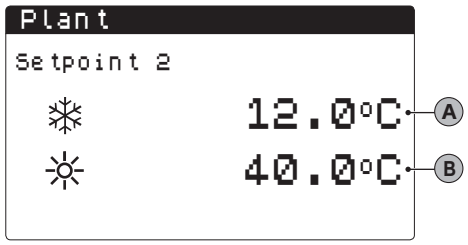
ON / OFF Menu

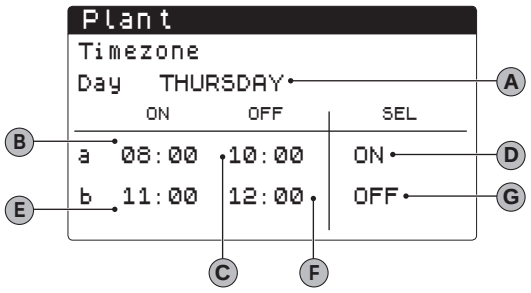
ON / OFF Menu - Switching unit on or off		
Display on the unit	**Index**	**Display/Parameter**
	A	**Current status:** shows the current status of the unit: • ENABLED: unit on • OFF GENERAL: unit in standby • OFF FOR ALARM: unit in standby due to an alarm • OFF BY BMS: unit in standby, disabled by the BMS • OFF BY CLOCK: unit in standby, disabled by time-clock settings • OFF BY DIG. IN: unit in standby, disabled by digital input ID8 • OFF BY DISPLAY: unit in standby, disabled from the terminal • ANTI-ICING: unit forced on to avoid icing
User modifiable parameters	B	**Switching unit on or off:** by modifying this parameter it is possible to switch the unit on or off: • YES: unit on • NO: unit off

SYSTEM Menu

SYSTEM Menu - Selecting the operating mode		
Display on the unit	**Index**	**Display/Parameter**
	A	**Current status:** shows the current status of the unit: • ENABLED: unit on • OFF GENERAL: unit in standby • OFF FOR ALARM: unit in standby due to an alarm • OFF BY BMS: unit in standby, disabled by the BMS • OFF BY CLOCK: unit in standby, disabled by time-clock settings • OFF BY DIG. IN: unit in standby, disabled by digital input ID8 • OFF BY DISPLAY: unit in standby, disabled from the terminal • ANTI-ICING: unit forced on to avoid icing
User modifiable parameters	B	**Active season:** the symbol shows the current operating mode: • (☼): heating mode • (❄): cooling mode
	C	**Unit enabled:** shows if the unit is enabled for operation, which can be: • OFF: system not enabled for operation • ON: system enabled for operation • ON WITH SET2: system enabled for operation with secondary setpoint • TIME-CLOCK: system enabled to operate under time-clock programme
	D	**Selecting the operating mode:** by modifying this parameter it is possible to select the operating mode of the unit: • COOLING: unit produces chilled water • HEATING: unit unit produces hot water • BY EXT. TEMP.: operating mode decided automatically by the external air temperature • BY DIG. IN: operating mode decided by digital input ID16 (input closed = heating) • BY SUPERV.: operating mode decided by BMS • BY CALENDAR: operating mode decided automatically based on the season change-over date in the calender

SYSTEM Menu - Setting main setpoints		
Display on the unit	**Index**	**Display/Parameter**
 **User modifiable parameters**	A	**Main cooling setpoint:** shows the operating setpoint used for cooling mode
	B	**Main heating setpoint:** shows the operating setpoint used for heating mode

SYSTEM Menu - Setting secondary setpoints		
Display on the unit	**Index**	**Display/Parameter**
 **WARNING: 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.** **User modifiable parameters**	A	**Secondary cooling setpoint:** shows the secondary operating setpoint for cooling mode
	B	**Heating secondary setpoint:** shows the secondary operating setpoint for heating mode

SYSTEM Menu - Time-clock settings (A) and (B)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Day to set:** this shows the day for which the first two time-clock values (a) and (b) are programmed. This value can be any day of the week or a HOLIDAY day
	B	**Time-clock start (a):** shows the value of the start of the first time-clock
	C	**Time-clock stop (a):** shows the value of the stop of the first time-clock
	D	**Action associated with time-clock (a):** shows the action carried out with the first time-clock, which can be: • ON: unit enabled with main setpoint • SET2: unit enabled with secondary setpoint • OFF: unit in standby
	E	**Time-clock start (b):** shows the value of the start of the second time-clock
	F	**Time-clock stop (b):** shows the value of the stop of the second time-clock
	G	**Action associated with time-clock (b):** shows the action carried out with the first time-clock, which can be: • ON: unit enabled with main setpoint • SET2: unit enabled with secondary setpoint • OFF: unit in standby

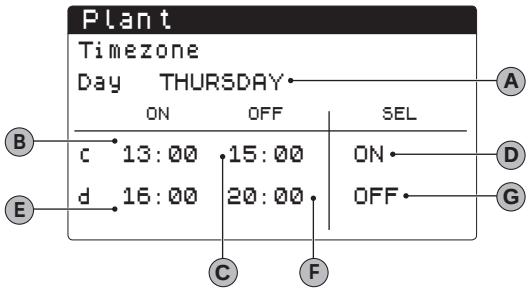
WARNING: All the screens for time-clock programming are only visible if activated in the main screen of the System menu (Enabling = TIME-CLOCK)

WARNING: The values selected for the time-clock (a) and (b) must follow logically:

B < C < E < F

NOTE: Outside of the four possible time-clock programmes the system will remain OFF

User modifiable parameters

SYSTEM Menu - Time-clock settings (C) and (D)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Day to set:** this shows the day for which the last two time-clock values (c) and (d) are programmed. This value can be any day of the week or a HOLIDAY day
	B	**Time-clock start (c):** shows the value of the start of the third time-clock
	C	**Time-clock stop (c):** shows the value of the stop of the third time-clock
	D	**Action associated with time-clock (c):** shows the action carried out with the first time-clock, which can be: • ON: unit enabled with main setpoint • SET2: unit enabled with secondary setpoint • OFF: unit in standby
	E	**Time-clock start (d):** shows the value of the start of the fourth time-clock
	F	**Time-clock stop (d):** shows the value of the stop of the fourth time-clock
	G	**Action associated with time-clock (d):** shows the action carried out with the first time-clock, which can be: • ON: unit enabled with main setpoint • SET2: unit enabled with secondary setpoint • OFF: unit in standby

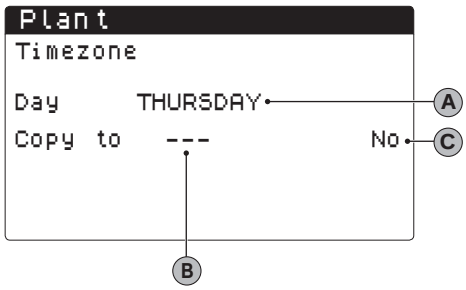
WARNING: All the screens for time-clock programming are only visible if activated in the main screen of the System menu (Enabling = TIME-CLOCK)

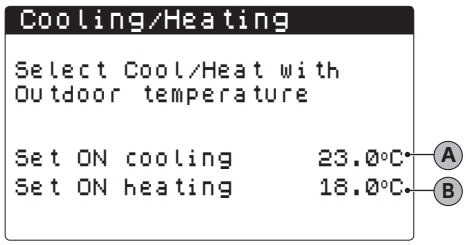
WARNING: The values selected for the time-clock (a) and (b) must follow logically:

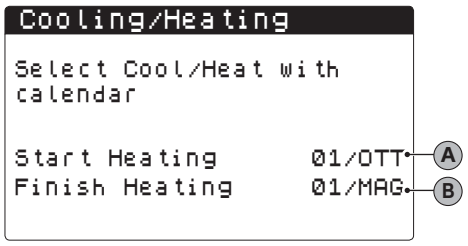
B < C < E < F

NOTE: Outside of the four possible time-clock programmes the system will remain OFF

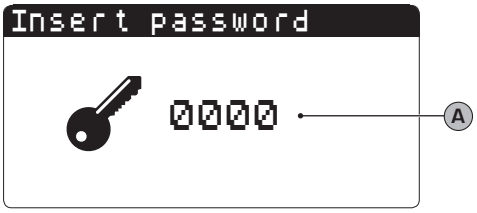
User modifiable parameters

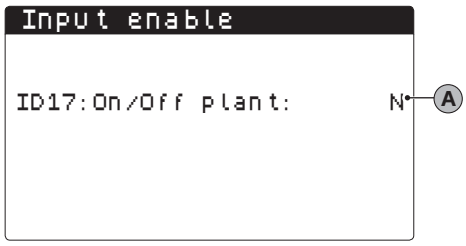
SYSTEM Menu - Copy time-clock settings function		
Display on the unit	**Index**	**Display/Parameter**
	A	**Day to copy from:** shows from which day the four time-clock programmes are to be copied
	B	**Day to copy to:** shows to which day to copy to the selected settings. The time-clock from the reference day can be copied to an individual day of the week, to all remaining days or only for holidays
	C	**Make copy:** by changing this value to requested copy from the reference day is made for the requested days
⚠ WARNING: All the screens for time-clock programming are only visible if activated in the main screen of the System menu (Enabling = TIME-CLOCK)		
User modifiable parameters		

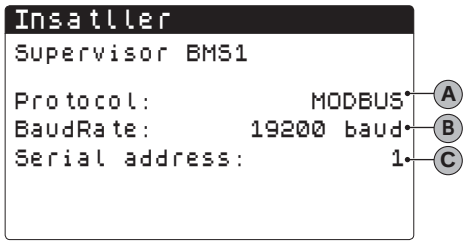
SYSTEM Menu - Setting change-over based on external temperature		
Display on the unit	**Index**	**Display/Parameter**
	A	**Temperature level for cooling:** shows the external air temperature value above which cooling mode is automatically activated
	B	**Temperature level for heating:** shows the external air temperature value below which heating mode is automatically activated
⚠ WARNING: 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.)		
User modifiable parameters		

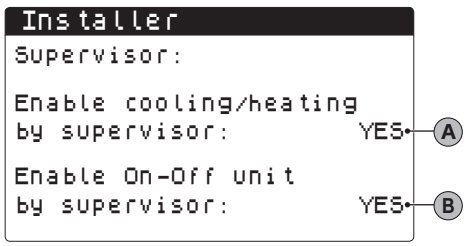
SYSTEM Menu - Setting change-over based on calender		
Display on the unit	**Index**	**Display/Parameter**
 ⚠ **WARNING: This screen for automatic control based on calender is only visible if activated in the main screen of the System menu (Selection mode = BY CALENDAR)** **User modifiable parameters**	A	**Date to activate heating mode:** shows the date after which the change is made from cooling mode to heating mode
	B	**Date to deactivate heating mode:** shows the date after which the change is made from heating mode to cooling mode

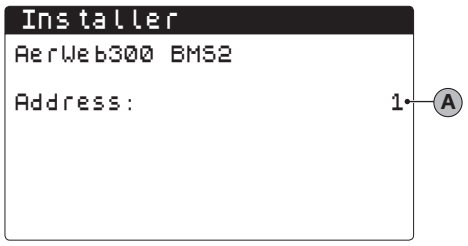
INSTALLER Menu(Password 0000)

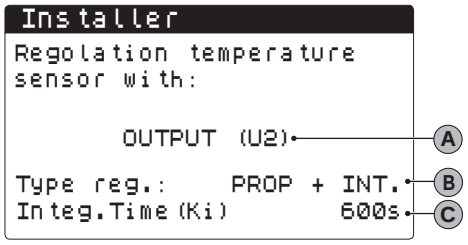
INSTALLER Menu- Insert password to access menus		
Display on the unit	**Index**	**Display/Parameter**
 **User modifiable parameters**	A	**Access password to menus:** the password to be used to access the Installer menus is the default value (0000)

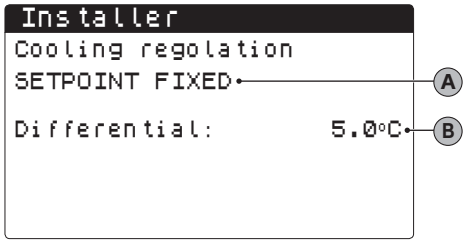
INSTALLER Menu- Enabling digital inputs ID3 and ID4		
Display on the unit	**Index**	**Display/Parameter**
 User modifiable parameters	A	**Enabling ID17:** shows if the digital input ID3 is enabled for the remote ON/OFF control function (ON = closed, OFF = open)

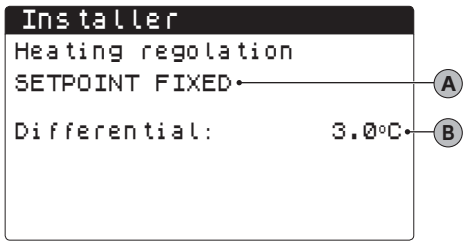
INSTALLER Menu- Addressing BMS supervisor system		
Display on the unit	**Index**	**Display/Parameter**
 User modifiable parameters	A	**Select protocol:** shows which protocol is used to communicate with the BMS, with the supported protocols being: • MODBUS: protocol Modbus/RS485 • CAREL: protocol by expansion • pCOWEB: protocol by expansion pCOWEB • LON: protocoll by expansion LON
	B	**Transmission speed:** shows the speed of the serial communication
	C	**Address:** shows the address assigned to which communication will be made with the BMS supervisor

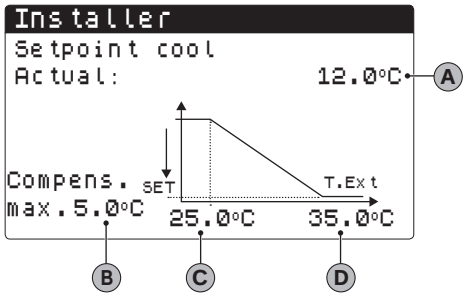
INSTALLER Menu- Enabling primary functions by BMS		
Display on the unit	**Index**	**Display/Parameter**
 User modifiable parameters	A	**Enable change-over by BMS:** shows if the remote change-over by the BMS is enabled
	B	**Enable ON/OFF by BMS:** shows if the remote starting and stopping of the unit by the BMS is enabled

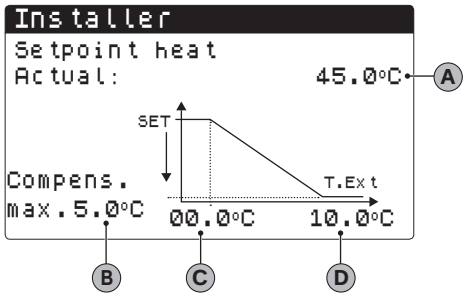
INSTALLER Menu- Addressing secondary supervisor system (not opto-isolated)		
Display on the unit	**Index**	**Display/Parameter**
 **User modifiable parameters**	A	**Address:** shows the value of the address for the secondary supervisor system for communications (this serial interface is not opto-isolated so the connection distance permitted is less than the main serial interface) **NOTE: The use of the second serial link is intended for transmission via the web (AerWeb300), although the serial link can be to a second supervisor system in addition to the main one (BMS1)**

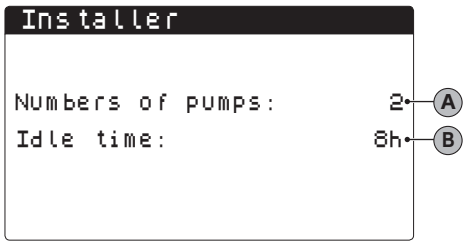
INSTALLER Menu- Selecting control for water production		
Display on the unit	**Index**	**Display/Parameter**
 **User modifiable parameters**	A	**Control sensor:** shows which sensor the system bases the control of water produced, which can be: • OUTLET(U2): the sensor used to control the production of water is that leaving the heat exchanger • INLET(U1): the sensor used to control the production of water is that entering the heat exchanger • COMMON OUTLET SENSOR (U3 uPC): the sensor used to control the production of water is the common leaving sensor in the event there are two heat exchangers **WARNING: Selecting the control based on the entering temperature means that the correct setting for the operating setpoints must consider the addition or subtraction (based on cooling or heating mode) of the differential temperature to the operating setpoint**
	B	**Type of control:** shows the logic used for the control, which can be: • PROP+INT: applies proportional and integral control • PROP: applies proportional control only
	C	**Integral time:** shows the integral time to add to the proportional control (in the event the type of control selection is proportional and integral)

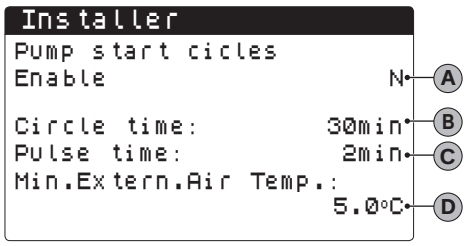
INSTALLER Menu- Setting parameters for cooling control		
Display on the unit	**Index**	**Display/Parameter**
 **User modifiable parameters**	A	**Type of setpoint:** shows what type of logic is used for the control of the operating setpoint, which can be: • FIXED SETPOINT: the system will use as the operating setpoint the values set by the user in the System menu screen (main and secondary setpoints) • AMBIENT CURVE: the operating setpoint is calculated automatically based on the selected ambient curve
	B	**Differential:** shows the differential applied between the water inlet and outlet, where such value depends on the flow rate the system operates at

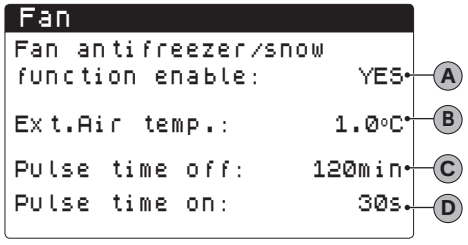
INSTALLER Menu- Setting parameters for heating control		
Display on the unit	**Index**	**Display/Parameter**
	A	**Type of setpoint:** shows what type of logic is used for the control of the operating setpoint, which can be: • FIXED SETPOINT: the system will use as the operating setpoint the values set by the user in the System menu screen (main and secondary setpoints) • AMBIENT CURVE: the operating setpoint is calculated automatically based on the selected ambient curve
	B	**Differential:** shows the differential applied between the water inlet and outlet, where such value depends on the flow rate the system operates at
User modifiable parameters		

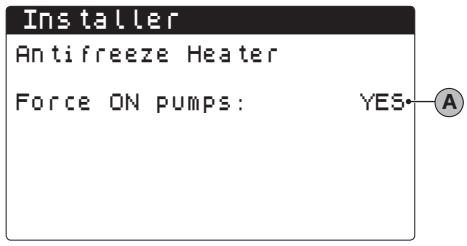
INSTALLER Menu- Setting ambient curve parameters for cooling		
Display on the unit	**Index**	**Display/Parameter**
	A	**Actual setpoint:** shows the current setpoint from the ambient curve
	B	**Maximum differential on setpoint compensation:** shows the maximum change to apply to the original setpoint, when reaching the external temperature specified at point (C)
	C	**Minimum external air temperature limit**: shows the external air temperature at which the maximum differential as specified at point (B) will be applied to the original setpoint
	D	**Maximum external air temperature limit:** shows the external air temperature at which the original setpoint is applied. Below this temperature the setpoint is proportionally increased up to the value specified in point (C), where the setpoint will be compensated by the maximum differential specified in point (B)
User modifiable parameters		

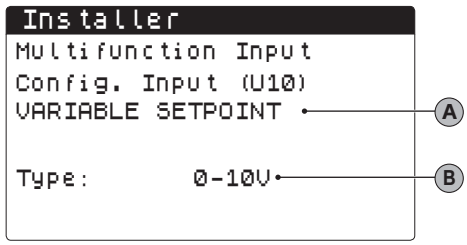
INSTALLER Menu- Setting ambient curve parameters for heating		
Display on the unit	**Index**	**Display/Parameter**
	A	**Actual setpoint:** shows the current setpoint from the ambient curve
	B	**Maximum differential on setpoint compensation:** shows the maximum change to apply to the original setpoint, when reaching the external temperature specified at point (D)
	C	**Minimum external air temperature limit:** shows the external air temperature at which the original setpoint is applied. Above this temperature the setpoint is proportionally decreased up to the value specified in point (D), where the setpoint will be compensated by the maximum differential specified in point (B)
	D	**Maximum external air temperature limit**: shows the external air temperature at which the maximum differential as specified at point (B) will be applied to the original setpoint
User modifiable parameters		

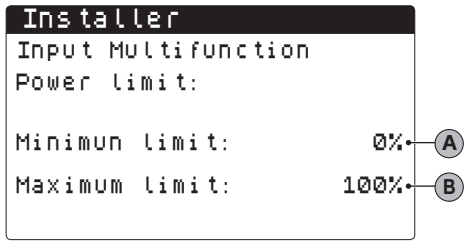
INSTALLER Menu- Configuring pumps		
Display on the unit	**Index**	**Display/Parameter**
	A	**Number of pumps:** shows the number of pumps controlled by the unit **WARNING: Modifying this parameter could result in the pumps installed on the unit not being operated**
	B	**Inactivity time:** shows the inactivity time for one pump after which it will be activated (in the event that there are several pumps avoids that they stand still for an excessive time)
User modifiable parameters		

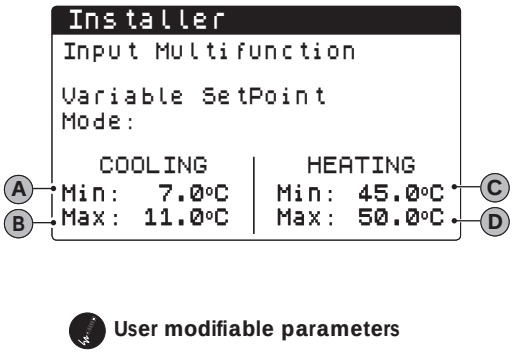
INSTALLER Menu- Setting pump anti-freeze function		
Display on the unit	**Index**	**Display/Parameter**
	A	**Enabling anti-freeze function:** shows whether to enable the anti-freeze cycle function which activates the pump
	B	**Time cycle:** shows the time interval between pump activations
	C	**Pump activation time:** shows the time period that the pump will be activated for the anti-freeze function
User modifiable parameters	D	**External air temperature limit:** shows the temperature below which the anti-freeze cycle is activated (if enabled)

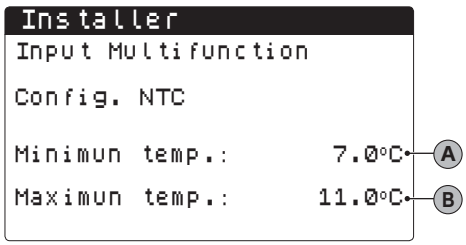
INSTALLER Menu- Setting fans anti-icing function		
Display on the unit	**Index**	**Display/Parameter**
	A	**Enabling anti-icing function:** shows whether to enable the anti-icing function for the fans
	B	**External air temperature limit:** shows the temperature below which the anti-icing cycle is activated (if enabled)
	C	**Time off:** shows the time interval between the periods of activation for the fans during the anti-icing function
User modifiable parameters	D	**Fan activation time:** shows the time period that the fans will be activated for the anti-icing function

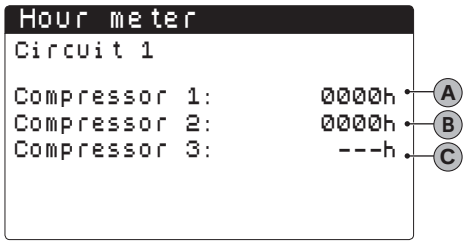
INSTALLER Menu- Setting pump operation during use of anti-freeze heaters		
Display on the unit	**Index**	**Display/Parameter**
 **User modifiable parameters**	A	**Pump enable:** shows whether the pump is activated during the operation of the electric anti-freeze heaters

INSTALLER Menu- Setting multi-function input		
Display on the unit	**Index**	**Display/Parameter**
 **User modifiable parameters**	A	**Multi-function input:** shows which function is assigned to the multi-function input U10, which can be: • NOT PRESENT: multi-function input disabled • CAPACITY LIMIT: the input U10 is used to limit the capacity of the unit in a manner proportional to the signal applied at the input U10 (the configuration of the capacity range controlled is available in the next screen, if this option is activated) • VARIABLE SETPOINT: the input U10 is used to vary the operating setpoint in a manner proportional to the signal applied at the input U10 (the configuration of the variation to the setpoint range is available in the next screen, if this option is activated) **WARNING: If the multi-function input is enabled then the status of the input to U10 will shown in the In/Out menu**
	B	**Type:** shows the type of signal used for the multi-function input, which can be: • 0-10V: input signal 0-10V • NTC: input signal NTC • 4-20mA: input signal 4-20mA

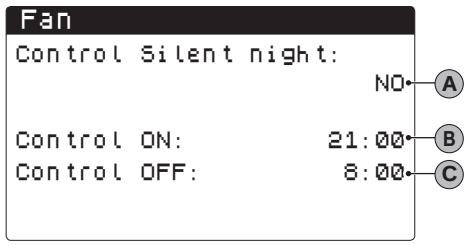
INSTALLER Menu- Configuration of capacity limit from multi-function input (if enabled)		
Display on the unit	**Index**	**Display/Parameter**
 **User modifiable parameters**	A	**Minimum capacity limit:** shows the minimum capacity limit as a function of the input signal
	B	**Maximum capacity limit:** shows the maximum capacity limit as a function of the input signal

INSTALLER Menu- Configuration of variable setpoint from multi-function input (if enabled)		
Display on the unit	**Index**	**Display/Parameter**
 **User modifiable parameters**	A	**Minimum cooling setpoint:** shows the minimum setpoint as a function of the input signal (on input U10)
	B	**Maximum heating setpoint:** shows the maximum setpoint as a function of the input signal (on input U10)
	C	**Minimum heating setpoint:** shows the minimum setpoint as a function of the input signal (on input U10)
	D	**Maximum heating setpoint:** shows the maximum setpoint as a function of the input signal (on input U10)

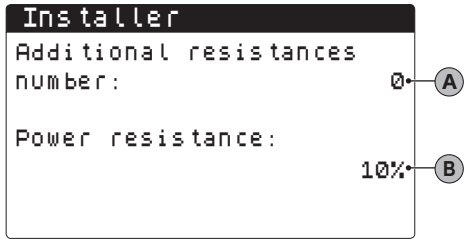
INSTALLER Menu- Configuration of NTC signal from multi-function input (if enabled)		
Display on the unit	**Index**	**Display/Parameter**
 **User modifiable parameters**	A	**Minimum NTC signal:** Shows the minimum temperature which corresponds to the to the minimum value for the function selected to the multi-function input (capacity limitation or variable setpoint)
	B	**Maximum NTC signal:** Shows the maximum temperature which corresponds to the to the maximum value for the function selected to the multi-function input (capacity limitation or variable setpoint)

INSTALLER Menu- Monitoring compressor hour counter circuit 1		
Display on the unit	**Index**	**Display/Parameter**
	A	**Compressor 1 hour counter:** shows the number of running hours for compressor 1 on circuit 1
	B	**Compressor 2 hour counter:** shows the number of running hours for compressor 2 on circuit 1 (if present)
	C	**Compressor 3 hour counter:** shows the number of running hours for compressor 3 on circuit 1 (if present)

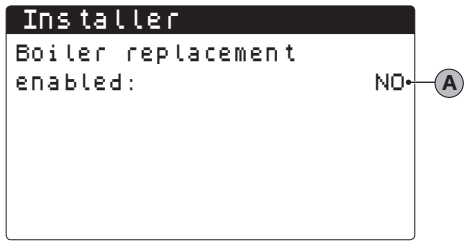
INSTALLER Menu - Operation Silent Night Set

Display on the unit	Index	Display/Parameter
 User modifiable parameters	A	**Enable Silent Night operation:** This value indicates whether to enable night mode, this function enables operation muted during the time period specified in the following parameters
	B	**Start time slot night mode function:** if the operation is muted nocturnal active, this parameter indicates the time after which this function will be activated
	C	**End time slot night mode function:** if the operation is muted nocturnal active, this parameter indicates the time after which this function will be disabled

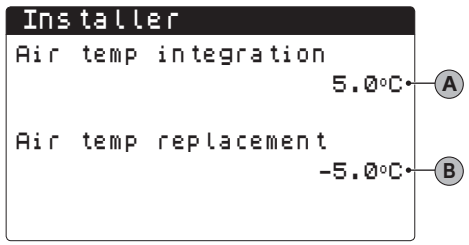
INSTALLER Menu - Management of electrical heaters

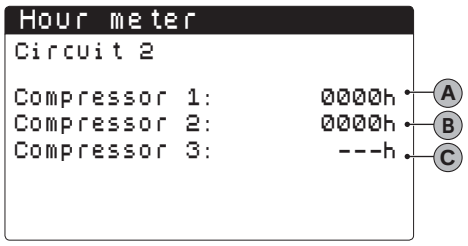
Display on the unit	Index	Display/Parameter
 User modifiable parameters	A	**Number electrical resistors installed:** Indicates this value if the number of electric heaters installed (minimum zero, maximum three)
	B	**Percentage of the power system:** This value specifies the percentage power of the individual resistance compared to the total power of the unit; **WARNING: In order to allow proper management of electrical resistances in the system, all resistors must have the same power, also please note that the maximum power of the single resistor, managed by the system is equivalent to 50% of the rated power of the unit**

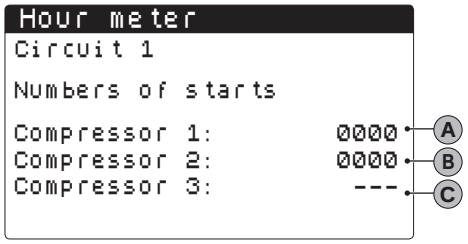
INSTALLER Menu - Enabling boiler

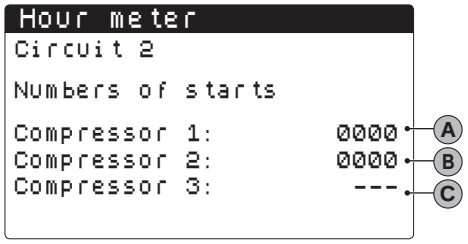
Display on the unit	Index	Display/Parameter
 User modifiable parameters	A	**Enable boiler replacement:** This parameter specifies whether to enable the boiler when the outside temperature falls below the value of “replacement” specified in the next window, or in the case where the heat pump is in “full alarm”

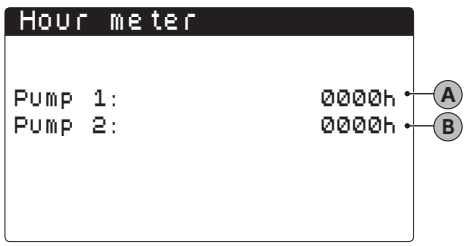
INSTALLER Menu - Set temperature of integration and substitution

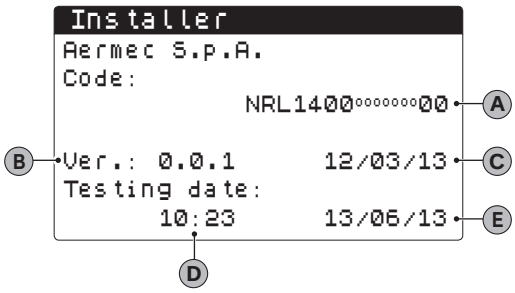
Display on the unit	Index	Display/Parameter
 User modifiable parameters	A	**Temperature integration:** this value indicates the outdoor temperature above which the heat pump function without the aid of electrical resistors, while if the outside temperature is lower than this value, but still higher than all atemperatura replacement, the heat pump operates TOGETHER resistances
	B	**Temperature integration:** this value indicates the outdoor temperature above which the heat pump function without the aid of electrical resistors, while if the outside temperature is lower than this value, but still higher than all atemperatura replacement, the heat pump operates TOGETHER resistances.

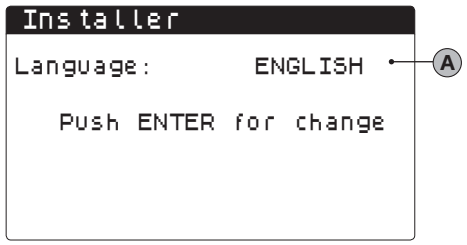
INSTALLER Menu- Monitoring compressor hour counter circuit 2 (if present)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Compressor 1 hour counter:** shows the number of running hours for compressor 1 on circuit 2
	B	**Compressor 2 hour counter:** shows the number of running hours for compressor 2 on circuit 2 (if present)
	C	**Compressor 3 hour counter:** shows the number of running hours for compressor 3 on circuit 2 (if present)

INSTALLER Menu- Monitoring number of compressor starts circuit 1		
Display on the unit	**Index**	**Display/Parameter**
	A	**Compressor 1 number of starts:** shows the number of starts for compressor 1 on circuit 1
	B	**Compressor 2 number of starts:** shows the number of starts for compressor 2 on circuit 1
	C	**Compressor 3 number of starts:** shows the number of starts for compressor 3 on circuit 1

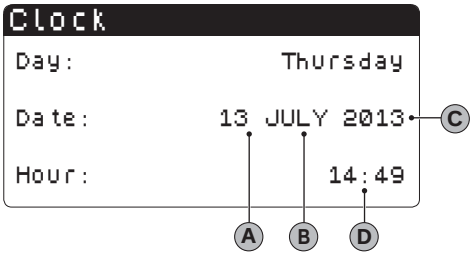
INSTALLER Menu- Monitoring number of compressor starts circuit 2 (if present)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Compressor 1 number of starts:** shows the number of starts for compressor 1 on circuit 2
	B	**Compressor 2 number of starts:** shows the number of starts for compressor 1 on circuit 2
	C	**Compressor 3 number of starts:** shows the number of starts for compressor 3 on circuit 2

INSTALLER Menu- Monitoring pump operating hours		
Display on the unit	**Index**	**Display/Parameter**
	A	**Pump 1 hour counter:** shows the number of running hours for pump 1
	B	**Pump 2 hour counter:** shows the number of running hours for pump 2 (if present)

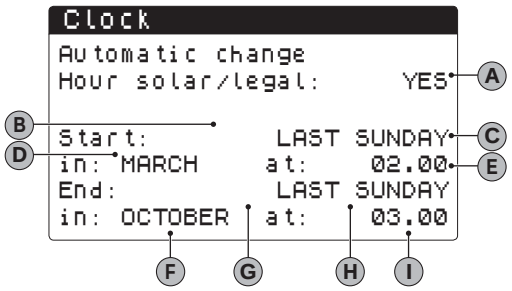
INSTALLER Menu- Monitoring unit configurator and test info		
Display on the unit	**Index**	**Display/Parameter**
	A	**Configuration code:** shows the commercial code which identifies the unit and configuration
	B	**Software version:** shows the software version installed on the unit
	C	**Software version date:** shows the date of the software installed on the unit
	D	**Test time:** shows the time the unit was tested in the factory
	E	**Test date:** shows the date the unit was tested in the factory

INSTALLER Menu- Monitoring unit configurator and test info		
Display on the unit	**Index**	**Display/Parameter**
	A	**System language:** shows the system language in use, which can be modified by following the instructions on the screen (ENTER to modify the language)

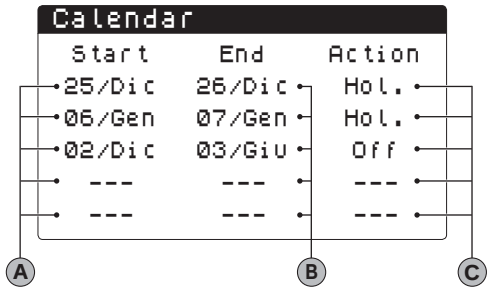
CLOCK Menu

CLOCK Menu - Setting system date and time		
Display on the unit	**Index**	**Display/Parameter**
	A	**System day: s**hows the day of the system
	B	**System month:** shows the month of the system
	C	**System year:** shows the year of the system
	D	**System clock:** shows the time of the system

User modifiable parameters

CLOCK Menu - Setting automatic time change (summer/winter time)		
Display on the unit	**Index**	**Display/Parameter**
	A	**Enable automatic control:** shows if the time change between summer and winter time is carried out automatically
	B	**Time change week:** shows which week of the month that the time change is made
	C	**Time change day:** shows which day of the week that the time change is made
	D	**Time change month:** shows which month the time change is made
	E	**Time change hour:** shows what hour that the time change is made
	F	**Return time change week:** shows which week of the month that the return time change is made
	G	**Return time change day:** shows which day of the week that the return time change is made
	H	**Return time change month:** shows which month the return time change is made
	I	**Return time change hour:** shows what hour that the return time change is made

User modifiable parameters

CLOCK Menu - Setting holidays		
Display on the unit	**Index**	**Display/Parameter**
	A	**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
	B	**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
	C	**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

User modifiable parameters

Alarm summary table

The unit provides a display of the possible faults, announced by the flashing of the alarm key with the bell symbol located on the left of the display. Pressing the bell key displays the alarm. The reset of the alarm can be automatic, manual or semi-automatic on the basis of the type and severity of the alarm. To reset the alarm message it is necessary to press the bell key again, but this does not reset the cause of the alarm, but only acknowledges it.

The following table lists the faults that can be generated by the unit and a brief explanation of the possible cause.

Alarm reset types:

Manual reset:
Unit is reset manually by removing and re-applying power.

Automatic reset:
The unit is reset automatically

Semi-automatic reset:
The unit is reset semi-automatically if the alarm is repeated a maximum of three times consecutively, and after a further alarm requires manual reset.

ALARM summary table			
Code	**Alarm description**	**Reset**	**Note**
AL01	Clock battery faulty or not connected		---
AL02	Expansion memory damaged		---
AL03	Phase monitor		---
AL04	---	---	---
AL05	High pressure sensor circuit 1 faulty or not connected		Analogue input U5
AL06	High pressure sensor circuit 2 faulty or not connected		Analogue input U8
AL07	Low pressure sensor circuit 1 faulty or not connected		Analogue input U6
AL08	Low pressure sensor circuit 2 faulty or not connected		Analogue input U9
AL09	Inlet water temp sensor evap.1 faulty or not connected		Analogue input U1
AL10	Outlet water temp sensor evap.1 faulty or not connected		Analogue input U2
AL11	Outlet water temp sensor evap.com. faulty or not connected		---
AL12	Inlet water temp sensor recovery faulty or not connected		---
AL13	Outlet water temp sensor recovery1 faulty or not connected		---
AL14	Outlet water temp sensor recovery2 faulty or not connected		---
AL15	Outlet water temp sensor recovery common faulty or not connected		---
AL16	External temperature sensor faulty or not connected		---

AL17	Liquid temperature sensor circuit 1 faulty or not connected		---
AL18	Liquid temperature sensor circuit 2 faulty or not connected		---
AL23	Circuit breaker compressor 1 circuit 1		---
AL24	Thermal alarm system pump 1		---
AL25	Thermal alarm system pump 2		---
AL26	Thermal alarm heat recovery pump 1		---
AL27	Thermal alarm heat recovery pump 2		---
AL28	Fans circuit breaker circuit 1		---
AL29	Fans circuit breaker circuit 2		---
AL31	Low pressure sensor circuit 1		---
AL32	High pressure pressostat circuit 1		---
AL33	High pressure sensor circuit 1		---
AL34	Circuit 1 low pressure sensor (serious)		---
AL35	Circuit 2 low pressure sensor (serious)		---
AL38	Loss of evaporator water flow		---
AL39	Loss of heat recovery water flow		---
AL40	Anti-freeze alarm system inlet/outlet temperature		---
AL41	Anti-freeze alarm system common outlet temperature		---
AL42	Anti-freeze alarm heat recovery 1 inlet/outlet temperature		---
AL43	Anti-freeze alarm heat recovery 2 outlet temperature		---
AL44	Anti-freeze alarm heat recovery common outlet temperature		---
AL45	Expansion IO (uPC) Off-line		---
AL45	Expansion IO (pCOe) Off-line		---
AL48	Discharge gas temperature sensor circuit 1 faulty or not connected		---
AL49	Discharge gas temperature sensor circuit 2 faulty or not connected		---
AL50	Board re-start from lost power		Not an alarm
AL59	Circuit breaker compressor 2 circuit 1		---
AL60	Circuit breaker compressor 3 circuit 1		---
AL61	Circuit breaker compressor 1 circuit 2		---
AL62	Circuit breaker compressor 2 circuit 2		---
AL63	Circuit breaker compressor 3 circuit 2		---
AL65	Low pressure sensor circuit 2		---

AL66	High pressure pressostat circuit 2		---
AL67	High pressure sensor circuit 2		---
AL75	High discharge gas temperature circuit 1		---
AL76	High discharge gas temperature circuit 2		---
AL84	High heat recovery inlet temperature alarm		---
AL85	High system inlet temperature alarm		---

Alarm history

Each time an alarm is generated it is saved in the “alarm history” memory. This memory contains the last 100 alarms recorded. For each alarm saved the inlet and outlet water temperatures are also recorded, so that the service personnel can have a clear picture of the unit at the time the alarm occurred.

To access the alarm history:
(a) Press the key ( ) and enter the alarm display.
(b) If any are present, go through the active alarms with the key ( ) and reach the icon that gives access to the alarm history.
(3) Press the key ( ) to enter the alarm history.

(4) To exit the alarm history press the key ( ) or the key ( ).

Alarm history and memory

Display on the unit	Index	Display/Parameter
	A	**Code of active alarm:** shows the code for the active alarm currently displayed
	B	**Description of active alarm:** shows the description of the active alarm currently displayed
	C	**Total number of active alarms**: shows the total number of active alarms. Active alarms are announced by a red light on the bell labelled key
	D	**Alarm history - Alarm time:** shows the time of the alarm occurring
	E	**Alarm history - Alarm date**: shows the date of the alarm occurring
	F	**Alarm history - Alarm index:** shows the index of alarm (maximum 100) in the alarm history
	G	**Alarm history - Alarm code:** shows the identifying code of thee alarm
	H	**Alarm history - Alarm description:** shows the description of the alarm
	I	**Alarm history - Temperature IN:** shows the water inlet temperature at the time the alarm occurred
	L	**Alarm history - Temperature OUT:** shows the outlet water tempe ature at the time the alarm occurred
	M	**Alarm history - Refrigerant circuit pressure info:** pressing the enter key during the display of the alarm history the water temperature data is replaced by the high (HP) and low (LP) pressure values measured on the refrigerant circuit at the time the alarm occurred **Note: further pressing of the enter key alternates between the water temperatures and the circuit refrigerant pressures**

THE ALARM HISTORY CANNOT BE CANCELLED and having a limit of 100 alarm histories, any additional new alarms after the index value 99 will incrementally start with the index value 00 and overwrite the old data.

Quick reference

WARNING: This table refers to the specific pages only for the basic operation of the unit and for further information refer to the index of the manual.

Function	Page
Switching the unit on or off	19
Season settings (HEAT / COOL)	19
Setting the water production setpoints	20
Programming time-clock	21

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